

# STORMWATER MANAGEMENT PROGRAM (SWMP) CITY OF HOLYOKE, MASSACHUSETTS EPA NPDES PERMIT NUMBER: MAR041000

May 2023 Last updated June 2025

#### A Report Prepared by:

#### **CITY OF HOLYOKE, MASSACHUSETTS**

536 Dwight Street Holyoke, Massachusetts 01040

#### STORMWATER MANAGEMENT PROGRAM (SWMP)

#### Prepared by:

Sadia Khan, PhD, EIT, Staff Professional

#### Reviewed by:

Pamela Westgate, PE. Principal Professional Peter Varga, Project Manager

#### 2025 Updates Prepared by:

Miira Gates, City of Holyoke, Stormwater Coordinator and Grantwriter

#### 2025 Updates Reviewed by:

Matt Sokop, City of Holyoke, City Engineer Victoria Houle, City of Holyoke, Interim Engineer

Page i of v June 2025

#### **TABLE OF CONTENTS**

<u>Sect</u>	<u>ion</u>		<u>Page</u>				
1		IFICATION STORMWATER MANAGEMENT PROGRAM, CITY OF HOLYOKE, SACHUSETTS	1				
	1.1	SWMP UPDATES	2				
2	ВАСК	GROUND	4				
	2.1	STORMWATER REGULATION	4				
	2.2	PERMIT PROGRAM BACKGROUND	5				
	2.3	STORMWATER MANAGEMENT PROGRAM	5				
	2.4	CONSENT DECREE MS4 REQUIREMENTS	6				
	2.5	HOLYOKE MS4 BACKGROUND	7				
	2.6	SEMI-ANNUAL UPDATES AND COMPLIANCE REPORTING	8				
	2.7	ELIGIBILITY	8				
	2.8	ENDANGERED SPECIES	8				
	2.9	HISTORIC PROPERTIES	8				
3	STOR	STORMWATER MANAGEMENT PROGRAM TEAM					
	3.1	SWMP TEAM	10				
	3.2	SWMP TEAM RESPONSIBILITIES	11				
	3.3	MS4 RECEIVING WATERS	12				
4	MINI	MUM CONTROL MEASURES (MCM)	14				
	4.1	MCM 1: PUBLIC EDUCATION AND OUTREACH	14				
		4.1.1 Objective	14				
		4.1.2 Permit Summary	14				
		4.1.3 Updated Program	16				
	4.2	MCM 2: PUBLIC INVOLVEMENT AND PARTICIPATION	19				
		4.2.1 Objective	19				
		4.2.2 Permit Summary	19				
		4.2.3 Updated Program	19				
	4.3	MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM	20				
		4.3.1 Objective	21				

#### **TABLE OF CONTENTS**

<u>Section</u>	<u>1</u>			Page
		4.3.2	Permit Summary	21
		4.3.3	Updated Program	21
		4.3.4	Measurable Goals	22
	4.4	MCM 4	: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL	24
		4.4.1	Objective	24
		4.4.2	Permit Summary	24
		4.4.3	Updated Program	24
		4.4.4	Measurable Goals	25
	4.5		5: POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMEN	
		4.5.1	Objective	27
		4.5.2	Permit Summary	27
		4.5.3	Updated Program	28
		4.5.4	Measurable Goals	28
	4.6	мсм 6	S: POLLUTION PREVENTION / GOOD HOUSEKEEPING	31
		4.6.1	Objective	31
		4.6.2	Permit Summary	31
		4.6.3	Updated Program	32
		4.6.4	Measurable Goals	33
5	ADDITI	ONAL R	EQUIREMENTS	36
	5.1	GROUN	NDWATER RECHARGE AND INFILTRATION	36
	5.2	DISCHA	ARGES TO PUBLIC DRINKING WATER SUPPLIES	36
6	SEMIA	NNUAL	EVALUATION	38
7	IMPAI	RMENTS	AND WATER QUALITY LIMITED WATERS	39
	7.1	CONSE	NT DECREE TERM 19 STORMWATER NITROGEN MINIMIZATION MEASURES	39
		7.1.1	Connecticut River Nitrogen Reduction	39
	7.2	BACTE	RIAL IMPAIRMENTS	40

#### **TABLE OF CONTENTS**

Section	<u> </u>	Page
8	REFERENCES	42
TABLES		
Table 1	: Change Log of SWMP Updates (Start Date: 5/31/2023)	2
Table 2	: Consent Decree Requirements Included in Stormwater Management Program	7
Table 3	: Responsible Parties for SWMP Implementation	10
Table 4	: MS4 Receiving Waterbodies in the City of Holyoke	12
Table 5	: Pollutants of Concern	15
Table 6	: Implementation Program for MCM 1, Public Education and Outreach Program	17
Table 7	: Implementation Program for MCM 2, Public Involvement and Participation	20
Table 8	: Implementation Program for MCM 3, Illicit Discharge Detection and Elimination (IDDE) Program	23
Table 9	: Implementation Program for MCM 4, Construction Site Stormwater Runoff Control	
Table 1	0: Implementation Program for MCM 5, Post Construction Stormwater Management in New Development and Redevelopment	29
Table 1	1: Implementation Program for MCM 6, Pollution Prevention / Good Housekeeping	34
Table 1	2: Additional or Enhanced BMP (Public Education and Outreach)	39
APPENI	DICES	
A B	Stormwater System Map NOI	
C D	The Joint Authorization Letter from USEPA and MASSDEP IDDE Plan	
E F	Threatened and Endangered Species List and the Permit Letter from USFWS Good Housekeeping Manual	
G H	City Ordinance, Regulation, Design Guideline Review Previous Annual Certifications	

#### **LIST OF ACRONYMS**

BMP Best Management Practice

CGP Construction General Permit

CWA Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)

ESA Endangered Species Act

IDDE Illicit Discharge Detection and Elimination

Massachusetts Department of Environmental Protection

MCM Maximum Control Measure

MGL Massachusetts General Laws

MS4 Municipal Separate Storm Sewer System

NOI Notice of Intent

NPDES National Pollutant Discharge Elimination System

SWMP Stormwater Management Program

SWPPP Stormwater Pollution Prevention Plan

USEPA U. S. Environmental Protection Agency

USFWS U.S. Fish & Wildlife Service

Page v of v June 2025

#### 1 CERTIFICATION

#### STORMWATER MANAGEMENT PROGRAM, CITY OF HOLYOKE, MASSACHUSETTS

Authorized Representative: All applications, reports, or information submitted to the Director shall be signed and certified by either a principal executive officer or ranking elected official (See 40 CFR 122.22).

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

Printed Name: Joshua Garcia Title: Mayor, City of Holyoke

Signature:

Date: \_\_\_June 27, 2025

#### 1.1 SWMP UPDATES

Updates to the Stormwater Management Program will be recorded in the following change log (Table 1) to reflect changes to the program.

Table 1: Change Log of SWMP Updates (Start Date: 5/31/2023)

Date	SWMP Section	Change	Reason
6/27/25	Section 2.5	Update to number of City outfalls	Number of outfalls was updated through ongoing mapping efforts and field investigations
	Section 3.1	Updates to Stormwater Team	Table has been updated to reflect current team members due to City and Veolia staffing changes
	Section 4.1.3	Updates to Table 6	Updated BMP 1-2 to reflect inclusion of educational flyers and factsheets on City website.
	Section 4.2.3	Updates to public education and river cleanup events	Language updated to include public educational tours on stormwater and wastewater and also sponsoring Source to Sea cleanup event.
	Section 4.2.3	Updates to Table 7	Table 7 was updated to include details on BMP 2-3 Public Participation and sponsoring Source to Sea Cleanup event.
	Section 4.3.3	Additional information provided to indicate next steps taken by the City to address illicit discharge detection and elimination as well as mapping updates completed since May 2023	To provide updated information on the City's recently completed steps and current steps being taken to further address MCM Goal 3.
	Section 4.3.4	Updates to Table 8	Table 8 was updated to include new statuses for MCM 3 implementation tasks.

Section 4.6.3	Updated to include information on City's recent efforts to address MCM Goal 5.	To provide updated information on the City's current steps being taken to further address MCM Goal 5.
Section 4.6.4	Updates to Table 11	Table 11 was updated to indicate new status to tasks related to BMP 6-1, 6-3, and 6-6.
Section 7.1.1	Updates to City's recent activities to address Nitrogen removal.	To provide updated information on the status of the BMP Demonstration Project.

#### 2 BACKGROUND

Municipal separate storm sewer systems (MS4s) are designed to reduce the impact of stormwater induced flooding and damage to infrastructure. Unfortunately, MS4s can convey pollutants to surface waters. As stormwater flows over roads, parking lots, lawns and developed areas it picks up pollutants (trash, oil, sediment, nutrients). Some of these pollutants are channeled through the MS4 and discharged into receiving waters. MS4 permits are designed to prevent pollutants from entering stormwater and receiving waterbodies. The City of Holyoke (hereinafter "the City" or "Holyoke") has had an MS4 permit since 2003. Recent updates to the Massachusetts MS4 general permit require the City to have a written Stormwater Management Program (SWMP).

A hardcopy of the SWMP is kept at the City Engineer's Office and is available to the public during normal business hours. The SWMP is also available to representatives from the US Environmental Protection Agency (EPA), Massachusetts DEP (MassDEP), US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) at the time of an inspection or upon request.

The SWMP is posted on the City's website (<a href="https://www.holyoke.org/dpw-stormwater-information/">https://www.holyoke.org/dpw-stormwater-information/</a>).

#### 2.1 STORMWATER REGULATION

The Stormwater Phase II Final Rule was promulgated in 1999 and was enacted as the next step after the 1987 Phase I Rule in the USEPA's effort to preserve, protect, and improve the nation's water resources from polluted stormwater runoff. The Phase II program expands the Phase I program by requiring additional operators of MS4s in urbanized areas and operators of small construction sites, through the use of National Pollutant Discharge Elimination Systems (NPDES) permits, to implement programs and practices to control polluted stormwater runoff. Phase II is intended to further reduce adverse impacts to water quality and aquatic habitat by instituting the use of controls on the unregulated sources of stormwater discharges that have the greatest likelihood of causing continued environmental degradation. Under the Phase II rule, all MS4s with stormwater discharges from Census-designated Urbanized Areas are required to seek NPDES permit coverage for those stormwater discharges.

#### 2.2 PERMIT PROGRAM BACKGROUND

On May 1, 2003, USEPA Region 1 issued its Final General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (2003 Small MS4 permit) consistent with the Phase II rule. The 2003 Small MS4 permit covers "traditional" (i.e., cities and towns) and "non-traditional" (.e., federal and state agencies) MS4 operators located in the states of Massachusetts and New Hampshire. USEPA is the jurisdictional authority for this permit as neither Massachusetts nor New Hampshire has obtained delegated authority from the federal government to administer this program. This Permit expired on May 1, 2008, but remained in effect until operators were authorized under the 2016 MS4 General Permit, which became effective on July 1, 2018. The City of Holyoke negotiated a Consent Decree (Appendix A) which was finalized on March 22, 2023, which defines the terms that the City shall take to reach compliance with the MS4 program.

Holyoke's MS4 is classified as a small system (serving less than 100,000 people) and is regulated under USEPA's Phase II Stormwater Program. The Massachusetts's MS4 General Permit is issued and managed by the USEPA and Mass DEP. Holyoke's first General Permit (MAR041011) was issued in May 2003. On September 27, 2018, the City submitted a Notice of Intent (NOI) (**Appendix B**) for coverage under the updated Massachusetts MS4 General Permit (2016 MS4 permit) which became effective on July 1, 2018 (MAR041000). The joint Authorization Letter from USEPA and MassDEP is in **Appendix C**.

### 2.3 STORMWATER MANAGEMENT PROGRAM

(SWMP, Consent Decree Term #19.a)

The SWMP describes and details the activities and measures that will be implemented to meet the terms and conditions of the 2016 MS4 permit and the 2023 Consent Decree. This document will be updated or modified as the City's activities are modified, changed, or updated to meet Permit and Consent Decree conditions.

The main elements of the SWMP are:

- 1. A public education program to affect public behavior contributing to stormwater pollution.
- 2. Opportunities for the public to participate and provide comments on the stormwater program.
- 3. A program to effectively find and eliminate illicit discharges within the MS4.
- 4. A program to effectively control construction site stormwater discharges to the MS4.

- 5. A program to ensure that stormwater from development projects entering the MS4 is adequately controlled by the construction of stormwater controls.
- 6. A good housekeeping program to ensure that stormwater pollution on municipal properties and from municipal operations are minimized.

#### 2.4 CONSENT DECREE MS4 REQUIREMENTS

On March 22, 2023 a final filing of a Consent Decree was issued to the City of Holyoke stating non-compliance with the City's NPDES permit, Section 301(a) of the Clean Water Act (CWA), and the Massachusetts Clean Water Act, M.G.L. c. §§ 21, 26-53 by discharging pollutants into the waters of the United States from both combined sewer overflows (CSOs) and the City's MS4 storm drains. The Consent Decree includes requirements that the City must complete to regain compliance with Federal and State regulations. Provisions of the Consent Decree related to the City's MS4 system are included in this SWMP to ensure the City is actively working towards compliance as per the terms of the Consent Decree. Table 2 includes all Consent Decree requirements related to the MS4 system and the corresponding section of the SWMP that details steps the City is taking to comply with the Consent Decree requirements.

Table 2: Consent Decree Requirements Included in Stormwater Management Program

Consent Decree Section	Description of Requirement	SWMP Section
11-17	Identification, elimination, and prohibition of unauthorized discharges to MS4	5.3: MCM3 - Illicit Discharge Detection and Elimination
19 b ii	Ordinance to address post-construction runoff from new development and redevelopment	5.5: MCM5 – Post-Construction Stormwater  Management in New Development and  Redevelopment
19.a	Updated SWMP with Consent Decree requirements included (due 5/31/2023)	May 2023 SWMP (Entire document)
19.b.i	Semi-annual Message Distribution	5.1: MCM1 – Public Education & Outreach
19 b ii	Stormwater Management in New Development and Redevelopment	5.5: MCM5 – Post-Construction Stormwater  Management in New Development and  Redevelopment
19.b.iii	Good House Keeping and Pollution Prevention for Permittee Owned Operations	5.6: MCM6 – Pollution Prevention / Good Housekeeping
19.c	Nitrogen Source Identification Report (due 1/30/2024)	8.1.1: Connecticut River Watershed, the Housatonic River Watershed, or the Thames River Watershed Nitrogen Reduction
19.d	Potential Structural BMPs (due 1/30/2024)	8.1.1: Connecticut River Watershed, the Housatonic River Watershed, or the Thames River Watershed Nitrogen Reduction
20-21	Geographic Information System Maps ( <i>due</i> 12/31/2022)	5.3: MCM3 – Illicit Discharge Detection and Elimination

#### 2.5 HOLYOKE MS4 BACKGROUND

The City of Holyoke covers an area of approximately 22.8 square miles and is located on the Connecticut River. The requirements of the 2016 MS4 permit only apply to the areas of Holyoke's system that are served by the MS4 drainage system. The MS4 discharges to the following receiving streams, including three (3) that are listed on the 2018/2020 CWA 303(d) list of impaired water bodies for Massachusetts:

- Connecticut River
- Long Pond Cove
- Pequot Pond (Outside City boundary)

Based on the most recent mapping/evaluation the City has identified 101 MS4 outfalls that are regulated under the 2016 MS4 permit and the City's Consent Decree.

## 2.6 SEMI-ANNUAL UPDATES AND COMPLIANCE REPORTING (Consent Decree Term # 22)

Each year since 2003, the City has submitted an MS4 Annual Report to the USEPA. This annual requirement will continue. Per the compliance requirements of the Consent Decree, reporting will be due at the end of July and end of January. In addition, this SWMP is not intended to be a static document, and as the City's efforts progress and evolve, so too will this program. The SWMP will be updated periodically, but at a minimum at least once per year, and the most up-to-date version of this program will be available to the public on a timely basis via the City's website.

#### 2.7 ELIGIBILITY

The City of Holyoke is in the Commonwealth of Massachusetts and its drainage system is defined as a small municipal storm sewer system as defined in 40 CFR §122.26(b)(16). The City is located within an urbanized area as determined by the 2000 census data provided by the Bureau of Census. The 2016 General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems authorizes storm water discharge from small, City-owned MS4 systems located within Massachusetts. A Notice of Intent was developed to obtain coverage for stormwater discharges to waters of the United States under this permit in 2016. Term 67 of the Consent Decree (page 34) requires that other permits in place are complied with, hence Holyoke is still subject to the 2016 MS4 General Permit.

#### 2.8 ENDANGERED SPECIES

During the Notice of Intent (NOI) submission process, the City completed an Endangered Species Act (ESA) review and determined that the City of Holyoke's MS4 contains the Northern Long-eared Bat (*Myotis septentrionalis*) and Small Whorled Pogonia (*Istoria medeoloides*). Using the Endangered Species Act (ESA) eligibility criteria as referenced in the 2016 MS4 permit, Addendum A, The Endangered Species Guidance, the City certified eligibility according to the USFWS Criterion C. Criteria C indicates that no endangered species or critical habitat areas were identified through USFW's IPac's site. See **Appendix E** for the Threatened and Endangered Species List and the permit letter from USFWS.

#### 2.9 HISTORIC PROPERTIES

The 2016 MS4 permit prohibits discharges that adversely affect properties listed (or eligible to be listed) on the National Register of Historic Places. Holyoke certified in the NOI that it meets eligibility Criteria A for the National Historic Preservation Act (NHPA) since stormwater discharges do not have the potential

Page 8 of 42 June 2025

to cause effects on historic properties. Holyoke will consult with the NHPA, as necessary before installing a structural BMP that is not identified in the NOI. Installation of any new structural BMPs must stop if there is evidence of any prehistoric or historic artifacts.

#### 3 STORMWATER MANAGEMENT PROGRAM TEAM

#### 3.1 SWMP TEAM

The City of Holyoke DPW Department is the primary department responsible for coordinating SWMP-related activities. The Holyoke DPW Director and the Regional Manager at Veolia are in responsible charge for the aspects of the program for which the respective entity is responsible. The specific roles of team members are shown in Table 3. Holyoke works with PVPC for public educational materials.

**Table 3: Responsible Parties for SWMP Implementation** 

City Items	City Items						
Responsible Charge	DPW Director						
Implementation	Matt Sokop and Miira Gates	MS: City Engineer MG: Stormwater Coordinator	MS:(413) 322-5645 MG:(413) 322-5645 x5152				
Coordination	<ul> <li>Schedule meetings to coordinate among different departments</li> <li>Coordinate with PVPC, ensure implementation of public education initiatives</li> <li>Provide opportunities for public review and input of SWMP</li> <li>Attend CT River Stormwater Committee meetings</li> <li>Construction stormwater management (erosion and sediment control; site plan review, and construction waste control)</li> </ul>						
Public Education	<ul> <li>Dog Waste signage</li> <li>Dog waste cleanup information</li> </ul>						
Support Cleanup Initiatives	CT River Source	e to Sea Cleanup					

City Items	City Items					
Pollution Prevention/Good Housekeeping/Ad vance Best Management Practices (BMPs)	<ul> <li>Optimize road salt use during winter operations.</li> <li>Identify municipal properties for BMP initiatives to reduce impervious surfaces</li> <li>Work to update ordinances to accommodate green infrastructure</li> <li>Develop Street and parking lot design guidelines to support low impact design (LID)</li> <li>Develop O&amp;M plans and procedures</li> <li>Maintain inventory of parks and open spaces</li> <li>Employee trainings</li> </ul>					
Veolia Items						
Responsible Charge	Veolia Regional Mana	ger				
Implementation	Jason Swain	Project Manager	(413) 534-2222			
Public Education	Educate indu	strial users on BMPs				
Support Cleanup Initiatives	Support clean	nup initiatives				
Illicit Discharge Detection and Elimination	<ul> <li>Dry weather screening</li> <li>Wet weather screening</li> <li>Catchment investigations</li> <li>Employee training on IDDE</li> </ul>					
Pollution Prevention/Good Housekeeping	<ul> <li>Street sweeping plan</li> <li>Catch basin cleaning schedule</li> <li>Employee training</li> </ul>					
Documentation		itary sewer overflow (SSO tten IDDE program map	) inventory			

#### 3.2 SWMP TEAM RESPONSIBILITIES

The SWMP Team is multidisciplinary and includes members with several roles. As a team, the City is responsible for fully adhering to the Consent Decree, 2016 MS4 permit and this SWMP. Team actions include reviewing and updating appropriate ordinances, legal enforcement, and disciplinary actions, maintaining records, City wide system mapping, and outfall screening and sampling. The Holyoke DPW is leading many of these tasks. One of the major data requirements is the City-wide system mapping. The SWMP coordinator is responsible for assembling, corroborating, maintaining, and presenting mapping data for the City's MS4 area. This is a critical role with respect to the IDDE program.

#### 3.3 MS4 RECEIVING WATERS

According to the *Massachusetts Year 2018/2020 Integrated List of Waters*, which was approved by the USEPA in 2022, there are two (2) waterbodies with three (3) corresponding segments in Holyoke that are water quality limited. The Connecticut River, Log Pond Cove, and Pequot Pond in Southampton are Category 5 waters considered to be "water quality limited" because they do not meet water quality standards and one or more of their uses is either impaired or threatened. The MS4 permit prohibits increased discharges to Category 5 waters unless it can be demonstrated that there is no net increase in loading from the MS4 to the impaired water of the pollutant(s) for which the water body is impaired.

The City must comply with provisions in Appendix H of the 2016 MS4 permit that address E. coli and TSS in the Connecticut River and Log Pond Cove and Enterococcus in Pequot Pond.

Although TMDLs have not been established for the segments of the Connecticut River that receive stormwater discharges from the City, the river flows to Long Island Sound (LIS) which has a TMDL for nitrogen. Therefore, the City must meet additional requirements listed in Consent Decree Term 19 that are designed to reduce nitrogen in stormwater runoff. Table 4 lists all receiving waters, impairments, corresponding segment ID in *Massachusetts Year 2018/2020 Integrated List of Waters* and number of outfalls discharging to each waterbody segment. Outfall information is subject to change as changes are made to separate stormwater from CSOs.

Table 4: MS4 Receiving Waterbodies in the City of Holyoke

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Segment ID <sup>1</sup>	Pollutants Causing Impairments
Connecticut River	19	MA34-04 MA34-05	E. coli, Solids, TSS, Turbidity, PCBs in Fish Tissue
Log Pond Cove	0	MA34124	E. coli, Solids, TSS, Turbidity, PCBs in Fish Tissue
Broad Brook	19	NA	None
Tannery Brook	2	NA	None
Schoolhouse Brook	3	NA	None
Ashley Cutoff	3	NA	None
North Railroad Pond	3	NA	None
Wright Pond	2	NA	None

Pequot Pond <sup>2</sup>	4	MA32055	Chlorophyll-a, Enterococcus
Other (i.e., swamp, drainage swales, wetlands etc.)	14	NA	None

<sup>1 &</sup>lt;u>Massachusetts Year 2018/2020 Integrated List of Waters</u>
2 Stormwater from four outfalls is directed to a tributary of Pequot Pond located in Southampton Massachusetts.

#### 4 MINIMUM CONTROL MEASURES (MCM)

The City of Holyoke has existing programs and BMPs in compliance with the NPDES Stormwater Phase II Rule. The review of the existing conditions and identification of stormwater needs provided the framework for identifying best management practices under the six minimum control measures (MCMs). The aim of this stormwater management program is to reduce pollutant loads from stormwater systems to the maximum extent practicable, protect water quality, and meet the requirements under the Clean Water Act. As per Consent Decree Term 19, the City will identify and implement additional BMPs to reduce nitrogen discharges to waterbodies, or their tributaries. Some BMPs are on-going efforts that must be completed or updated on a semi-annual basis (per Term 19 of the Consent Decree). A summary of the MCM objectives and requirements are detailed in the following sections along with specific actions and measurable goals.

## 4.1 MCM 1: PUBLIC EDUCATION AND OUTREACH (Consent Decree Term #19.b)

#### 4.1.1 Objective

The 2016 MS4 permit states that:

"The permittee shall implement an education program that includes educational goals based on stormwater issues of significance within the MS4 area. The ultimate objective of a public education program is to increase knowledge and change behavior of the public so that the pollutants in stormwater are reduced."

#### 4.1.2 Permit Summary

Term 19.b.i of the Consent Decree requires that the City identify and implement additional or enhanced BMPs to reduce Nitrogen discharges to waterbodies, or their tributaries. To meet these requirements, the Public Education and Outreach Program will include focused educational information regarding both industrial and residential activities including illegal dumping into storm drains.

Education and outreach efforts may be performed in coordination with local groups (I.e., watershed associations, or schools). The materials may include, but are not limited to, targeted online pamphlets, fact sheets, brochures, public service announcements, and storm drain stenciling. These messages will consist of stormwater pollution and prevention topics that are relevant to the City. Additionally, the

program will educate the public on the proper management and disposal of pollutants of concern, which are listed in the Final Massachusetts Integrated List of Waters for the Clean Water Act 2018/2020 Reporting Cycle: <a href="https://www.mass.gov/doc/final-massachusetts-integrated-list-of-waters-for-the-clean-water-act-20182020-reporting-cycle/download">https://www.mass.gov/doc/final-massachusetts-integrated-list-of-waters-for-the-clean-water-act-20182020-reporting-cycle/download</a>. The City will focus on actions the public can take to reduce these pollutants at the source by disseminating educational materials on litter disposal, pet waste, household hazardous waste disposal, proper use of fertilizer and pesticides, and effects of impervious areas on water bodies. The pollutants of concern, their potential impacts to Holyoke's waterbodies, and the behaviors that can reduce those impacts are listed in Table 5.

**Table 5: Pollutants of Concern** 

Pollutants of Concern	Waterbodies of Concern	Impact to Waterbodies	Targeted Sources	Desired Behaviors
Bacteria/ Pathogens	Connecticut River, Log Pond Cove, Pequot Pond	Can cause disease and make water unfit for recreation.	<ul><li>Pet waste</li><li>Septic</li></ul>	<ul> <li>Properly dispose of pet waste</li> <li>Properly operate and maintain septic systems</li> <li>Properly dispose of septic waste</li> </ul>
Nitrogen	Connecticut River	Excessive amounts of nitrogen can cause harmful algae blooms and create low oxygen conditions that harm aquatic life.	<ul> <li>Pet waste</li> <li>Grass clippings</li> <li>Lawn fertilizer</li> <li>Leaf litter</li> </ul>	<ul> <li>Properly dispose of pet waste</li> <li>Use fertilizer sparingly and never before storms</li> <li>Properly dispose of leaves and grass clippings</li> </ul>
Solids, Oils & Grease (Hydrocarbons), or Metals	Connecticut River, Log Pond Cove	Reduce the penetration of light in the water and limit the growth of aquatic plants.	<ul> <li>Industrial facilities</li> </ul>	Proper pre-treatment of water entering storm drains

#### 4.1.3 Updated Program

The City of Holyoke developed and implemented education and outreach requirements and is committed to informing residents on stormwater issues through engagement with public interest groups, leveraging existing educational materials, and maintaining a focus on reaching a diverse audience.

There are multiple education and outreach programs through which Holyoke seeks to raise the public's awareness to environmental and stormwater-specific issues. New programs and resources are continuously considered and implemented to enhance the Public Education and Outreach Program for the SWMP. The City plans to use various strategies and outreach media, including:

- Department websites, social media, and special programming,
- Cooperative efforts with local organizations and environmental advocates, such as the Pioneer Valley Planning Commission (PVPC).
- Informational materials (on leaf litter, grass clippings, pet waste management, etc.).

Holyoke's Public Education and Outreach Program and implementation plan is presented in Table 6. Each BMP includes a lead responsible department, and some BMPs also include supporting departments or parties, as well as names of individuals responsible for implementation.

The success of each BMP will be measured and evaluated against the metrics provided in the "Measurable Goal" category. Data collected for each BMP will be recorded by the City, and the efficacy of each BMP towards reaching the public education goals will be presented in each annual report.

Table 6: Implementation Program for MCM 1, Public Education and Outreach Program

BMP #	BMP Media/Category	BMP Description	Targeted Audience	Responsible Department/Parties	Measurable Goal	Status
1-1	City Webpage/social media	<ul> <li>Post a comprehensive flyer/pdf/fact sheet on the City website. Include educational messages on best practices for: stopping illegal discharges, automotive maintenance &amp; washing, fertilizer management, septic system maintenance, swimming pool water disposal, grass clipping disposal, &amp; pet waste disposal.</li> <li>Post on social media about the following message topics at the appropriate times and link to the posted material: Grass clipping disposal (Spring), Fertilizer management (Spring), Pet Waste Disposal (Summer), Septic.</li> <li>Post videos on any Stormwater Topics and promote on Social Media.</li> </ul>	Residents; Business, Institutions, Developers, and Commercial Facilities	DPW Operations	Views or interactions each social media post.	On-going

BMP #	BMP Media/Category	BMP Description	Targeted Audience	Responsible Department/Parties	Measurable Goal	Status
1-2	Factsheets	<ul> <li>Links to the City Stormwater page with messages on best practices for building maintenance, use/storage of salt/sand or other de-icing material, pollution prevention, waste management, impervious surface maintenance, automotive maintenance, and swimming pool water disposal.</li> <li>Post educational flyer on Erosion Controls, Low Impact Design (LID), and Green Infrastructure technologies on City website.</li> <li>Educate industrial users on BMPs</li> </ul>	Residents; Business, Institutions, Developers, and Commercial Facilities	DPW Operations, Planning & Economic Development and Licensing Dept., Veolia/City's Sewer Operations Contractor	Clicks or views on the city webpage	On-going
1-3	Pet Waste Management	<ul> <li>Insert Flyer/Brochure into Dog Licenses at the time of dog license issuance. Educate and encourage pet owners to pick up after their pets.</li> <li>Work with Parks Department to post signs in public parks reminding pet owners to pick up after their pets.</li> </ul>	Pet Owners	City Clerk's Office	Number of signs posted, number of bags distributed.	On-going

#### 4.2 MCM 2: PUBLIC INVOLVEMENT AND PARTICIPATION

#### 4.2.1 Objective

The 2016 MS4 permit states:

"All public involvement activities must comply with the State public notice requirements at MGL Chapter 30A Section 18-25 and local public notice requirements."

"The permittee must provide opportunity for the public to participate in the review and implementation of the storm water management program."

#### 4.2.2 Permit Summary

Section 2.3.3. of the 2016 MS4 permit requires the City to provide opportunities for public participation in the implementation and review of the SWMP in accordance with Massachusetts General Law (MGL) Chapter 30A Section 18-25, which provided requirements for public accessibility to governmental meetings.

Therefore, the City shall comply with State public notice requirements (MGL Chap. 30A, Sections 18-25 – effective 07/10/2010) when conducting all public involvement activities. The SWMP, and all annual reports will be made available online for the public to see. Additionally, the City shall provide the public with annual opportunities to participate in the review and implementation of the SWMP. Public participation opportunities may include, but are not limited to, waterbody clean-ups; stream monitoring; formation of a stormwater management committee; websites; or phone hotlines. All public participation opportunities will be reported in the annual report.

#### 4.2.3 Updated Program

Since signing the NOI for the 2016 MS4 permit, the City planned and implemented several on-going BMPs to meet the permit requirements to engage and solicit community participation in the implementation of the SWMP. Further Action will be taken to create an online form for the public to review and comment on the SWMP. The City is engaging with the public through various mediums and partnerships with other governmental/non-governmental entities and organizations. This includes interactive programs with schools, events with other City departments, and sponsoring local river cleanups.

Table 7: Implementation Program for MCM 2, Public Involvement and Participation

BMP #	ВМР	BMP Description	Responsible Department/Parties	Additional Description/ Measurable Goal	Status
2-1	Public Review	SWMP Review	DPW Operations	Annual review of SWMP and posting of SWMP on website	On-going
2-2	Public Participation	Provide Contact information for Stormwater Manager on website	DPW Operations	Schedule public comment on SWMP	On-going
2-3	Public Participation	Support Annual Source to the Sea Cleanup	DPW Operations/ Veolia/City's Sewer Operations Contractor	Provide containers for waste collection, pickup waste at end of event, sponsor cleanup event	On-going
2-4	Public Participation	Hold annual Household Hazardous Waste (HHW) events	DPW Operations	Track quantity of waste collected and hold at least annually	On-going
2-5	Public Participation	Participate in CT River Stormwater Committee Incl. Public Events	DPW Operations	Attend 75% of meetings	On-going

## 4.3 MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM (Consent Decree Term #11-17)

#### 4.3.1 Objective

The 2016 MS4 permit states:

"The permittee shall implement an IDDE program to systematically find and eliminate illicit sources of non-stormwater discharges to its municipal separate storm sewer system and implement procedures to prevent such discharges."

#### 4.3.2 Permit Summary

The Consent Decree Term 12 requires the City to maintain an adequate legal authority to prohibit, investigate, and eliminate illicit discharges and implement appropriate enforcement mechanisms. The City drafted an IDDE plan to meet the requirements of this Consent Decree by the stipulated deadline of May 31, 2023 (Appendix D).

An illicit discharge is any discharge to a municipal separate storm sewer system that is not composed entirely of stormwater, except discharges pursuant to a NPDES permit. The IDDE plan is a systematic plan for identifying and eliminating such discharges.

Major components of the IDDE plan include storm water mapping, outfall inventory and ranking, outfall screening and sampling, catchment investigations, identification, and removal of illicit discharges to the MS4 system, and employee training. The IDDE plan is meant to be an iterative document with continued mapping, ranking, and investigations.

#### 4.3.3 Updated Program

The City of Holyoke has reviewed its Wastewater and Stormwater Drainage Use Regulations and determined that the existing language sufficiently supports IDDE enforcement actions. No changes to the ordinance will be required to enforce the removal of illicit connections.

The City of Holyoke drafted an IDDE Plan as a requirement for the Consent Decree Term 12. The Plan includes screening and monitoring of all known MS4 outfalls and interconnections in both dry and wet weather conditions (as defined in the Consent Decree), investigation of all catchment areas, and identification and removal of illicit discharges to the MS4 system. The City continues mapping outfalls and structures, has completed its outfall screening and is on schedule for the ongoing dry and wet

weather screening and sampling, and catchment investigations. The IDDE Report outlines the outcomes of the screenings and catchment investigations.

The City will further update the IDDE Plan, as needed, to ensure consistency with any requirements in future NPDES Permits issued to the City. This IDDE program will also be updated with the progress that Holyoke will make towards understanding the extents and condition of their stormwater system and identifying possible illicit connections.

The City of Holyoke developed an updated stormwater map to address mapping requirements for the Consent Decree Term 20 (**Appendix A**). The City is actively updating the current version which includes West Holyoke in the mapping. The mapping will be further updated with the following information:

- 1. Outfalls and receiving waters;
- 2. Open channel conveyances;
- 3. Interconnections with other MS4s and other storm sewer systems;
- 4. Municipally owned stormwater treatment structures;
- 5. Waterbodies identified by name and indication of all use impairments; and
- 6. Initial catchment delineations identifying the contributing area that drains to each individual outfall or interconnection.

While the Consent Decree does not specifically include any SSO reporting requirements, as per 2016 MS4 permit, the IDDE plan is required to report any SSO's during the permit term, and the City shall comply with the reporting requirements for SSOs also stipulated in 314 C.M.R. § 12.03(8), Operation, Maintenance and Pretreatment Standards for Wastewater Treatment Works. Based on the review of available documentation pertaining to SSOs, the City of Holyoke has reported 9 SSOs that discharged to the MS4 within the past five years. Moving forward the City will maintain an inventory that includes all SSOs.

#### 4.3.4 Measurable Goals

Proper adherence to the 2016 MS4 permit and the Consent Decree includes an adequate legal authority and enforcement strategy for illicit discharges, an up-to-date SSO inventory, a robust system wide map, a written IDDE plan, trained field staff, and an enhanced understanding of catchments, interconnections, and water quality in the City. Each aspect of the IDDE program will be reported in the Semi-annual Compliance Report, and the IDDE Plan will be updated to reflect reprioritizations, mapping, and other

gathered data. The following summarizes requirements for MCM 3. The measurable goals consist of completing the requirements by the specified dates shown below.

Table 8: Implementation Program for MCM 3, Illicit Discharge Detection and Elimination (IDDE) Program

ВМР	Responsible Department/Parties	Proposed Schedule	Status
Regulatory Mechanism/Ordinance	Veolia/City's Sewer Operations Contractor and City of Holyoke	2023	Complete
Written IDDE Plan	Veolia/City's Sewer Operations Contractor	2023	Complete
Dry Weather Screening and Sampling	Veolia/City's Sewer Operations Contractor	2024	Complete
Wet Weather Sampling	Veolia/City's Sewer Operations Contractor	20 Outfalls per year	On-going
Catchment Investigations	Veolia/City's Sewer Operations Contractor	Begin by 2023 / Complete by 2027	On-going
IDDE Training	Veolia/City's Sewer Operations Contractor	Annually	On-going

#### 4.4 MCM 4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

#### 4.4.1 Objective

The 2016 MS4 permit states:

"The permittee must develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The permittee must include disturbances less than one acre if part of a larger common plan."

#### 4.4.2 Permit Summary

Based on 2016 MS4 permit requirements, the City will develop and enforce a construction site storm runoff control program in conjunction with the ordinance to reduce pollutants in construction site runoff. The ordinance and program shall not be applicable for construction sites with a waiver from USEPA under provisions of 40 CFR§122.26(b)(15)(i).

The 2016 MS4 permit requires specific elements for site plan review, site inspections, and measurable goals. The 2016 MS4 permit specifies that the Permittee have the following elements be reviewed during the preconstruction site plan review:

- Planned BMPs during construction.
- Planned BMPs for post-construction conditions, and
- Evaluating the incorporation of LID site planning and design strategies.

The 2016 MS4 permit requires Site Inspections to include inspections of BMPs during construction and also after construction to ensure they are working as described. Additionally, the 2016 MS4 permit distinguishes MCM4 requirements as a separate and distinct program from the USEPA Construction General Permit (CGP) which was introduced in 2017. The City will follow the 2016 MS4 permit as a guideline in structuring an effective and efficient construction site storm runoff control program.

#### 4.4.3 Updated Program

The City will review existing ordinances (Article II. - Grading And Soil Erosion Control) and any other relevant legislation. As part of the Consent Decree requirements, the City is creating a plan to update the existing ordinances to reach compliance with the 2016 MS4 permit. In particular, the City will seek to update ordinance language pertaining, but not limited to, applicability requirements, proper waste management, BMP design standards and LID strategies. In addition to an ordinance review and update,

the City will review and update existing procedures for site plan review, site inspection, and enforcement.

City Staff are working with the Board of Public Works and City Solicitor's Office to review and incorporate some of the recommendations to various City Ordinance and Regulations pertaining to Construction Site Runoff Control made by the Pioneer Valley Planning Commission and the Regulatory Review Advisory Group in 2021.

#### 4.4.4 Measurable Goals

The measurable goals for this program are listed in Table 9.

Table 9: Implementation Program for MCM 4, Construction Site Stormwater Runoff Control

BMP#	BMP Category	Measurable Goal(s)	Responsible Dept or Parties	Status
4-1	Site inspection and enforcement of Erosion and Sedimentation Control (ESC) measures	Review existing written site inspection and enforcement procedures for sediment and erosion control measures and confirm they comply with Section 2.3.5. c. i through c. v of the 2016 MS4 permit.	DPW/City Engineer	On-going
4-2	Site Plan Review	Review stormwater regulations and confirm that construction stormwater runoff control ordinances meet requirements of 2016 MS4 permit Section 2.3.5.c.i. ii, iii, and v	DPW/City Engineer	On-going
4-3	Erosion and Sedimentation control	Review existing written site inspection and enforcement procedures for sediment and erosion control measures and confirm they comply with Section 2.3.5. through c. v of the 2016 MS4 permit.	DPW/City Engineer	On-going
4-4	Waste Control	Adopt requirements to control wastes including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes 2.3.5 c iv of 2016 MS4 permit	DPW/City Engineer	On-going
4-5	Track, inspect and document	Written site plan review, inspection and enforcement procedures include processes to track the number of site plan reviews, site inspections and enforcement actions.	DPW/City Engineer	On-going

## 4.5 MCM 5: POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

#### 4.5.1 Objective

The 2016 MS4 permit states:

"The permittee must develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre and discharge into the municipal system."

The Consent Decree (Term 19.b.ii.) states:

"The requirement for adoption/amendment of the permittee's ordinance or other regulatory mechanism shall include a requirement that new development and redevelopment stormwater management BMPs be optimized for nitrogen removal;"

#### 4.5.2 Permit Summary

The City will develop and make effective an ordinance that will address post construction runoff from new development and redevelopment projects. The City will require that new development and redevelopment stormwater management BMPs be optimized for nitrogen removal. The City will utilize ordinance requirements for MCM5 from the 2016 MS4 permit as a guideline, as the 2016 MS4 permit provides details with greater relevance. The 2016 MS4 permit requires the regulatory mechanism or ordinance to require sites to incorporate LID site planning and design strategies to the maximum extent possible (Appendix G).

Many studies indicate that prior planning and design for the minimization of pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management. Prior site planning is best accomplished through established municipal procedures/programs for project review during the proposal and permitting stages. Per the 2016 MS4 permit requirement, the City is required to develop, implement, and enforce a program to reduce pollutants in post-construction runoff to their MS4 from new development and redevelopment projects that result in land disturbance of greater than or equal to one acre. The 2016 MS4 permit requires the program to include procedures that will allow the City to require any applicant to ensure adequate long-term operation and maintenance of installed BMPs, and controls be put into place that will prevent or minimize water quality impacts. The City will utilize the 2016 MS4 permit MCM 5 requirements for

projects and require the submission of as-built drawings no later than two years after completion. The as-built drawings must depict structural and non-structural on-site controls. Ownership agreements and procedures for the long-term operation and maintenance of privately owned SW BMPS in the built system must also be submitted to the City upon completion.

#### 4.5.3 Updated Program

The City will review and propose changes to the existing City of Holyoke Code of Ordinances Chapter 38, site plan review checklists, Zoning Regulations, and other relevant material. Changes will incorporate requirements for development to meet the pollutant removal standards specified in the MassDEP Stormwater Standards with a special emphasis for Nitrogen removal optimization. Additionally, the ordinance and program procedures will be updated to require developers to submit as-built drawings and long-term maintenance procedures for completed redevelopment and new development stormwater management systems.

City Staff are working with the Board of Public Works and City Solicitor's Office to review and incorporate some of the recommendations to various City Ordinance and Regulations pertaining to Post-Construction Stormwater Management made by the Pioneer Valley Planning Commission and the Regulatory Review Advisory Group in 2021.

#### 4.5.4 Measurable Goals

The measurable goals for this program are listed in Table 10.

Table 10: Implementation Program for MCM 5, Post Construction Stormwater Management in New Development and Redevelopment

BMP#	BMP Category	Measurable Goal(s)	Responsible Department	Status
5-1	Review Written Stormwater runoff procedures, ordinances, and bylaws	<ul> <li>Review existing written procedures to comply with the MS4-2016 MS4 permit and modify as necessary to comply with Sections 2.3.6.a.i and 2.3.6.a.ii including provisions for the following:         <ul> <li>Use to the maximum extent possible, of Low Impact Development (LID) and site planning and design strategies.</li> <li>Design of treatment and infiltration practices that follow guidance in Vol 2 of the Massachusetts Stormwater Handbook, as amended, or other federally or state approved BMP design guidance.</li> <li>Stormwater management systems on new development sites designed to meet Massachusetts Stormwater Handbook Standards 1, 2, 3, 5, 5, 6, and 9 and require systems to be designed to retain the first inch of runoff from all impervious surfaces and/or remove 90% total suspended solids (TSS) and 60% of total phosphorous (TP) generated from all impervious surfaces.</li> </ul> </li> <li>Require redevelopment sites meet Massachusetts Stormwater Handbook Standards 1, 2, 3, 5 and 6 and improve existing conditions by retaining the first 0.8 inch of runoff from all impervious surfaces and/or removing 80% of TSS and 50% of TP generated from all impervious surfaces.</li> <li>Update ordinances and other regulatory mechanisms to require new development and redevelopment stormwater BMPs to be optimized for nitrogen removal.</li> </ul>	DPW/ City Engineer	On-going
5-2	As built Plans for On-site stormwater control	<ul> <li>Require the submission of as-built drawings no later than 2 years after completion of construction projects in accordance with requirements in 2.3.6.a.iii including:</li> <li>Long-term operation and maintenance (O&amp;M) of BMPs including mechanisms such as escrow accounts, maintenance contracts, annual certification that maintenance of stormwater controls has been performed.</li> <li>The City reports on measures to ensure long term maintenance of stormwater controls in its Annual Report</li> </ul>	DPW/City Engineer	On-going
5-3	Street Design and parking lot guidelines	<ul> <li>Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support LID options. If assessment indicates changes can be made it shall include recommendations and schedules to incorporate changes to policies, standards, and procedures.</li> </ul>	DPW, Planning Board, local transportation board	On-going

BMP#	BMP Category	Measurable Goal(s)	Responsible Department	Status
		A status report of the assessment including planned or completed changes to local regulations and guidelines shall be included in the Annual Report		
5-4	Green Infrastructure Design Opportunities Report	<ul> <li>Develop a report assessing existing local regulations to determine the feasibility of making, at a minimum, the following practices allowable when appropriate site conditions exist:         <ul> <li>Green roofs;</li> <li>Infiltration practices such as rain gardens, curb extensions, planter gardens, porous and pervious pavements and other designs to manage stormwater using landscaping and structures or augmented soils; and</li> <li>Water harvesting devices such as rain barrels and cisterns and the use of stormwater for non-potable uses</li> </ul> </li> <li>If above practices are not allowed in the MS4, the assessment shall determine what changes may be made to make them allowable.</li> <li>The City reports annually on its findings and progress towards making green infrastructure allowable.</li> </ul>	DPW	On-going
5-5	Inventory of Retrofit Property Opportunities	Identify a minimum of 5 permittee-owned properties that could be modified or retrofitted with BMPs designed to reduce the frequency, volume and pollutant loads including nitrogen loading of stormwater discharges due to impervious service area (IA).  Municipal properties with significant IA (parking lots, buildings, and maintenance yards) will be considered.  MS4 infrastructure to be considered includes existing street right-of-ways, outfalls and conventional stormwater conveyances (swales, detention bonds) that could readily be modified.  Other factors such as access for maintenance, subsurface geology and infrastructure (sewers and septic), opportunities for public use and education, current level of service, control of discharges to water quality limited waters (nitrogen), public swimming areas, etc. shall be considered.	DPW	On-going

#### 4.6 MCM 6: POLLUTION PREVENTION / GOOD HOUSEKEEPING

#### 4.6.1 Objective

The 2016 MS4 permit states the following:

"The permittee shall implement an operations and maintenance program for permittee-owned operations that has a goal of preventing or reducing pollutant runoff and protecting water quality from all permittee-owned operations."

The Consent Decree (Term 19.b.iii) states the following:

"The City shall establish procedures to properly manage grass cuttings and leaf litter on City property."

#### 4.6.2 Permit Summary

The 2016 MS4 permit requires that good housekeeping and pollution prevention programs be developed for the following municipal owned facilities (at a minimum):

- Rest areas along interstates
- Weigh stations
- Material storage yards
- New construction and land disturbance
- Roadway drainage system maintenance
- Storm water system maintenance

At transportation facilities in particular, programs must be developed with the goal of preventing or reducing pollutant runoff from the site and must include employee training. For all components of the good housekeeping program, a schedule for implementation needs to be developed that includes maintenance activities, inspections, and plans for long-term structural controls. Inspection procedures are likewise to be developed for all municipal properties requiring good housekeeping measures.

In addition to the requirements of the 2016 MS4 permit, the Consent Decree includes several additional requirements that fall under MCM 6:

- Increase the frequency of street sweeping for all municipal owned streets and parking lots (with the exception of rural uncurbed roads with no catch basins or high-speed limited access highways) to a minimum of two times per yar, once in the spring (following winter activities such as sanding) and at least once in the fall (Sep 1 Dec 1; following leaf fall)
- Establish procedures to properly manage grass cuttings and leaf litter on City property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces.

#### 4.6.3 Updated Program

A Good Housekeeping Manual incorporating written procedures for municipal activities, written inventory of all City owned facilities, and good housekeeping procedures for parks, open spaces, municipal buildings, vehicles, and equipment has been developed and included in (**Appendix F**). Additional good housekeeping procedures for catch basin cleaning, street sweeping, proper management of sweepings and cleanings, use of salt and sand for winter road maintenance, and structural controls for maintenance of stormwater BMPs is included. The manual will serve as the City's reference for all Good Housekeeping and Pollution Prevention activities that municipal employees perform and will include a proposed schedule for all required inspections and regular maintenance activities.

The City implements ongoing pollution prevention and good housekeeping practices that were required under the 2016 MS4 permit. For all existing and new procedures, written procedures and schedules for implementation are included in the Good Housekeeping manual. A summary of existing Good Housekeeping and Pollution Prevention programs is outlined in Table 11.

Additionally, for municipal owned facilities that pose a particularly high risk for stormwater pollution, Stormwater Pollution Prevention Plans (SWPPPs) have been developed that outline facility-specific procedures to avoid potential pollution of the MS4 system. While SWPPPs are not a requirement for the City of Holyoke under the Consent Decree, the 2016 MS4 permit requires the development of SWPPPs. The City has developed SWPPPs for applicable properties and will include:

- Pollution Prevention Team
- Description of facility and potential pollutant sources
- Identification of stormwater controls
- Pollution management practices:
  - Minimization and/or prevention of exposure
  - Good housekeeping
  - Preventative maintenance
  - Spill prevention and response
  - Erosion and sediment control
  - Management of runoff
  - Salt storage
  - Employee training
  - Maintenance of control measures

The City of Holyoke has completed SWPPPs for the DPW Garage, the Parks and Maintenance Building at Springdale, Fire Station 1, Fire Station 3, Fire Station 5, Fire Station 6, and the Upland Rd Maintenance Garage. As a result of implementing SWPPPs for these properties there were improvements in the management of runoff at the Parks and Maintenance Building at Springdale, and improvements to the spill response and prevention at Fire Station 1 and the Parks and Maintenance Building at Springdale. The City of Holyoke will continue it's quarterly inspection schedule and begin developing an annual training program. Additional facilities that need SWPPPs are under review.

#### 4.6.4 Measurable Goals

The measurable goals for this program are listed in Table 11.

Table 11: Implementation Program for MCM 6, Pollution Prevention / Good Housekeeping

BMP #	ВМР	Measurable Goals	Responsible Department/Parties	Status
6-1	O&M Procedure	<ul> <li>Create written O&amp;M procedures per 2.3.7.a.ii of the 2016 MS4 permit for parks and open spaces, buildings and facilities and equipment including:         <ul> <li>Proper use storage and disposal and reduction of pesticides, herbicides, and fertilizers</li> <li>Protective practices such as reduced mowing frequency, proper disposal of lawn clippings, leaf litter and pet waste.</li> <li>Prohibition of blowing organic waste material onto adjacent impervious areas (IA)</li> <li>BMPs for buildings and facilities for the use storage and disposal of petroleum products, employee training, dumpster management, parking lot sweeping.</li> <li>BMPs for indoor storage of vehicles with leaks, procedures and design of fueling areas, procedures to ensure vehicle wash waters do not enter MS4.</li> </ul> </li> <li>The required use of slow-release fertilizers on City owned property that currently uses fertilizers. O&amp;M procedures will be included in the SWMP.</li> </ul>	DPW and other City Departments	On-going
6-2	Street Sweeping Program	Conduct street sweeping of all municipal owned streets and parking lots at a minimum frequency of twice per year.	Veolia/City's Sewer Operations Contractor	On-going
6-3	Inventory City-owned facilities	Inventory to include City owned property within the following categories: 1) Parks and Open space; 2) Buildings and facilities where pollutants are exposed to stormwater runoff (schools, town offices, police and fire stations, municipal pools and parking garages; and 3) Vehicles and equipment. The Status of inventory is documented in Annual Report	DPW and other City Departments	On-going

BMP #	ВМР	Measurable Goals	Responsible Department/Parties	Status
6-4	Catch Basin Cleaning	Conduct ongoing catch basin cleaning to ensure no sump is more than 50% full during cleaning.	Veolia/City's Sewer Operations Contractor	On-going
6-5	Road Salt optimization	Establish practices for winter pavement maintenance including the use and storage of salt and sand, minimize the use of sodium chloride and other salts, and ensure that snow disposal activities do not result in disposal of snow, salt, and sand into receiving waters.	DPW	On-going
6-6	Inspection and Maintenance of Treatment Structures	<ul> <li>Establish and implement inspection and maintenance procedures and frequencies for stormwater treatment structures (water quality swales, retention/detention basins, infiltration structures, etc.) At a minimum, inspect all structures annually.</li> <li>Veolia maintains a record of all inspections, training and maintenance activities.</li> </ul>	DPW, Veolia/City's Sewer Operations Contractor	On-going
6-7	Stormwater Pollution Prevention Plan (SWPPP)	Identify and create an inventory of all maintenance garages, transfer stations, and other waste-handling facilities that drain to the MS4 system. Develop SWPPPs for all facilities.	DPW and other City Departments	On-going

#### 5 ADDITIONAL REQUIREMENTS

#### 5.1 GROUNDWATER RECHARGE AND INFILTRATION

The MS4 permit requires that:

"The permittee must evaluate physical conditions, site design, and best management practices to promote groundwater recharge and infiltration where feasible in the implementation of the control measures described above. During the implementation of the stormwater management program, the permittee must address recharge and infiltration for the minimum control measures, as well as any reasons for electing not to implement recharge and infiltration. Loss of annual recharge to ground water should be minimized through the use of infiltration measures to the maximum extent practicable."

#### Implementation Strategy:

While evaluating the suitability of infiltration practices, the City of Holyoke adheres to the following guidelines:

- A site must allow for complete drainage within 72 hours of a rainfall event.
- A site must provide for at least a two-foot separation between the bottom of any infiltration structure and the seasonal high groundwater table.
- The site must not contain contaminated soils or be comprised of fill material.
- Infiltration practices must not cause or contribute to ponding on the surface of the land.
- Infiltration practices must not cause or contribute to basement flooding of adjacent properties.

#### 5.2 DISCHARGES TO PUBLIC DRINKING WATER SUPPLIES

The MS4 permit requires that:

"MS4s which discharge to public drinking water sources and their protection areas (Class A and B surface waters used for drinking water and wellhead protection areas) should consider these waters a priority in implementation of the stormwater management program.

Discharges to public drinking water supply sources and their protection areas (Zones I, II, Wellhead Protection areas, Zones A, B, and C as defined in 310 CMR 22.00) should provide pretreatment and spill control capabilities to the extent feasible.

Direct discharges to Class A waters and Zone I wellhead protection areas (as defined in 310 CMR 22.02) should be avoided to the extent feasible."

### Implementation Strategy:

The Connecticut River is classified as a class B water with treated drinking water as a designated use. The City requires source control including spill prevention, spill response, and proper management of snow and deicing chemicals. Details of these practices are outlined in Section 5.6 (MCM 6: Pollution Prevention and Good Housekeeping) and is consistent with the Massachusetts Stormwater Management Standard 6.

#### 6 SEMIANNUAL EVALUATION

Under the Consent Decree, the City of Holyoke must submit compliance reports semiannually until otherwise notified in writing from the USEPA. Compliance reports are due by January 31 and July 31 of each year and will cover the six-month periods ending June 30 and December 31, respectively. Each compliance report will include:

- A description of activities undertaken during the reporting period directed at achieving compliance with the Consent Decree;
- 2. Identification of all plans, reports, and other deliverables required by the Consent Decree that have been completed and submitted during the Reporting Period;
- 3. A description of the expected activities to be taken during the next Reporting Period in order to achieve compliance with the Consent Decree.

In addition, the annual reporting requirement associated with the 2016 MS4 permit will remain a requirement and will not necessarily be covered by the semiannual evaluation which will focus on the requirements of the Consent Decree only.

#### 7 IMPAIRMENTS AND WATER QUALITY LIMITED WATERS

#### 7.1 CONSENT DECREE TERM 19 STORMWATER NITROGEN MINIMIZATION MEASURES

#### 7.1.1 Connecticut River Nitrogen Reduction

The Connecticut River is classified as impaired for Nitrogen on the applicable USEPA-approved Massachusetts CWA § 303(d) Integrated List of Waters and does not have an USEPA approved Total Maximum Daily Load for the segments of the Connecticut River that receive stormwater discharges from the City. To address nitrogen discharges additional requirements for public education and enhanced stormwater management in new development and redevelopment are required per the 2016 MS4 Permit and the Consent Decree, the City will follow the enhanced public education and outreach program as outlined in Table 12 below.

Table 12: Additional or Enhanced BMP (Public Education and Outreach)

ВМР	Responsible Department/Parties	Timeframe	Due
Distribute message encouraging proper use and disposal of grass clippings and slow-release fertilizers	DPW and Other City Departments	Spring – April/May	Annually
Distribute message encouraging the proper management of pet waste	DPW and Other City Departments	Summer – June/July	Annually
Distribute message encouraging the proper disposal of leaf litter	DPW and Other City Departments	Fall – August/September /October	Annually

For enhanced stormwater management in new development and redevelopment, the City will update ordinances or modify regulatory mechanisms to ensure that new development or redevelopment stormwater BMPs are optimized for Nitrogen removal (per Consent Decree Term 19.b.ii). For implementation of good housekeeping and pollution prevention BMPs, the City will use strategies to manage grass cuttings and leaf litter on City property, develop and implement procedures to manage yard litter (organic waste materials) from blowing onto impervious surfaces, and complete street cleanings after leaf fall in the fall (Sept 1 – Dec 1) and after winter sanding in the spring (per Consent Decree Term 19.b.iii).

Additionally, the City developed a Nitrogen Source Identification Report to identify catchments with high nitrogen loading and to identify potential retrofit opportunities for the installation of structural BMPs

(per Consent Decree Term 19.c.i) and it was submitted to USEPA on January 31, 2024 (per Consent Decree Term 19.c.ii). The report will include an analysis of the total MS4 area draining to the water quality limited receiving water segments or their tributaries, incorporating updated mapping of the MS4 and catchment delineations. It will also present the screening and monitoring results focused on the identified receiving water segment(s). Additionally, the report assess the impervious area and directly connected impervious area (DCIA) within the target catchment with a goal to identify, delineate, and prioritize potential catchments with high nitrogen loading. Finally, the report highlights potential retrofit opportunities or possibilities for installing structural best management practices (BMPs) during redevelopment, which may involve the removal of impervious areas.

The City evaluated City-owned properties identified in the Nitrogen Source Identification Report that could potentially be modified or retrofitted with BMPs designed to reduce the frequency, volume, and pollutant loads of stormwater discharges to and from its MS4 by December 31, 2023. The evaluation included: (a) the next planned infrastructure, resurfacing or redevelopment activity planned for the property (if applicable) or planned retrofit date; (b) the estimated cost of redevelopment or retrofit BMPs; and (3) the engineering and regulatory feasibility of redevelopment or retrofit BMPs. The City prepared a list of planned structural BMPs and an implementation plan and schedule that was submitted on January 31, 2024, as a part of the Compliance Report (per Consent Decree Term 19.d.ii). The City installed one structural BMP as a demonstration project within the drainage area of the water quality limited water or its tributaries by December 31, 2024 (per Consent Decree Term 32.d.ii). The demonstration project was installed in December 2024 targeting a catchment with high Nitrogen load potential within the MS4 area at the Maurice Donahue Elementary School. As per Term 32.d.ii, the City will install the remainder of the structural BMPs in accordance with the plan and schedule provided in the January 31, 2024, Compliance Report.

The City will document details of any structural BMP (BMP type, total area treated by the BMP, the design storage volume of the BMP) and estimate the Nitrogen removal by the BMP, and this will be reported in each annual Compliance Report.

#### 7.2 BACTERIAL IMPAIRMENTS

Due to the bacterial impairments in the Connecticut River, Log Pond Cove, and Pequot Pond (E. Coli), the City will distribute educational materials highlighting pet waste as a source of bacteria and pathogen impairments to dog owners at the time of issuance or renewal of their dog license. Owners of septic systems will be provided information about proper septic system maintenance in any catchment that discharges to a waterbody impaired for bacteria. Annual messages will be disseminated during summer

encouraging proper management of pet waste. The City will designate any waterbody impaired with bacteria as problem or high priority in the IDDE Plan.

#### 8 REFERENCES

Final Massachusetts Integrated List of Waters for the Clean Water Act 2018/2020 Reporting Cycle, Approved February 2, 2022.

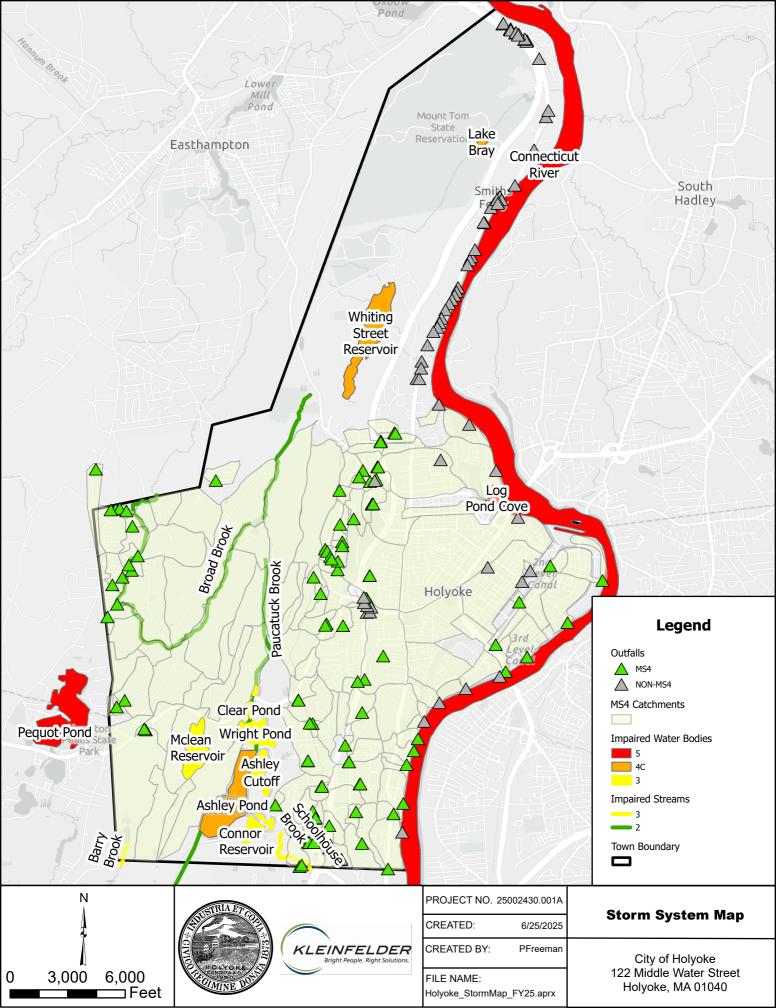
General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts. United States Environmental Protection Agency issued April 4, 2016.

General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts. United States Environmental Protection Agency issued May 1, 2003.

Massachusetts Stormwater Handbook

United States and Massachusetts v. City of Holyoke Consent Decree

# APPENDIX A STORMWATER SYSTEM MAP



## **APPENDIX B**

#### NOI

# Notice of Intent (NOI) for coverage under Small MS4 General Permit Page 1 of 19

# Part I: General Conditions

Gener	al Informati	on									
Name o	of Municipality o	or Organization: City of	Holyoke					State:	MA		
EPA NP	PA NPDES Permit Number (if applicable): MAR041011										
Prima	Primary MS4 Program Manager Contact Information										
Name:	Robert Peirent	t	Ti	itle:	City Engir	neer					
Street /	Address Line 1:	63 Canal Street									
Street	Address Line 2:										
City:	Holyoke				State:	МА	Zip Code:	01040			
Email:	peirentr@holy	oke.org	P	hone N	lumber: (	413) 322-5605					
Fax Nu	mber: (413) 32	22-5606									
Othei	· Information	า									
		ent Program (SWMP) Lo al location, if already comp		Engin	eers Office	:					
Eligib	ility Determ	ination									
Endan	gered Species A	ct (ESA) Determination	Complete?	Yes			Eligibility Crite check all that a		□ A □ B	⊠c	
Nation	al Historic Prese	ervation Act (NHPA) Det	ermination (	Comple	ete? Yes		Eligibility Crite check all that a		⊠ A □ B	c	
<b>V</b>	Check the box if	your municipality or or	ganization v	vas cov	vered und	er the 2003 MS4	I General Perm	it			
MS4	nfrastructur	<b>'e</b> (if covered under the 2003	3 permit)								
		f Outfall Map Complete art B.3.(a.) of 2003 permi				of 2003 requirer d date of comp			01/01/13		
Web a	ddress where M	S4 map is published:	Can attack								
or paper	copy of the outfall n	on the internet an electronic nap must be included with V for submission options)	See attach	<u></u>	<del>.</del>			·			
Regu	latory Autho	orities (if covered under th	e 2003 permit)	+							
	_	ection and Elimination part B.3.(b.) of 2003 permi		hority	Adopted	IVOC I	Effective Date Date of Adopt		111/4/	30/09	
		n and Sediment Contro art B.4.(a.) of 2003 permit		hority	Adopted	1000	Effective Date Date of Adopt		111/4/	30/05	
		itormwater Manageme part B.5.(a.) of 2003 permi	-	d?		IVoc I	Effective Date Date of Adopt		105/	17/10	

#### City of Holyoke

## Notice of Intent (NOI) for coverage under Small MS4 General Permit

#### Part II: Summary of Receiving Waters

Please list the waterbodies to which your MS4 discharges. For each waterbody, please report the number of outfalls discharging into it and, if applicable, the segment ID and any impairments.

Massachusetts list of impaired waters: Massachusetts 2014 List of Impaired Waters- http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf

Waterbody that receives flow from the MS4 and segment ID if applicable	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Perennial Stream to Whiting Street Res.	1										
Wetlands affiliated with Broad Brook (MA34-18)	2										
Day Brook	8										
Tannery Brook	12										
Schoolhouse Brook	4										
Green Brook	13										
Connecticut River (MA34-05)	15				$\boxtimes$				$\boxtimes$		PCBs

Click to lengthen table

# City of Holyoke Notice of Intent (NOI) for coverage under Small MS4 General Permit Page 3 of 19

### Part III: Stormwater Management Program Summary

Identify the Best Management Practices (BMPs) that will be employed to address each of the six Minimum Control Measures (MCMs). For municipalities/organizations whose MS4 discharges into a receiving water with an approved Total Maximum Daily Load (TMDL) and an applicable waste load allocation (WLA), identify any additional BMPs employed to specifically support the achievement of the WLA in the TMDL section at the end of part III.

For each MCM, list each existing or proposed BMP by category and provide a brief description, responsible parties/departments, measurable goals, and the year the BMP will be employed (public education and outreach BMPs also requires a target audience). Use the drop-down menus in each table or enter your own text to override the drop down menus.

#### MCM 1: Public Education and Outreach

BMP Media/Category (enter your own text to override the drop down menu)	BMP Description	Targeted Audience	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal	Beginning Year of BMP Imple- mentation
Web Page	Develop a new web page linked to the Conservation and Sustainability page that focuses on what residents can to to improve stormwater quality with links to sites such as Think Blue	Residents	Conservation Director	Publish the new web page by then end of 2019 and track the number of visits	2019
Brochures/Pamphlets	Develop and distribute educational materials targeted to vehicle sales and maintenance facilities and distribute as part of annual licensing process	Businesses, Institutions and Commercial Facilities	Planning & Economic Development and Licensing Department	Distribute to 100% of license renewals and tabulate annually once developed	2019

City of Holyoke					Page 4 of 19
Meeting	Invite developers that have applied for multiple stormwater permits from the City since regulations were developed in 2010 to a meeting that will focus on permitting and construction phase compliance requirements	Developers (construction)	Engineering	Prepare a list of invitees and compare to attendees at meeting. Target at least 50% attendance.	2020
	Meet with the Mayors				
Meeting	Industrial Development Advisory Committee to discuss need for ongoing stormwater management system O&M and what can be done to assist with permit compliance	Industrial Facilities	Office of Planning and Economic Development with support from En-	Meet twice over the permit cycle and target 50% attendance of invitees	2020
Displays/Posters/Kiosks	Install Dog Waste Cleanup Display at Community Field Dog Park	Residents	DPW Operations	Install display within 2 years and annually track quantity of dog waste bags distributed	2020
Individual Letters and Group Meeting	Improve compliance with annual stormwater management system O&M programs through education and enforcement	Businesses, Institutions and Commercial Facilities	Engineering	Develop a list of all stormwater permits issued by the City since 2010, correspond with 100% of permittees and hold a group meeting with a goal of 50% attendance.	2019

City of Holyoke					Page 5 of 1
Brochures/Pamphlets and Inspection Check	Develop a brochure and checklist that focuses on key construction phase stormwater issues and distribute during stormwater site inspections	Developers (construction)	Engineering	Distribute during all initial site inspections	2019
Meeting	Develop a list of all Significant Industrial Users of the wastewater treatment facility and meet individually onsite to discuss stormwater management issues and best practices	Industrial Facilities	Suez and Engineering	A minimum of 3 site meetings per year to different SIUs during the permit term	2020
				J	
	J  1				
				]	

# Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 2: Public Involvement and Participation

BMP Categorization	Brief BMP Description (enter your own text to override the drop down menu)	Responsible Department/Parties (enter your own text to override the drop down menu)	Additional Description/ Measurable Goal	Beginning Year of BMP Imple- mentation
Public Review	SWMP Review	Engineering	Allow annual review of stormwater management plan and posting of stormwater management plan on website	2019
Public Participation	Provide contact information for Stormwater Manager on website	Engineering	Allow public to comment on stormwater management plan annually	2019
Public Participation	Support Annual Source to Sea Cleanup	DPW Operations and Suez	Provide containers for waste collection and pickup waste at end of event	2018
Public Participation	Hold annual Household Hazardous Waste (HHW) events	DPW Operations and Casella	Track quantity of waste collected and hold at least annually	2018
Public Participation	Participate in CT River Stormwater Committee incl. Public Events	Engineering	Attend 75% of meetings	2018

City of Holyoke		F	Page 7 of 19
	[1]	1	

Page 8 of 19

# Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization  (enter your own text to override the drop down menu)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	<b>Measurable Goal</b> (all text can be overwritten)	Beginning Year of BMP Imple- mentation
SSO inventory	Review and update SSO inventory in accordance of permit conditions	SUEZ	Complete within 1 year of effective date of permit	2019
Storm sewer system map	Review and update map	SUEZ	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	2020
Written IDDE program	Review and update written IDDE program	SUEZ	Complete within 1 year of the effective date of permit and update as required	2019
Implement IDDE program	Implement updated catchment investigations according to program and permit conditions	SUEZ	Complete 10 years after effective date of permit	2019
Employee training	Continue to train employees on IDDE implementation	SUEZ	Train annually	2019
Conduct dry weather screening	Conduct in accordance with updated outfall screening procedure and permit conditions	SUEZ	Complete 3 years after effective date of permit	2020
Conduct wet weather screening	Conduct in accordance with updated outfall screening procedure	SUEZ	Complete 10 years after effective date of permit	2020

City of Holyoke		 Page 9 of 19

## City of Holyoke Page 10 of 19

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 4: Construction Site Stormwater Runoff Control

BMP Categorization  (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Imple- mentation
Site inspection and enforcement of Erosion and Sediment Control (ESC) measures	Review and update written procedures of site inspections and enforcement procedures	DPW/ CITY ENGINEER	Complete within 1 year of the effective date of permit	2019
Site plan review	Review and update written procedures of site plan review and begin implementation	DPW/ CITY ENGINEER	Complete within 1 year of the effective date of permit	2010
Erosion and Sediment Control	Review and update requirements for construction operators to implement a sediment and erosion control program	DPW / CITY ENGINEER	Complete within 1 year of the effective date of permit	2010
Waste Control	Review and update requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	DPW/ CITY ENGINEER	Complete within 1 year of the effective date of permit	2019

City of Holyoke		Pa	age 11 of 19

#### Page 12 of 19

#### City of Holyoke

# Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 5: Post-Construction Stormwater Management in New Development and Redevelopment

BMP Categorization  (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Imple- mentation
As-built plans for on-site stormwater control	Review and update procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	CITY ENGINEER	Require submission of as-built plans for completed projects	2010
Target properties to reduce impervious areas	Identify at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually	DPW	Complete 4 years after effective date of permit and report annually on retrofitted properties	2022
Allow green infrastructure	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	DPW	Complete 4 years after effective date of permit and implement recommendations of report	2022
Street design and parking lot guidelines	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options.	DPW	Complete 4 years after effective date of permit and implement recommendations of report	2022

Ensure any stormwater controls or management practices for new development and redevelopment meet the retention or treatment requirements of the permit and all applicable requirements of the Massachusetts Stormwater Handbook  Review and update regulatory mechanisms to meet permit requirements  DPW  Complete 2 years after effective date of permit requirements	2020
II	

#### City of Holyoke

Page 14 of 19

# Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP Categorization  (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Imple- mentation
O&M procedures	Create written O&M procedures including all requirements contained in 2.3.7.a.ii for parks and open spaces, buildings and facilities, and vehicles and equipment	DPW to manage, will involve a number of City Departments	Complete and implement 2 years after effective date of permit	
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Create inventory	DPW to manage, will involve a number of City Departments	Complete 2 years after effective date of permit and implement annually	2020
Infrastructure O&M	Establish and implement program for repair and rehabilitation of MS4 infrastructure	DPW	Complete 2 years after effective date of permit	2020
Stormwater Pollution Prevention Plan (SWPPP)	Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities	DPW to manage, will involve a number of City Departments	Complete and implement 2 years after effective date of permit	2020
Catch basin cleaning	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	SUEZ	Inventory catch basins depths to established schedule and report number of catch basins cleaned and volume of material moved annually	2020
Street sweeping program	Sweep all streets and permitee-owned parking lots in accordance with permit conditions	SUEZ	Sweep all streets and permitee-owned parking lots once per year in the spring	2020
Road salt use optimization program	Establish and implement a program to minimize the use of road salt	DPW	Implement salt use optimization during deicing season	2021

City of Holyoke

Inspections and maintenance of stormwater treatment structures

Inspection and maintenance of stormwater treatment structures

Inspection and maintenance procedures and frequencies

Inspection and maintenance procedures and frequencies

Inspection and inspect and maintenance structures at least annually least annually

### City of Holyoke Page 16 of 19

# Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Total Maximum Daily Load (TMDL) Requirements

Use the drop-down menus to select the applicable TMDL, action description to meet the TMDL requirements, and the responsible department/parties. If no options are applicable, or more than one, **enter your own text to override drop-down menus.** 

Applicable TMDL	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)	
Long Island Sound TMDL (Nitrogen)	Adhere to requirements in part B.I of Appendix F	DPW and SUEZ	
		·	

#### City of Holyoke

Page 17 of 19

#### Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Requirements Related to Water Quality Limited Waters

Use the drop-down menus to select the pollutant causing the water quality limitation and enter the waterbody ID(s) experiencing excursions above water quality standards for that pollutant. In addition, if you are subject to additional requirements due to a downstream nutrient impairment (see Part 2.2.2 of the permit) select the pollutant of concern and indicate applicable waterbody IDs or write "all waterbodies" if applicable. Choose the action description from the dropdown menu and indicate the responsible party. If no options are applicable, or more than one, enter your own text to override drop-down menus.

Waterbody ID(s)	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)
Connecticut River (MA 35-05)	Adhere to requirements in part I of Appendix H	Department of Public Works
Connecticut River (MA 35-05)	Adhere to requirements in part III of Appendix H	
Connecticut River (MA 35-05)	Adhere to requirements in part V of Appendix H	
	Connecticut River (MA 35-05)  Connecticut River (MA 35-05)	Connecticut River (MA 35-05)  Adhere to requirements in part I of Appendix H  Connecticut River (MA 35-05)  Adhere to requirements in part III of Appendix H

# Notice of Intent (NOI) for coverage under Small MS4 General Permit

### Part IV: Notes and additional information

Use the space below to indicate the part(s) of 2.2.1 and 2.2.2 that you have identified as not applicable to your MS4 because you do not discharge to the impaired water body or a tributary to an impaired water body due to nitrogen or phosphorus. Provide all supporting documentation below or attach additional documents if necessary. Also, provide any additional information about your MS4 program below.

Click to add text	
Click to add text	

# Notice of Intent (NOI) for coverage under Small MS4 General Permit

Page 19 of 19

#### Part V: Certification

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

Name:	Alex B Morse	Title:	Mayor
	To be signed according to Appendix B, Subparagraph B.11, Standard Conditions		09-27-18

Note: When prompted during signing, save the document under a new file name

## **APPENDIX C**

## THE JOINT AUTHORIZATION LETTER FROM USEPA AND MASSDEP



### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 1 5 POST OFFICE SQUARE, SUITE 100 BOSTON, MA 02109-3912

#### **VIA EMAIL**

March 5, 2019

Alex B. Morse Mayor

And;

Robert Pierent City Engineer 63 Canal Street Holyoke, MA. 01040 peirentr@holyoke.org

Re: National Pollutant Discharge Elimination System Permit ID #: MAR041011, City of Holyoke

#### Dear Robert Pierent:

The 2016 NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (MS4 General Permit) is a jointly issued EPA-MassDEP permit. Your Notice of Intent (NOI) for coverage under this MS4 General Permit has been reviewed by EPA and appears to be complete. You are hereby granted authorization by EPA and MassDEP to discharge stormwater from your MS4 in accordance with the applicable terms and conditions of the MS4 General Permit, including all relevant and applicable Appendices. This authorization to discharge expires at midnight on **June 30, 2022.** 

For those permittees that certified Endangered Species Act eligibility under Criterion C in their NOI, this authorization letter also serves as EPA's concurrence with your determination that your discharges will have no effect on the listed species present in your action area, based on the information provided in your NOI.

As a reminder, your first annual report is due by **September 30, 2019** for the reporting period from May 1, 2018 through June 30, 2019.

Information about the permit and available resources can be found on our website: <a href="https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit">https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit</a>. Should you have any questions regarding this permit please contact Newton Tedder at <a href="tedder.newton@epa.gov">tedder.newton@epa.gov</a> or (617) 918-1038.

Sincerely,

Thelma Murphy, Chief

Stormwater and Construction Permits Section

Thera Murphy

Office of Ecosystem Protection

United States Environmental Protection Agency, Region 1

and;

Lealdon Langley, Director

Wetlands and Wastewater Program

Bureau of Water Resources

Massachusetts Department of Environmental Protection

### **APPENDIX D**

### **IDDE PLAN**



# ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM SUPPLEMENTAL UDPATE

CITY OF HOLYOKE, MASSACHUSETTS
JUNE 2025



### A Report Prepared for:

Ms. Mary L. Monahan Interim Public Works Director City of Holyoke, Massachusetts 63 North Canal Street Holyoke, Massachusetts 01040

### ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM SUPPLEMENTAL UPDATE

Prepared by:

Portia Freeman Staff Engineer

Reviewed by:

Pamela Westgate

Client Account Manager

### **KLEINFELDER**

One Beacon Street, Suite 8100 Boston, MA 02108

Phone: 617.497.7800

June 2025

Kleinfelder Project No.: 25002430.001A



#### **TABLE OF CONTENTS**

**PAGE SECTION** DEFINITIONS ......III ACRONYMS......V 1 INTRODUCTION ......1 2 PERMIT YEAR 7 PROGRESS SUMMARY......2 2.1 2.2 2.3 2.4 2.5 2.6 ILLICIT DISCHARGE DETECTION......4 2.7 2.8 3 **TABLES** Table 2-2: Summary of Catchment Bacteria Results .......4 Table 2-3: Sanitary Sewer Overflow (SSO) Inventory .......7 **APPENDICES** Stormwater System Map Α В Reprioritized Outfall Inventory C Field Investigation Records D Illicit Discharge Detection and Elimination (IDDE) Program Requirements Ε **IDDE Training Log** 



### **DEFINITIONS**

**Best Management Practice (BMP)**: An activity, procedure, restraint, or structural improvement that helps to reduce the quantity or improve the quality of stormwater runoff.

**Catch basin:** A chamber or well, usually built to the curb line of a street that allows surface water to discharge into a storm water drain.

Clean Water Act: The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) as hereafter amended.

**Discharge of Pollutants**: The addition of any pollutant or combination of pollutants into the municipal storm drain system or into the waters of the United States or Commonwealth from any source.

**Groundwater**: Water beneath the surface of the ground including water in soil and bedrock beneath water bodies.

**Illicit Connection**: A surface or subsurface drain or conveyance, which allows an illicit discharge into the municipal storm drain system, including without limitation sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved before the effective date of bylaws enacted to prohibit such discharges.

**Illicit Discharge**: Direct or indirect discharge to the municipal storm drain system that is not composed entirely of stormwater, except as exempted by the EPA's Phase II regulations.

**Interconnection:** The point (excluding sheet flow over impervious surfaces) where the permittee's MS4 discharges to another MS4 or other storm sewer system, through which the discharge is conveyed to waters of the United States or to another storm sewer system and eventually to a water of the United States.

**Manhole:** Sewer system structure typically made from brick, concrete block, or monolithic concrete sections. Manholes have solid covers that do not accept runoff like a catch basin. Manholes within a storm sewer system are installed typically at bends in pipe runs, every 300 feet to 400 feet within a storm sewer pipe run, intersections of two or more pipe runs, and at the ends of pipe runs. Manholes allow for the cleaning and inspection of storm sewer systems. Manholes are typically 'fed' stormwater by catch basins and upstream storm sewer pipes.

**Junction Manhole:** Per the MS4 Permit, a junction manhole is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both, are not considered junction manholes.

**Municipal Separate Storm Sewer System (MS4)**: The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned by the City of Holyoke.



**National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit**: A permit issued by United States Environmental Protection Agency or jointly with the Commonwealth of Massachusetts that authorizes the discharge of pollutants to waters of the United States.

**Non-Stormwater Discharge**: Discharge to the municipal storm drain system not composed entirely of stormwater.

Outfall: A point source where a municipal separate storm sewer discharges to waters of the United States.

**Pollutant**: Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter whether originating at a point or nonpoint source, that is or may be introduced into any sewage treatment works or waters of the Commonwealth. Pollutants shall include without limitation:

- (1) paints, varnishes, and solvents,
- (2) oil and other automotive fluids,
- (3) non-hazardous liquid and solid wastes and yard wastes,
- (4) refuse, rubbish, garbage, litter, or other discarded or abandoned objects, accumulations and floatables,
- (5) pesticides, herbicides, and fertilizers,
- (6) hazardous materials and wastes; sewage, fecal coliform and pathogens,
- (7) dissolved and particulate metals,
- (8) animal wastes,
- (9) rock; sand; salt, soils,
- (10) construction wastes and residues,
- (11) and noxious or offensive matter of any kind.

**Stormwater**: Runoff from precipitation or snow melt.

**Wastewater**: Any sanitary waste, sludge, or septic tank or cesspool overflow, and water that during manufacturing, cleaning or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct or waste product.

**Storm sewer**: A sewer that carries only surface runoff, street wash, and snow melt from the land. In a separate sewer system, storm sewers are separate from those that carry domestic and commercial wastewater (sanitary sewers).



### **ACRONYMS**

**BMP** – Best Management Practice

**CCTV** – Closed-Circuit Television

**USEPA** – United States Environmental Protection Agency

**GIS** – Geographic Information System

**GPS** – Global Positioning System

**IDDE** – Illicit Discharge Detection and Elimination

MassDEP – Massachusetts Department of Environmental Protection

MassDOT - Massachusetts Department of Transportation

MS4 – Municipal Separate Storm Sewer System

**NOI** – Notice of Intent

NPDES - National Pollutant Discharge Elimination System

**SWMP** – Storm Water Management Plan



## ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM SUPPLEMENTAL UPDATE CITY OF HOLYOKE, MASSACHUSETTS

#### 1 INTRODUCTION

The City of Holyoke, hereafter referred to as "the City" or "Holyoke," developed and implemented a robust IDDE program to address the requirements of the US EPA and MassDEP NPDES MS4 Permit, effective July 1<sup>st</sup>, 2018, hereinafter referred to as the "2016 MS4 Permit" or "MS4 Permit". The City of Holyoke negotiated a Consent Decree, hereinafter referred to as the "Consent Decree" or "CD," which was finalized in 2023 and defined the terms that the City shall take to reach compliance with the MS4 program.

The Permit contains the framework for the IDDE program, including an evaluation of the City's legal authority to remove illicit connections to the stormwater sewer system, two (2) phases of stormwater system mapping, continual outfall classification, procedures for screening and sampling outfalls, and methods for determining and eliminating illicit connections. The current stormwater system map is included in Appendix A, the Reprioritized Outfall Inventory is included in Appendix B, and the field investigation records are included in Appendix C.

As of Permit Year 7 (July 1, 2024 – June 30, 2025), Holyoke's IDDE reporting has been restructured. All background information, requirements, methodologies, and any other information necessary to comply with the MS4 Permit and the 2023 Consent Decree, are in the *Illicit Discharge Detection and Elimination* (*IDDE*) *Program Requirements* document included as Appendix D. All IDDE Program progress and updates will be summarized in this supplementary document, the IDDE Program Supplemental Update, which will be generated annually. This document will include all data from field investigations and results from sampling that occurred during Permit Year (PY 7).



#### 2 PERMIT YEAR 7 PROGRESS SUMMARY

#### 2.1 MAPPING UPDATES

Updates to the City's MS4 mapping in PY 7 consisted of the following:

- Added new drainage manholes
- Removed state and private outfalls (7 outfalls)
- Added new outfall locations (5 outfalls)
- Added new catch basins
- Updated CSO outfall labeling post sewer separation
- Updated catchment area delineations
- Corrected inaccuracies in asset attributes

Refer to Appendix A for an updated storm system map.

### 2.2 PRIORITIZATION UPDATES

There were five (5) new outfalls added to the map in PY 7. However, more information needs to be collected for these outfalls, so updates to the reprioritization will occur in PY 8. The reprioritized outfall inventory was updated in June 2024 of PY 6, but the five (5) new outfalls were added to the list and marked as "Not Yet Prioritized" in PY 7. The inventory is included in Appendix B. The number of MS4 outfalls in each of the priority categories is listed in Table 2-1.

**Table 2-1: Outfall Priority Categorization** 

Outfall Priority Category	Number of Outfalls
Problem	16
High	48
Low	32
Not Yet Prioritized	5
Total	101



### 2.3 DRY WEATHER SCREENING UPDATES

All of the dry weather outfall screenings that were required by the 2016 MS4 Permit were completed in PY 6 (2023-2024). However, five (5) new outfalls were added to the MS4 inventory in PY 7, so screening of those additional outfalls will occur in PY 8.

### 2.4 WET WEATHER SCREENING UPDATES

The City is required to screen all 103 outfalls during wet weather once every three (3) years per the CD. In PY 7 Veolia trained City staff and completed 41 wet weather outfall screenings. All outfalls that were screened were tested for E. coli, ammonia, chlorine, surfactants, salinity, and conductivity. While all samples contained E. coli, only 28 of them tested above the EPA threshold<sup>1</sup>. The City will further investigate the catchments connected to the 28 outfalls that yielded high bacteria results. Field investigation records are included in Appendix C.

#### 2.5 CATCHMENT INVESTIGATION UPDATES

Field staff attempted 11 catchment investigations from the prioritized outfall list. Nine (9) of the outfalls had flow, while two did not. The catchments associated with the outfalls that did not have flow (CA035-A and CA038) were not further investigated.

Five (5) of the catchment areas that were investigated drain to outfalls categorized as Problem outfalls (CA086, CA068, CA071, CA073, and CA143). The flow found in three (3) of the catchments (CA086, CA068, and CA071) tested above the EPA threshold for E. coli<sup>1</sup>. Refer to Table 2-2 for a summary of E. coli results of these three (3) outfalls. The City plans to further investigate these catchments to confirm the source of contamination. Field investigation records are included in Appendix C, and a record of IDDE training attendees from Veolia and the City is included in Appendix E.

When E. coli is above 410 MPN/100 ml, this indicates that a catchment has a potential illicit discharge.

25002430.001A Page 3 of 10

www.kleinfelder.com

June 2025



**Table 2-2: Summary of Catchment Bacteria Results** 

Outfall ID	Structure ID	E. coli (MPN/100 ml)
CA086	DMH-086-0100	>410
CA068	DMH-068-0004	>410
CA071	DMH-071-0017	629

### 2.6 ILLICIT DISCHARGE DETECTION

On May 22, 2025, dye testing was conducted at a potential illicit discharge at Conklin Furniture at 75 Appleton Street. A first-floor sink in the southwest corner of the property was confirmed to discharge directly into a separated manhole (MH# P17-DMH-7802) intended for stormwater runoff. It was also suspected that a bathroom in the same location tied directly into the 8-inch pipe that feeds the same separated manhole. At the time of testing, it was also raining. When the separated discharge manhole was inspected, a constant flow could be seen indicating that the roof leaders may also be connected. Pictures from the investigation are included below.

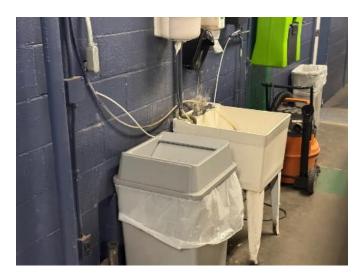


Figure 2-1: Dye Test Source at Sink





Figure 2-2: Dye Test Discharge in Storm Drain

Building plans, provided by the Facility Manager, were reviewed, however, no other internal plumbing records were included. The City has not been able to confirm that the identified location is the only one tied to the same discharge point. The City has taken the necessary steps to remove the illicit connection, which includes notifying the owner of the City's MS4 ordinance, the need to remove the illicit connection, and the timeline for which to do so. The facility will be responsible for identifying any other illicit connections tied into the 8-inch pipe and separated stormwater manhole prior to removing.

Another potential illicit discharge was discovered back in April of 2024 when Outfall ID CA143 was tested during Dry Weather Screenings due to observing a very small flow. The Outfall that was tested is located between Mowry Avenue and Nichols Drive. Of all the required parameters tested, the only test results above the mandated threshold were for E. Coli. A Catchment Investigation then occurred, and flow was followed upstream through approximately six (6) properties along both Fenton Street and Homestead Avenue (DMH-028-001). However, further upstream, flow was absent and all other structures were dry. This Catchment was also visited in May of 2025. Flow was found at the outfall and tested again for all parameters; however, no parameters that were tested were found to be above the mandated threshold, including E. Coli. However, shortly after, this same Outfall was also tested during Wet Weather Screenings and E. Coli did test above the mandated threshold.

Records review revealed that there is no sewer pipe or potential inputs of sewer near this Catchment.

After discussion between the City and Veolia, it was determined that positive E. Coli hits are most likely

25002430.001A Page 5 of 10 June 2025



due to runoff infiltrating into the catchment and sources may be a combination of pet waste and other decomposing organics. As such, the City is preparing to send out mailers directly to the approximate six (6) properties in regards to picking up pet waste. While the City does provide these same materials to pet owners when attaining licenses, the follow up mailers will serve as reinforcement to the specific households. As such, this potential illicit discharge is no longer considered a potential illicit and no further action is required.

### 2.7 SANITARY SEWER OVERFLOW (SSO) UPDATES

The inventory in Table 2-3 will be updated when new SSOs are observed and reported in the last five (5) years. The SSO inventory is included in the Annual Report, including the status of mitigation and corrective measures to address each identified SSO.



Table 2-3: Sanitary Sewer Overflow (SSO) Inventory

SSO Location <sup>1</sup>	Discharge Statement <sup>2</sup>	Date <sup>3</sup>	Duration <sup>3</sup> (hours)	Estimated Volume <sup>4</sup> (Gallons)	Description <sup>5</sup>	Mitigation Completed <sup>6</sup>
1 Berkshire St.	CT. River	5/17/2025	1	500-1,000	WWTP Influent Pumps failed after an electrical issue, causing a backup from a manhole and into a catch basin.	The affected area was jet cleaned and swept up.
145 Westfield Rd. and Woodland St.	No release to surface water	4/6/2024	1	1000	Sewer system blockage	Jetted main and removed blockage, vac cleaned the affected area.
105 Old Easthampton Rd.	No release to surface water	10/25/2023	1.25	25-50	Sewer system blockage	Jetted main and removed blockage, vac cleaned the affected area.
58 Canal St.	No release to surface water	11/9/2023	1.5	<100	Sewer System Blockage	Jetted main and removed blockage, vac cleaned the affected area.
Highland Park Pump Station	CT. River	3/17/2023	3.25	600	Force main failure	Setup bypass and shut station down. Replaced failed section of main.
50 Holy Family Rd.	Tannery Brook	12/08/2022	1.25	1,500	Grease & debris	Removed blockage. Jet cleaned sewer main.
Yale St.	Ground	8/23/2022	Unknown	300-500	Unbolted manhole	Replaced missing bolts on manhole
Whiting Reservoir	CT. River	6/07/2022	3.25	900	Grease & debris	Removed blockage. Jet cleaned sewer main.
63 Canal St.	CT. River	4/26/2022	0.5	225	Grease & debris	Removed blockage. Jet cleaned sewer main.



- <sup>1</sup>Location (approximate street crossing/address and receiving water, if any)
- <sup>2</sup> A clear statement of whether the discharge entered a surface water directly or entered the MS4
- <sup>3</sup> Duration of each known SSO occurrence (i.e., beginning and end of any known discharge)
- <sup>4</sup> Estimated volume(s) of the occurrence
- <sup>5</sup> Description of the occurrence indicating known or suspected cause(s)
- <sup>6</sup> Mitigation and corrective measures completed and planned



#### 2.8 **NEXT STEPS**

Wet weather screenings of outfalls and investigations of the catchment areas associated with the outfalls and stormwater interconnections started in 2024 (PY 6). A preliminary schedule to complete these investigations within three years is shown in Table 2-4. This schedule extends through the end of the MS4 Permit in July of 2028. The table includes the status of each type of required investigation, including the proportion of the entire MS4 system that has been inspected.

Table 2-4: Fieldwork Timeline

Investigation Task	Required Number of Investigations	Status	Previously Completed Investigations	Permit Year 8 (2025- 2026)	Permit Year 9 (2026- 2027)	Permit Year 10 (2027- 2028)	Total Inspections Remaining
Outfall Screening	101	Complete	103*	5*	-	-	0
Wet Weather Outfall Screening	101	63%	64	37	35	35	-
Catchment Investigations	101	30%	30	25	25	21	71

<sup>\*</sup>The City screened all known outfalls by the end of PY 6, which includes outfalls that were removed from the MS4 inventory in PY 7. Five (5) outfalls were added to the MS4 inventory in PY 7, and they will need to be screened in PY 8.

Note that the wet weather screening must be completed once every three (3) years; thus, each year approximately 1/3 of the outfalls will be screened. While the schedule outlined in Table 2-4 is through 2028, which is the final year of the current MS4 Permit, the Permit is expected to be renewed and the sampling will continue.

In PY 8, the City will further investigate three (3) catchments that were found to have high bacteria during the catchment investigations. These are associated with Outfall CA086, Outfall CA068, and Outfall CA071. Additionally, the City will continue wet weather screenings of all outfalls. Holyoke will also continue catchment investigations on pace with the timeline established above.

After all of the categorized catchment investigations are completed, each outfall or interconnection will be reprioritized for screening once every five (5) years per the CD. Ongoing screening will consist of dry weather screening and sampling and wet weather screening and sampling of all outfalls.



### 3 REFERENCES

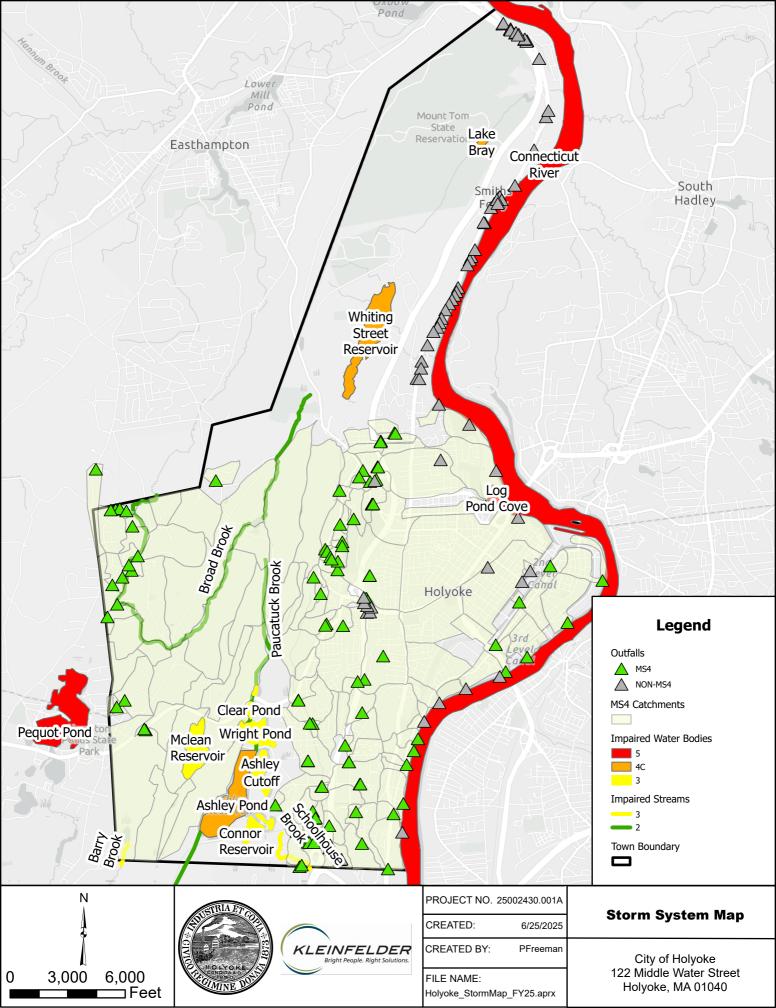
1. United States Environmental Protection Agency (EPA). (n.d.). General Permits for stormwater discharges from small municipal .—US EPA. Massachusetts Small MS4 General Permit. Retrieved January 16, 2023, from https://www3.epa.gov/region1/npdes/stormwater/ma/2016fpd/final-2016-ma-sms4-gp-mod.pdf



www.kleinfelder.com

### **APPENDIX A**

### STORMWATER SYSTEM MAP





### **APPENDIX B**

### REPRIORITIZED OUTFALL INVENTORY

### **Reprioritized Outfall Inventory**

Illicit Discharge Detection and Elimination (IDDE) Program
City of Holyoke, Massachusetts
Revised: June 2025

Outfall ID	Priority
CA045	Problem
CA046	Problem
CA047-A	Problem
CA047-B	Problem
CA049	Problem
CA052	Problem
CA053	Problem
CA064	Problem
CA065	Problem
CA066	Problem
CA068	Problem
CA071	Problem
CA086	Problem
CA132	Problem
CA142	Problem
CA143	Problem
CA003	High
CA004	High
CA005-A	High
CA005-B	High
CA005-C	High
CA005-E	High
CA006-A	High
CA006-B	High
CA006-C	High
CA006-D	High
CA007	High
CA009	High
CA010	High
CA011	High
CA012	High
CA013	High
CA014	High
CA015	High
CA016	High
CA017	High
CA018	High
CA023-B	High
CA023-C	High
CA027	High
CA035-A	High
CA042	High
CA048	High

### **Reprioritized Outfall Inventory**

Illicit Discharge Detection and Elimination (IDDE) Program
City of Holyoke, Massachusetts
Revised: June 2025

Outfall ID	Priority
CA050	High
CA051	High
CA054	High
CA055	High
CA056	High
CA057-B	High
CA060	High
CA067	High
CA070	High
CA072	High
CA078-A	High
CA078-B	High
CA084	High
CA085	High
CA087	High
CA133-A	High
CA133-B	High
CA134	High
CA135	High
CA144	High
CA147	High
CA002	Low
CA008	Low
CA019	Low
CA026	Low
CA034	Low
CA058	Low
CA059	Low
CA062	Low
CA088	Low
CA089	Low
CA091-A	Low
CA091-B	Low
CA094	Low
CA096-A	Low
CA096-B	Low
CA098	Low
CA099	Low
CA100	Low
CA101-A	Low
CA101-B	Low
CA102	Low
CA103	Low
C/ (103	LOW

### **Reprioritized Outfall Inventory**

Illicit Discharge Detection and Elimination (IDDE) Program
City of Holyoke, Massachusetts
Revised: June 2025

Outfall ID	Priority
CA105	Low
CA122	Low
CA128	Low
CA137	Low
CA138	Low
CA139	Low
CA140	Low
CA141	Low
CA145	Low
CA146	Low
CA035	Not Yet Prioritized
CA038	Not Yet Prioritized
CA064-B	Not Yet Prioritized
CA08-B	Not Yet Prioritized
CA158	Not Yet Prioritized



### **APPENDIX C**

### FIELD INVESTIGATION RECORDS

### FY25 Catchment Investigation Field Records

Illicit Discharge Detection and Elimination (IDDE) Program
City of Holyoke, Massachusetts

Outfall ID	Structure Type	Structure ID	Priority	Was there flow?	Was a sample collected?	Ammonia (mg/l)	Surfactants (mg/l)	Chlorine (mg/l)	Conductivity (microsiemens/s)	Salinity	E. coli Presence	E. coli (MPN/100 ml)	Date of Inspection
CA026	Outfall	CA026	Low	Yes	Yes	0	-	-	-	Yes	Yes	17	10/18/2024
CA068	Outfall	CA068	Problem	Yes	Yes	3	-	-	-	-	-	-	10/23/2024
CA068	Manhole	DMH-068_0003	Problem	Yes	No	-	-	-	-	-	-	-	10/23/2024
CA068	Manhole	DMH-068_0004	Problem	Yes	Yes	1	0.15	0	730	0.4	Yes	>410	10/23/2024
CA068	Manhole	DMH-068_0018	Problem	Yes	Yes	0	0.15	0	128.5	0.1	No	<null></null>	4/16/2025
CA085	Outfall	CA085	High	Yes	No	0	-	-	-	-	-	-	11/5/2024
CA085	Manhole	DMH-085_0025	High	No	No	-	-	-	-	-	-	-	4/16/2025
CA071	Outfall	CA071	Problem	Yes	No	0	-	-	-	-	-	-	11/13/2024
CA071	Manhole	DMH-071_0017	Problem	Yes	Yes	0	0.15	0	566	0.4	Yes	629	11/13/2024
CA035-A	Outfall	CA035-A	High	No	No	-	-	-	-	-	-	-	11/5/2024
CA084-A	Outfall	CA084-A	Unknown	Yes	Yes	0.25	0.15	0	592	0.4	Yes	>410	10/29/2024
CA086*	Outfall	CA086	Problem	Yes	Yes	6	0.5	0	631	0.5	-	-	10/30/2024
CA086	Manhole	DMH-086_0089	Problem	Yes	No	N/A							10/29/2024
CA086	Manhole	DMH-086_0045	Problem	Yes	No	N/A							10/29/2024
CA086	Manhole	DMH-086_0045	Problem	Yes	No	N/A							10/29/2024
CA086	Manhole	DMH-086_0100	Problem	Yes	Yes	3	1	0	694	0.4	Yes	>410	11/4/2024
CA086	Manhole	DMH-086_0101	Problem	Yes	No	N/A							11/1/2024
CA086	Manhole	DMH-086_0089	Problem	Yes	No	N/A							10/29/2024
CA086	Manhole	DMH-086_0044	Problem	Yes	No	N/A							10/29/2024
CA086	Manhole	DMH-086_0086	Problem	Yes	No	N/A							10/29/2024
CA086	Manhole	DMH-086_0092	Problem	Yes	No	N/A							10/29/2024
CA086	Manhole	DMH-086_0080	Problem	Yes	No	N/A							10/29/2024
CA038	Outfall	CA038	Unknown	No	No	-	-	-	-	-	-	-	11/7/2024
CA143	Outfall	CA143	Problem	Yes	Yes	0	0.1	0	405.2	0.2	-	-	11/7/2024
CA062	Outfall	CA062	Low	Yes	Yes	0	0.15	0	710	0.4	Yes	8	11/5/2024
CA073	Outfall	CA073	Problem	Yes	Yes	0	0	0	722	0.4	-	-	11/7/2024
CA073	Manhole	DMH-073_0013	Problem	Yes	Yes	0	0	0	732	0.4	-	-	11/7/2024
							T			1	•		
CA005	Manhole	DMH-005_0008		Yes	Yes	0	0.12	0	568	0.4	-	-	10/17/2024
CA132	Manhole	DMH-132_0001	Problem	Yes	Yes	0	0	0	40.2	0	No	0	10/18/2024
CA059	Manhole	DMH-059_0001	Low	Yes	Yes	0	0.12	0	96.5	0.6	Yes	60	10/22/2024

<sup>\*</sup>Cells highlighted in red indicate that the structure's flow tested above the EPA threshold for E. coli, which is greater than or equal to 410 MPN/100 ml.

### **FY25 Wet Weather Outfall Screening Records**

Illicit Discharge Detection and Elimination (IDDE) Program
City of Holyoke, Massachusetts

CA005-A   High   Yes   0   0   0.15   30   4/26/2025	Outfall ID	Priority	Was there flow?	Ammonia (mg/l)	Chlorine (mg/l)	Surfactants (mg/l)	E. coli* (MPN/100 ml)	Date of Inspection
CA005-C   High   Yes   0   0   0.15   60   4/26/2025   CA007   High   Yes   0   0   0   0.15   40   5/6/2025   CA009   High   Yes   0   0   0.15   3411   11/21/2024   CA010   High   Yes   0   0   0.15   3411   11/21/2024   CA011   High   Yes   0   0   0.15   3411   12/11/2024   CA012   High   Yes   0   0   0.15   3411   11/21/2024   CA013   High   Yes   0   0   0.15   3411   11/21/2024   CA013   High   Yes   0   0   0.75   3411   11/21/2024   CA016   High   Yes   0   0   0.15   3411   11/21/2024   CA016   High   Yes   0   0   0.15   3411   12/11/2024   CA018   High   Yes   0   0   0.15   3411   12/11/2024   CA018   High   Yes   0   0   0.15   3411   3/6/2025   CA035-A   High   Yes   0   0   0   0.15   3411   3/6/2025   CA035-A   High   Yes   0   0   0.15   3411   3/6/2025   CA036-A   High   Yes   0   0   0.15   3411   3/6/2025   CA036-A   High   Yes   0   0   0.15   3411   3/6/2025   CA036-A   High   Yes   0   0   0.15   3411   3/6/2025   CA038-A   High   Yes   0   0   0.15   366   4/26/2025   CA133-A   High   Yes   0   0   0.15   366   4/26/2025   CA133-A   High   Yes   0   0   0.15   366   4/26/2025   CA134-A   High   Yes   0   0   0.15   366   4/26/2025   CA038-A   High   Yes   0   0   0.15   366   4/26/2025   CA134-A   High   Yes   0   0   0.15   366   4/26/2025   CA134-A   High   Yes   0   0   0.15   366   4/26/2025   CA134-A   High   Yes   0	CA005-A	High	Yes	0	0	0.15	12	
CA007   High   Yes   0   0   0.15   40   5/6/2025	CA005-B	High	Yes	0	0	0.15	30	4/26/2025
CA009         High         Yes         0         0         0.15         >411         11/21/2024           CA010         High         Yes         0         0         0.15         >411         5/22/2025           CA011         High         Yes         0         0         0.15         >411         11/21/2024           CA012         High         Yes         0         0         0.15         >411         11/21/2024           CA013         High         Yes         0         0         0.75         >411         11/21/2024           CA016         High         Yes         0         0         0.15         >411         11/21/1024           CA017         High         Yes         0         0         0.15         >411         12/11/2024           CA017         High         Yes         0         0         0.15         >411         12/11/2024           CA018         High         Yes         0         0         0.15         >411         12/11/2024           CA035-A         High         Yes         0         0         0.15         >411         13/2/2025           CA0378-A         High         Yes         0 <td>CA005-C</td> <td>High</td> <td>Yes</td> <td>0</td> <td>0</td> <td>0.15</td> <td>60</td> <td>4/26/2025</td>	CA005-C	High	Yes	0	0	0.15	60	4/26/2025
CA010   High   Yes   0   0   0.15   >411   5/22/2025	CA007	High	Yes	0	0	0.15	40	5/6/2025
CA011         High         Yes         0         0         0.15         >411         12/11/2024           CA012         High         Yes         0         0         0.15         >4811         11/21/2024           CA013         High         Yes         0         0         0.75         >411         11/21/2024           CA016         High         Yes         0         0         0.15         >411         12/11/2024           CA017         High         Yes         0         0         0.15         >411         12/11/2024           CA018         High         Yes         0         0         0.15         >411         12/11/2024           CA018         High         Yes         0         0         0.15         >411         12/11/2024           CA038-A         High         Yes         0         0         0.15         >411         11/21/2024           CA037-A         High         Yes         0         0         0.15         >411         11/21/2024           CA078-A         High         Yes         0         0         0.15         100         3/6/2025           CA078-B         High         Yes         0	CA009	High	Yes	0	0	0.15	>411	11/21/2024
CA012         High         Yes         0         0         0.15         >411         11/21/2024           CA013         High         Yes         0         0         0.75         >411         11/21/2024           CA016         High         Yes         0         0         0.15         >411         12/11/2024           CA017         High         Yes         0         0         0.15         >411         12/11/2024           CA018         High         Yes         0         0         0.15         >411         12/11/2024           CA035-A         High         Yes         0         0         0.15         >411         11/21/2024           CA037-A         High         Yes         0         0         0.15         >411         5/22/2025           CA078-B         High         Yes         0         0         0.15         122         3/6/2025           CA078-A         High         Yes         0         0         0.15         122         3/6/2025           CA133-A         High         Yes         0         0         0.5         26         4/26/2025           CA134         High         Yes         0	CA010	High	Yes	0	0	0.15	>411	5/22/2025
CA013         High         Yes         0         0         0.75         >411         11/21/2024           CA016         High         Yes         0         0         0.15         >411         12/11/2024           CA017         High         Yes         0         0         0.15         >411         12/11/2024           CA018         High         Yes         0         0         0.15         >411         12/11/2024           CA035-A         High         Yes         0         0         0.15         >411         3/6/2025           CA037-A         High         Yes         0         0         0.15         122         3/6/2025           CA078-A         High         Yes         0         0         0.15         122         3/6/2025           CA078-B         High         Yes         0         0         0.15         100         3/6/2025           CA133-A         High         Yes         0         0         0.5         26         4/26/2025           CA134         High         Yes         0         0         0.15         25         4/26/2025           CA134-B         High         Yes         0	CA011	High	Yes	0	0	0.15	>411	12/11/2024
CA016         High         Yes         0         0         0.15         >411         12/11/2024           CA017         High         Yes         0         0         0.15         >411         12/11/2024           CA018         High         Yes         0         0         0         3411         12/11/2024           CA035-A         High         Yes         0         0         0.15         >411         3/6/2025           CA037-A         High         Yes         1         0         3         >411         11/21/2024           CA060         High         Yes         0         0         0.15         >411         5/22/2025           CA078-A         High         Yes         0         0         0.15         122         3/6/2025           CA133-A         High         Yes         0         0         0.55         26         4/26/2025           CA133-B         High         Yes         0         0         0.25         36         4/26/2025           CA134         High         Yes         0         0         0.25         20         4/26/2025           CA134-B         High         Yes         0         <	CA012	High	Yes	0	0	0.15	>411	11/21/2024
CA017         High         Yes         0         0         0.15         >411         12/11/2024           CA018         High         Yes         0         0         0         3         4411         5/6/2025           CA035-A         High         Yes         0         0         0.15         >411         3/6/2025           CA037         High         Yes         1         0         3         >411         11/2/2024           CA060         High         Yes         0         0         0.15         >411         5/22/2025           CA078-A         High         Yes         0         0         0.15         122         3/6/2025           CA078-B         High         Yes         0         0         0.15         120         3/6/2025           CA078-B         High         Yes         0         0         0.15         120         3/6/2025           CA133-A         High         Yes         0         0         0.25         36         4/26/2025           CA133-High         Yes         0         0         0.25         36         4/26/2025           CA134         High         Yes         0         0 </td <td>CA013</td> <td>High</td> <td>Yes</td> <td>0</td> <td>0</td> <td>0.75</td> <td>&gt;411</td> <td>11/21/2024</td>	CA013	High	Yes	0	0	0.75	>411	11/21/2024
CA018         High         Yes         0         0         0         3411         5/6/2025           CA035-A         High         Yes         0         0         0.15         >411         3/6/2025           CA037         High         Yes         1         0         3         >411         11/21/2024           CA060         High         Yes         0         0         0.15         >411         5/22/2025           CA078-A         High         Yes         0         0         0.15         122         3/6/2025           CA078-B         High         Yes         0         0         0.15         100         3/6/2025           CA133-B         High         Yes         0         0         0.5         26         4/26/2025           CA134         High         Yes         0         0         0.25         36         4/26/2025           CA134         High         Yes         0         0         0.15         25         4/26/2025           CA134         High         Yes         0         0         0.25         20         4/26/2025           CA144         High         Yes         0         0	CA016	High	Yes	0	0	0.15	>411	12/11/2024
CA035-A         High         Yes         0         0         0.15         >411         3/6/2025           CA037         High         Yes         1         0         3         >411         11/21/2024           CA060         High         Yes         0         0         0.15         >411         5/22/2025           CA078-B         High         Yes         0         0         0.15         1100         3/6/2025           CA133-A         High         Yes         0         0         0.5         26         4/26/2025           CA133-B         High         Yes         0         0         0.25         36         4/26/2025           CA134         High         Yes         0         0         0.25         36         4/26/2025           CA134         High         Yes         0         0         0.15         25         4/26/2025           CA135         High         Yes         0         0         0.15         25         20         4/26/2025           CA135         High         Yes         0         0         0.15         2411         5/6/2025           CA135         High         Yes         0 <td>CA017</td> <td>High</td> <td>Yes</td> <td>0</td> <td>0</td> <td>0.15</td> <td>&gt;411</td> <td>12/11/2024</td>	CA017	High	Yes	0	0	0.15	>411	12/11/2024
CA037         High         Yes         1         0         3         >411         11/21/2024           CA060         High         Yes         0         0         0.15         >411         5/22/2025           CA078-A         High         Yes         0         0         0.15         122         3/6/2025           CA078-B         High         Yes         0         0         0.15         100         3/6/2025           CA133-B         High         Yes         0         0         0.5         26         4/26/2025           CA133-B         High         Yes         0         0         0.15         25         4/26/2025           CA134         High         Yes         0         0         0.15         25         4/26/2025           CA134         High         Yes         0         0         0.15         25         20         4/26/2025           CA134         High         Yes         0         0         0.15         >411         5/6/2025           CA134         High         Yes         0         0         0.15         >411         15/6/2025           CA144         High         Yes         0 <td>CA018</td> <td>High</td> <td>Yes</td> <td>0</td> <td>0</td> <td>0</td> <td>&gt;411</td> <td>5/6/2025</td>	CA018	High	Yes	0	0	0	>411	5/6/2025
CA060         High         Yes         0         0         0.15         >411         5/22/2025           CA078-A         High         Yes         0         0         0.15         122         3/6/2025           CA078-B         High         Yes         0         0         0.15         100         3/6/2025           CA133-A         High         Yes         0         0         0.5         26         4/26/2025           CA133-B         High         Yes         0         0         0.25         36         4/26/2025           CA134         High         Yes         0         0         0.15         25         4/26/2025           CA135         High         Yes         0         0         0.25         20         4/26/2025           CA144         High         Yes         0         0         0.15         >411         5/6/2025           CA091         Low         Yes         0         0         0.15         84         5/6/2025           CA014         High         Yes         0         0         0.15         >411         5/6/2025           CA014         High         Yes         0         0	CA035-A	High	Yes	0	0	0.15	>411	3/6/2025
CA060         High         Yes         0         0         0.15         >411         5/22/2025           CA078-A         High         Yes         0         0         0.15         122         3/6/2025           CA078-B         High         Yes         0         0         0.15         100         3/6/2025           CA133-A         High         Yes         0         0         0.25         36         4/26/2025           CA134-B         High         Yes         0         0         0.15         25         4/26/2025           CA134-High         Yes         0         0         0.15         25         4/26/2025           CA134-High         Yes         0         0         0.15         25         4/26/2025           CA135-High         Yes         0         0         0.25         20         4/26/2025           CA134-High         Yes         0         0         0.15         >411         5/6/2025           CA144-High         Yes         0         0         0.15         >411         5/6/2025           CA019-Low         Yes         0         0         0.15         >411         12/11/2024 <td< td=""><td>CA037</td><td>High</td><td>Yes</td><td>1</td><td>0</td><td>3</td><td>&gt;411</td><td>11/21/2024</td></td<>	CA037	High	Yes	1	0	3	>411	11/21/2024
CA078-B         High         Yes         0         0         0.15         100         3/6/2025           CA133-A         High         Yes         0         0         0.5         26         4/26/2025           CA133-B         High         Yes         0         0         0.25         36         4/26/2025           CA134         High         Yes         0         0         0.15         25         4/26/2025           CA135         High         Yes         0         0         0.15         25         4/26/2025           CA135         High         Yes         0         0         0.15         25         4/26/2025           CA135         High         Yes         0         0         0.15         >411         5/6/2025           CA144         High         Yes         0         0         0.15         >411         5/6/2025           CA008         Low         Yes         0         0         0.15         84         5/6/2025           CA019         Low         Yes         0         0         0.15         >411         5/22/2025           CA024         Low         Yes         0         0	CA060		Yes	0	0	0.15	>411	5/22/2025
CA133-A         High         Yes         0         0         0.5         26         4/26/2025           CA133-B         High         Yes         0         0         0.25         36         4/26/2025           CA134         High         Yes         0         0         0.15         25         4/26/2025           CA135         High         Yes         0         0         0.25         20         4/26/2025           CA144         High         Yes         0         0         0.15         >411         5/6/2025           CA008         Low         Yes         0         0         0.15         84         5/6/2025           CA019         Low         Yes         0         0         0.15         84         5/6/2025           CA019         Low         Yes         0         0         0.15         >411         12/11/2024           CA034         Low         Yes         0         0         0.15         >411         5/22/2025           CA059         Low         Yes         0         0         0.15         191         12/11/2024           CA088         Low         Yes         0         0	CA078-A	High	Yes	0	0	0.15	122	3/6/2025
CA133-B         High         Yes         0         0         0.25         36         4/26/2025           CA134         High         Yes         0         0         0.15         25         4/26/2025           CA135         High         Yes         0         0         0.25         20         4/26/2025           CA144         High         Yes         0         0         0.15         >411         5/6/2025           CA008         Low         Yes         0         0         0.15         84         5/6/2025           CA019         Low         Yes         0         0         0.15         84         5/6/2025           CA034         Low         Yes         0         0         0.15         >411         5/22/2025           CA059         Low         Yes         0         0         0.15         >411         5/22/2025           CA088         Low         Yes         0         0         0.15         191         12/11/2024           CA091-B         Low         Yes         0         0         0.15         53         12/11/2024           CA094         Low         Yes         0         0	CA078-B	High	Yes	0	0	0.15	100	3/6/2025
CA133-B         High         Yes         0         0         0.25         36         4/26/2025           CA134         High         Yes         0         0         0.15         25         4/26/2025           CA135         High         Yes         0         0         0.25         20         4/26/2025           CA144         High         Yes         0         0         0.15         >411         5/6/2025           CA008         Low         Yes         0         0         0.15         84         5/6/2025           CA019         Low         Yes         0         0         0.15         >411         12/11/2024           CA034         Low         Yes         0         0         0.15         >411         5/22/2025           CA059         Low         Yes         0         0         0.15         >411         5/22/2025           CA088         Low         Yes         0         0         0.15         191         12/11/2024           CA091-B         Low         Yes         0         0         0.75         >411         12/11/2024           CA094         Low         Yes         0         0	CA133-A	High	Yes	0	0	0.5	26	4/26/2025
CA134         High         Yes         0         0         0.15         25         4/26/2025           CA135         High         Yes         0         0         0.25         20         4/26/2025           CA144         High         Yes         0         0         0.15         >411         5/6/2025           CA008         Low         Yes         0         0         0.15         84         5/6/2025           CA019         Low         Yes         0         0         0.15         84         5/6/2025           CA019         Low         Yes         0         0         0.15         >411         12/11/2024           CA034         Low         Yes         0         0         0.15         >411         5/22/2025           CA059         Low         Yes         0         0         0.15         >411         5/22/2025           CA088         Low         Yes         0         0         0.15         191         12/11/2024           CA091-B         Low         Yes         0         0         0.75         >411         11/21/2024           CA094         Low         Yes         0         0	CA133-B		Yes	0	0	0.25	36	4/26/2025
CA135         High         Yes         0         0         0.25         20         4/26/2025           CA144         High         Yes         0         0         0.15         >411         5/6/2025           CA008         Low         Yes         0         0         0.15         84         5/6/2025           CA019         Low         Yes         0         0         0         -411         12/11/2024           CA034         Low         Yes         0         0         0.15         >411         5/22/2025           CA059         Low         Yes         0         0         0.15         >411         5/22/2025           CA088         Low         Yes         0         0         0.15         191         12/11/2024           CA089         Low         Yes         0         0         0.15         53         12/11/2024           CA091-B         Low         Yes         0         0         0.75         >411         12/11/2024           CA094         Low         Yes         0         0         0.15         >411         11/21/2024           CA096-A         Low         Yes         0         0	CA134		Yes	0	0	0.15	25	4/26/2025
CA008         Low         Yes         0         0         0.15         84         5/6/2025           CA019         Low         Yes         0         0         0         -411         12/11/2024           CA034         Low         Yes         0         0         0.15         >411         5/22/2025           CA059         Low         Yes         0         0         0.15         >411         5/22/2025           CA088         Low         Yes         0         0         0.15         191         12/11/2024           CA089         Low         Yes         0         0         0.15         53         12/11/2024           CA091-B         Low         Yes         0         0         0.75         >411         12/11/2024           CA094         Low         Yes         0         0         0.5         >411         11/21/2024           CA096-A         Low         Yes         0         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.15         0 </td <td>CA135</td> <td>High</td> <td>Yes</td> <td>0</td> <td>0</td> <td>0.25</td> <td>20</td> <td>4/26/2025</td>	CA135	High	Yes	0	0	0.25	20	4/26/2025
CA019         Low         Yes         0         0         0         >411         12/11/2024           CA034         Low         Yes         0         0         0.15         >411         5/22/2025           CA059         Low         Yes         0         0         0.15         >411         5/22/2025           CA088         Low         Yes         0         0         0.15         191         12/11/2024           CA089         Low         Yes         0         0         0.15         53         12/11/2024           CA091-B         Low         Yes         0         0         0.75         >411         12/11/2024           CA094         Low         Yes         0         0         0.5         >411         11/21/2024           CA096-A         Low         Yes         0         0         0.15         >411         11/21/2024           CA099         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA122         Low         Yes         0	CA144	High	Yes	0	0	0.15	>411	5/6/2025
CA034         Low         Yes         0         0         0.15         >411         5/22/2025           CA059         Low         Yes         0         0         0.15         >411         5/22/2025           CA088         Low         Yes         0         0         0.15         191         12/11/2024           CA089         Low         Yes         0         0         0.15         53         12/11/2024           CA091-B         Low         Yes         0         0         0.75         >411         12/11/2024           CA094         Low         Yes         0         0         0.5         >411         11/21/2024           CA094         Low         Yes         0         0         0.15         >411         11/21/2024           CA096-A         Low         Yes         0         0         0.15         >411         11/21/2024           CA099         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.5         0         0.5         >411         11/21/2024           CA122         Low         Yes         0 <t< td=""><td>CA008</td><td>Low</td><td>Yes</td><td>0</td><td>0</td><td>0.15</td><td>84</td><td>5/6/2025</td></t<>	CA008	Low	Yes	0	0	0.15	84	5/6/2025
CA059         Low         Yes         0         0         0.15         >411         5/22/2025           CA088         Low         Yes         0         0         0.15         191         12/11/2024           CA089         Low         Yes         0         0         0.15         53         12/11/2024           CA091-B         Low         Yes         0         0         0.75         >411         12/11/2024           CA094         Low         Yes         0         0         0.5         >411         11/21/2024           CA096-A         Low         Yes         0         0         0.15         >411         11/21/2024           CA099         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.5         0         0.5         >411         11/21/2024           CA105         Low         Yes         0.15         0         0.15         >411         11/21/2024           CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0	CA019	Low	Yes	0	0	0	>411	12/11/2024
CA088         Low         Yes         0         0         0.15         191         12/11/2024           CA089         Low         Yes         0         0         0.15         53         12/11/2024           CA091-B         Low         Yes         0         0         0.75         >411         12/11/2024           CA094         Low         Yes         0         0         0.5         >411         11/21/2024           CA096-A         Low         Yes         0         0         0.15         >411         11/21/2024           CA099         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.5         0         0.5         >411         11/21/2024           CA105         Low         Yes         0.15         0         0.15         >411         11/21/2024           CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0	CA034	Low	Yes	0	0	0.15	>411	
CA089         Low         Yes         0         0         0.15         53         12/11/2024           CA091-B         Low         Yes         0         0         0.75         >411         12/11/2024           CA094         Low         Yes         0         0         0.5         >411         11/21/2024           CA096-A         Low         Yes         0         0         0.15         >411         11/21/2024           CA099         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.5         0         0.5         >411         11/21/2024           CA105         Low         Yes         0.15         0         0.15         >411         11/21/2024           CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0         0         0.15         >411         5/6/2025           CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0	CA059	Low	Yes	0	0	0.15	>411	5/22/2025
CA091-B         Low         Yes         0         0         0.75         >411         12/11/2024           CA094         Low         Yes         0         0         0.5         >411         11/21/2024           CA096-A         Low         Yes         0         0         0.15         >411         11/21/2024           CA099         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.5         0         0.5         >411         11/21/2024           CA105         Low         Yes         0.15         0         0.15         >411         11/21/2024           CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0         0         0.15         >411         5/6/2025           CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0         0         0.15         >411         11/21/2024           CA141         Low         Yes         0	CA088	Low	Yes	0	0	0.15	191	12/11/2024
CA094         Low         Yes         0         0         0.5         >411         11/21/2024           CA096-A         Low         Yes         0         0         0.15         >411         11/21/2024           CA099         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.5         0         0.5         >411         11/21/2024           CA105         Low         Yes         0.15         0         0.15         >411         11/21/2024           CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0         0         0.15         >411         5/6/2025           CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0         0         0.15         >411         11/21/2024           CA141         Low         Yes         0         0         0.15         >411         11/21/2024           CA146         Low         Yes         0	CA089	Low	Yes	0	0	0.15	53	12/11/2024
CA096-A         Low         Yes         0         0         0.15         >411         11/21/2024           CA099         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.5         0         0.5         >411         11/21/2024           CA105         Low         Yes         0.15         0         0.15         >411         11/21/2024           CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0         0         0.15         >411         5/6/2025           CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0         0         0.15         >411         11/21/2024           CA141         Low         Yes         0         0         0.15         >411         11/21/2024           CA146         Low         Yes         0         0         0.15         >411         5/22/2025	CA091-B	Low	Yes	0	0	0.75	>411	12/11/2024
CA099         Low         Yes         0.5         0         0.15         >411         11/21/2024           CA100         Low         Yes         0.5         0         0.5         >411         11/21/2024           CA105         Low         Yes         0.15         0         0.15         >411         11/21/2024           CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0         0         0.15         >411         5/6/2025           CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0         0         0.5         >411         11/21/2024           CA141         Low         Yes         0         0         0.15         >411         11/21/2024           CA146         Low         Yes         0         0         0.15         >411         5/22/2025	CA094	Low	Yes	0	0	0.5	>411	11/21/2024
CA100         Low         Yes         0.5         0         0.5         >411         11/21/2024           CA105         Low         Yes         0.15         0         0.15         >411         11/21/2024           CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0         0         0.15         >411         5/6/2025           CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0         0         0.5         >411         11/21/2024           CA141         Low         Yes         0         0         0.15         >411         5/22/2025           CA146         Low         Yes         0         0         0.15         >411         5/22/2025	CA096-A	Low	Yes	0	0	0.15	>411	11/21/2024
CA105         Low         Yes         0.15         0         0.15         >411         11/21/2024           CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0         0         0.15         >411         5/6/2025           CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0         0         0.5         >411         11/21/2024           CA141         Low         Yes         0         0         0.15         >411         5/22/2025           CA146         Low         Yes         0         0         0.15         >411         5/22/2025	CA099	Low	Yes	0.5	0	0.15	>411	11/21/2024
CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0         0         0.15         >411         5/6/2025           CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0         0         0.5         >411         11/21/2024           CA141         Low         Yes         0         0         0.15         >411         5/22/2025           CA146         Low         Yes         0         0         0.15         >411         5/22/2025	CA100	Low	Yes	0.5	0	0.5	>411	11/21/2024
CA122         Low         Yes         0         0         0.5         >411         11/21/2024           CA137         Low         Yes         0         0         0.15         >411         5/6/2025           CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0         0         0.5         >411         11/21/2024           CA141         Low         Yes         0         0         0.15         >411         5/22/2025           CA146         Low         Yes         0         0         0.15         >411         5/22/2025	CA105	Low	Yes	0.15	0	0.15	>411	11/21/2024
CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0         0         0.5         >411         11/21/2024           CA141         Low         Yes         0         0         0.15         >411         5/22/2025           CA146         Low         Yes         0         0         0.15         >411         5/22/2025	CA122	Low	Yes	0	0	0.5	>411	
CA139         Low         Yes         0         0         0.15         >411         11/21/2024           CA140         Low         Yes         0         0         0.5         >411         11/21/2024           CA141         Low         Yes         0         0         0.15         >411         5/22/2025           CA146         Low         Yes         0         0         0.15         >411         5/22/2025	CA137	Low	Yes	0	0	0.15	>411	
CA140         Low         Yes         0         0         0.5         >411         11/21/2024           CA141         Low         Yes         0         0         0.15         >411         5/22/2025           CA146         Low         Yes         0         0         0.15         >411         5/22/2025	CA139	Low	Yes	0	0	0.15	>411	
CA141         Low         Yes         0         0         0.15         >411         5/22/2025           CA146         Low         Yes         0         0         0.15         >411         5/22/2025	-							
CA146 Low Yes 0 0 0.15 >411 5/22/2025				0	0	0.15		, ,
CA038 Unknown Yes 0.5 0 0.5 >411 11/21/2024								

<sup>\*</sup>Cells highlighted in red indicate that the structure's flow tested above the EPA threshold for E. coli, which is greater than or equal to 410 MPN/100 ml.



### **APPENDIX D**

ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM REQUIREMENTS

### **APPENDIX E**

### THREATENED AND ENDANGERED SPECIES LIST AND THE PERMIT LETTER FROM USFWS



### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 1 5 POST OFFICE SQUARE, SUITE 100 BOSTON, MA 02109-3912

### **VIA EMAIL**

March 5, 2019

Alex B. Morse Mayor

And;

Robert Pierent City Engineer 63 Canal Street Holyoke, MA. 01040 peirentr@holyoke.org

Re: National Pollutant Discharge Elimination System Permit ID #: MAR041011, City of Holyoke

### Dear Robert Pierent:

The 2016 NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (MS4 General Permit) is a jointly issued EPA-MassDEP permit. Your Notice of Intent (NOI) for coverage under this MS4 General Permit has been reviewed by EPA and appears to be complete. You are hereby granted authorization by EPA and MassDEP to discharge stormwater from your MS4 in accordance with the applicable terms and conditions of the MS4 General Permit, including all relevant and applicable Appendices. This authorization to discharge expires at midnight on **June 30, 2022.** 

For those permittees that certified Endangered Species Act eligibility under Criterion C in their NOI, this authorization letter also serves as EPA's concurrence with your determination that your discharges will have no effect on the listed species present in your action area, based on the information provided in your NOI.

As a reminder, your first annual report is due by **September 30, 2019** for the reporting period from May 1, 2018 through June 30, 2019.

Information about the permit and available resources can be found on our website: <a href="https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit">https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit</a>. Should you have any questions regarding this permit please contact Newton Tedder at <a href="tedder.newton@epa.gov">tedder.newton@epa.gov</a> or (617) 918-1038.

Sincerely,

Thelma Murphy, Chief

Stormwater and Construction Permits Section

Thera Murphy

Office of Ecosystem Protection

United States Environmental Protection Agency, Region 1

and;

Lealdon Langley, Director

Wetlands and Wastewater Program

Bureau of Water Resources

Massachusetts Department of Environmental Protection

### **APPENDIX D**

# THREATENED AND ENDANGERED SPECIES LIST LETTER FROM NEW ENGLAND ECOLOGICAL SERVICES FIELD OFFICE





### United States Department of the Interior

### FISH AND WILDLIFE SERVICE

New England Ecological Services Field Office 70 Commercial Street, Suite 300 Concord, NH 03301-5094 Phone: (603) 223-2541 Fax: (603) 223-0104

http://www.fws.gov/newengland



In Reply Refer To: August 21, 2018

Consultation Code: 05E1NE00-2018-SLI-2837

Event Code: 05E1NE00-2018-E-06647 Project Name: holyoke town boundary map

Subject: List of threatened and endangered species that may occur in your proposed project

location, and/or may be affected by your proposed project

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle\_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

### Attachment(s):

Official Species List

### **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office 70 Commercial Street, Suite 300 Concord, NH 03301-5094 (603) 223-2541

### **Project Summary**

Consultation Code: 05E1NE00-2018-SLI-2837

Event Code: 05E1NE00-2018-E-06647

Project Name: holyoke town boundary map

Project Type: \*\* OTHER \*\*

Project Description: MS 4 Notice of Intent for Holyoke, MA

### Project Location:

Approximate location of the project can be viewed in Google Maps: <a href="https://www.google.com/maps/place/42.22441267461942N72.63930318362088W">https://www.google.com/maps/place/42.22441267461942N72.63930318362088W</a>



Counties: Hampden, MA | Hampshire, MA

## **Endangered Species Act Species**

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## **Mammals**

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/9045	

## **Flowering Plants**

NAME	STATUS

Small Whorled Pogonia *Isotria medeoloides* 

Threatened

No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1890">https://ecos.fws.gov/ecp/species/1890</a>

#### **Critical habitats**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

## **APPENDIX F**

## **GOOD HOUSEKEEPING MANUAL**



GOOD HOUSEKEEPING MANUAL: FULL VERSION A GUIDE TO GOOD HOUSEKEEPING BEST PRACTICES TO PREVENT STORMWATER POLLUTION CITY OF HOLYOKE, MASSACHUSETTS KLEINFELDER PROJECT NO. 20233959.001A

**MAY 2023** 





## A Report Prepared for:

## **CITY OF HOLYOKE, MASSACHUSETTS**

536 Dwight Street Holyoke, Massachusetts 01040

## **GOOD HOUSEKEEPING MANUAL (GHK MANUAL)**

## Prepared by:

Portia Freeman, Professional

## Reviewed by:

Peter Varga, Project Manager Adria Fichter, Senior Professional

## **KLEINFELDER**

1 Beacon St Ste 8100 Boston, Massachusetts 02108

May 2023

Kleinfelder Project No: 20233959.001A



## **TABLE OF CONTENTS**

<u>Sect</u>	<u>tion</u>	<u>Page</u>
1	INTRODUCTION	1
	1.1 CURRENT STORMWATER REGULATIONS	1
	1.2 HOW TO USE THIS MANUAL	2
	1.3 ANNUAL REPORTING	2
	1.4 DOCUMENT LIMITATIONS AND OTHER REGULATORY REQUIREMENTS	3
	1.5 MANUAL DISTRIBUTION & TRAINING LOG*	3
2	BEST MANAGEMENT PRACTICES (BMP) SHEETS	4
	BMP 1 – LAWN AND GROUNDS MAINTENANCE	4
	BMP 2 - STREET AND PARKING LOT SWEEPING	
	BMP 3 – ROAD SAND/SALT APPLICATION AND STORAGE	
	BMP 4 – SNOW STOCKPILING AND REMOVAL	
	BMP 5 - MATERIALS MANAGEMENT	
	BMP 6 - HAZARDOUS MATERIAL STORAGE	
	BMP 7 - VEHICLE FUELING, MAINTENANCE, AND STORAGE	
	BMP 8 - VEHICLE WASHING	
	BMP 9 – SPILL PREVENTION AND RESPONSE	
	BMP 10 - CATCH BASIN CLEANING	
	BMP 11 - PET WASTE, WATERFOWL, AND LITTER MANAGEMENT	
	BMP 12 – WASTE MANAGEMENT	
	BMP 13 – BUILDING OPERATIONS	
	BMP 14 – OIL/WATER SEPARATORS	
	BMP 15 - BIORETENTION	
	BMP 16 – STORMWATER, SANITARY MAINTENANCE & WATER LINE REPAIR	
APP	ENDIX A: FACILITIES INVENTORY	1
APP	ENDIX B: FACILITIES MAP FIGURE	3
APP	ENDIX C: VEHICLE AND EQUIPMENT INVENTORY	4
	ENDLY D. EACH ITY INSPECTION LOG	_



#### 1 INTRODUCTION

#### 1.1 CURRENT STORMWATER REGULATIONS

The 2023 Municipal Separate Storm Sewer System (MS4) permit, as well as the Final Consent Decree requires that the City of Holyoke address six (6) Minimum Control Measures (MCMs). These measures include the following:

- 1. Public Education and Outreach
- 2. Public Involvement and Participation
- 3. Illicit Discharge Detection and Elimination (IDDE) Program
- 4. Construction Site Stormwater Runoff Control
- 5. Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management)
- 6. Good Housekeeping and Pollution Prevention for Permittee Owned Operations

As required by Term 19.b.iii "Good Housekeeping and Pollution Prevention for City Owned Operations" in the 2023 MS4 Consent Decree, the City developed this Good Housekeeping Manual which includes an inventory of all City-owned parks and open spaces, buildings and facilities that may contribute to stormwater pollution, and vehicle and equipment usage and staging areas, as well as written operations and maintenance procedures for the municipal operations at the aforementioned properties. Beyond maintaining these properties, the City is also responsible for keeping all MS4 infrastructure in good working order. The City has developed a written program detailing operation and maintenance for that MS4 infrastructure which is included in this Good Housekeeping Manual.

The 2023 MS4 Consent Decree requires that the City focus specifically on landscaping and street sweeping in this manual. This includes requirements for the use of slow-release fertilizers on all City-owned property that currently uses fertilizer; City-wide procedures to properly manage grass cuttings and leaf litter, including prohibiting organic waste on impervious surfaces; and increased street sweeping frequency of all City-owned, paved streets and parking lots to a minimum of two times per year, once following winter activities, such as sanding, and once following leaf fall.



#### 1.2 HOW TO USE THIS MANUAL

The pollution prevention and good housekeeping controls outlined in this document and referred to as best management practices (BMPs), are standard operating procedures (SOPs) for City personnel and for use at all applicable City-owned facilities and drainage infrastructure within the MS4. These BMPs are intended to serve as guidance on good housekeeping practices as they relate to reducing pollutants in runoff from municipal operations.

Each of the BMP fact sheets provides a description of the practice, the pollution prevention approach, suggested practices, inspection procedures, and maintenance procedures. For those tasks that have a regulatory reporting component (e.g. volume of material removed from a catch basin), appropriate tracking log examples or inspection forms are included. These logs/forms will facilitate compilation of data required for National Pollutant Discharge Elimination System (NPDES) annual reporting.

The BMP fact sheets provide **Targeted facilities and operations**, which include public school properties, police and fire departments, parks and recreation spaces, City-owned buildings, and parking lots and garages, as well as municipal activities that take place throughout the City. Examples of these types of City-wide activities include roadway and drainage system maintenance. The potential pollutants associated with these targeted facilities and operations are identified below this list as **Targeted constituents** on each BMP fact sheet.

#### **Manual Updates**

This Manual is intended to be a 'living document' that is updated as necessary to meet the City's needs while striving to reduce pollution "to the maximum extent practicable" under the NPDES MS4 Permit. Under each BMP, a space for Notes / Specific Procedures has been included so that unique conditions, problem areas, protocol specifics, or changes can be documented by the City.

#### 1.3 ANNUAL REPORTING

This document, as updated, should be included in the Annual Reports provided to the Massachusetts Department of Environmental Protection (MassDEP) and the United States Environmental Protection Agency (US EPA). Note that specific BMPs (such as the catch basin cleaning and street sweeping BMPs) are required elements of the Permit and specific data pertinent to execution of these tasks must be reported in the Annual Report.



## 1.4 DOCUMENT LIMITATIONS AND OTHER REGULATORY REQUIREMENTS

It should be noted that this document outlines best practices and procedures but does not include all best management practices required for Fire Station #6, the DPW Barn, and the Upland Road Maintenance Garage which all require a written Stormwater Pollution Prevention Plan (SWPPP) under this Permit or under the Multi-Sector General Permit (MSGP), which has additional requirements not included in this document. Lastly, facilities adjacent to wetlands may have Wetlands Protection Act Orders of Conditions for certain maintenance activities in proximity to wetland resources.

#### 1.5 MANUAL DISTRIBUTION & TRAINING LOG\*

Facility Name	Date of Manual Receipt	Name of Staff Person Receiving Manual and Training	Notes

<sup>\*</sup> Training records should be included in Annual Report.



## 2 BEST MANAGEMENT PRACTICES (BMP) SHEETS

#### BMP 1 – LAWN AND GROUNDS MAINTENANCE

#### **DESCRIPTION**

Nutrient loads generated by suburban lawns as well as municipal properties can be significant, and recent research has shown that lawns produce more surface runoff than previously thought. Pesticide and fertilizer runoff can contribute pollutants that contaminate drinking water supplies and are toxic to both humans and aquatic organisms.

#### **POLLUTION PREVENTION APPROACH**

It is important to reduce pesticides, herbicides, fertilizers, and lawn debris from entering surface and ground water supplies by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater drainage system.

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system to the maximum extent practicable.

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

#### Landscaping Activities

- Chemicals (insecticide, herbicide, or fertilizer) should only be applied by properly trained, licensed, or certified individuals.
- Use mulch or other erosion control measures on exposed soils.
- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the stormwater drainage system.
- Avoid rinsing impervious surfaces with a hose after chemical application, especially if the area is near a drainage channel or surface waters.
- Plant drought-resistant vegetation when possible to reduce water usage.
- Use manual or mechanical weeding, biological controls, and Integrated Pest Management (IPM) strategies as outlined by Massachusetts Department of Agricultural Resources.
- Utilize natural compost or organic fertilizers when possible because they benefit soil health.

#### **TARGETED FACILITIES AND OPERATIONS**

- All City-Owned Facilities with lawns and grounds
- Street and Public Rights-of-Way

#### **TARGETED CONSTITUENTS**

- Sediment
- Nutrients
- Trash
- Metals
- Organics
- Low Dissolved Oxygen

## **R**EFERENCE

- Integrated Pest Management (IPM)
   Six Step Approach | Mass.gov
- <u>City of Holyoke Yard Waste Disposal</u>
   <u>Program</u>

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)



#### BMP 1 – LAWN AND GROUNDS MAINTENANCE

- Employ mowing techniques to maintain a healthy lawn and minimize chemical use—no more than 1" of lawn should be removed from each mowing (grasses kept at 2.5" to 3.0" high are more heat resistant than close-cropped grass).
- Keep mower blades sharp and leave clippings in place after mowing.
- Plant disease-resistant, native plants and/or minimally mowed vegetation between application areas and drainage areas or surface waters to act as a buffer or filter.
- Spot treat infected areas with a recommended amount of pesticides rather than treating the entire area.
- Water plants in the early morning to maximize soil infiltration and minimize evaporation.

#### Fertilizer and Pesticide Management and Storage

- Utilize slow-release fertilizers when possible.
- Time fertilizer application periods for maximum plant uptake, usually in the fall and the spring.
- Do not over-apply fertilizer in late fall to "use it up" before winter.
   The effectiveness of fertilizer will not reduce when stored.
- Avoid combined products such as "weed and feed," which do not target specific problems at the appropriate time.
- Follow manufacturers' recommendations and label directions regarding amount and method of chemical application.
- Do not apply insecticides within 100 feet of drainage channels or surface waters such as lakes, ponds, wetlands, and streams.
- Use the minimum amount of toxic chemicals needed to complete the job. Avoid use of copper-based pesticides if possible.
- Do not apply chemicals when the ground is frozen, when the soil is dry, when irrigation is expected to turn on, or when it is currently raining or expected to rain to reduce chances of chemical runoff.
- Do not mix or prepare pesticides/fertilizers for application near storm drains or where accidental spills will contaminate surface water, groundwater, or soil.
- Perform a soil analysis prior to applying fertilizers to determine the appropriate nutrients required for soil conditions.
- Calibrate fertilizer/pesticide distributors to avoid excessive application.
- Ensure that pesticide application equipment is capable of immediate shutoff in case of emergency.
- Apply pesticides/fertilizers only when wind speeds are low.



#### BMP 1 – LAWN AND GROUNDS MAINTENANCE

- Till fertilizers into the soil rather than dumping or broadcasting them onto the surface.
- Irrigate slowly to prevent runoff and then only as much as is needed.
- Dispose of empty pesticide/fertilizer containers according to the instructions on the container label.
- Use up the pesticides. Rinse containers and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local Fire Department and the Massachusetts Department of Agricultural Resources.
- Provide secondary containment for pesticides and label them clearly.
- Store chemicals in an area which has been constructed in accordance with local fire codes for storing flammable or combustible materials.
  - Flammable products shall be stored separately from nonflammable products, preferably in a fire-proof cabinet.
  - Small quantities (less than 500 lbs or 220 gallons) of pesticides can be stored in cabinets constructed of doublewalled 18-gauge sheet metal.
  - Large quantities (greater than 500 lbs or 220 gallons) of pesticides can be stored in a prefabricated Hazardous Material Storage Building or in a purpose-built storage facility. It is not anticipated that many municipal facilities will store quantities in excess of 500 lbs or 220 gallons of pesticides.
  - Building walls should have a two-hour fire rating and be impervious to the stored materials.
  - Floors should be watertight, impervious, and provide spill containment.
- Store materials in an enclosed area or in covered, impervious containment, such as a locked cabinet. The cabinet shall be located in a first story room or one which has direct access to the outdoors.
- For pesticides, storage cabinets should be kept locked and the door to the storage area should contain a weatherproof sign warning of the existence and danger of pesticides inside. The door should be kept locked. The sign should be posted in both English and the language or languages understood by workers if this is not English.



#### BMP 1 – LAWN AND GROUNDS MAINTENANCE

The sign should be visible at a distance of twenty-five feet and should read as follows:

DANGER
PESTICIDE STORAGE
AREA
ALL UNAUTHORIZED
PERSONS KEEP OUT
KEEP DOORS LOCKED
WHEN NOT IN USE

- Pesticides shall not be stored in the same place as ammonium nitrate fertilizer.
- Separate pesticides and fertilizers from other chemical storage and other flammable materials.
- Label all containers with date of purchase, and use the older materials first.
- Clearly label all secondary containers.
- Never leave unlabeled or unstable pesticides and fertilizers in uncontrolled locations.
- Maintain a current written inventory of all pesticides and fertilizers at the storage site.
- Order for delivery as close to time of use as possible to reduce the amount of chemical stored at the facility.
- Order only the amount of materials needed in order to minimize excess or obsolete materials, which require storage and disposal.
- Regularly inspect storage area for leaks and spills.
- Storage area should be equipped with easily accessible spill cleanup materials and portable firefighting equipment.
- Emergency eyewash stations and emergency drench showers should be located near the storage area.
- Ensure that contaminated waste materials are kept in designated containers and stored in a labeled, designated, covered, and contained area.
- Dispose of excess or obsolete pesticides/fertilizers and associated waste materials in accordance with the manufacturer's specifications and all applicable regulations.



#### BMP 1 – LAWN AND GROUNDS MAINTENANCE

#### Debris Removal

- Use yard waste as mulch and topsoil.
- Compost or mulch yard waste or leaf litter.
- Sweep up yard debris instead of hosing down.
- Yard waste can be disposed of at Holyoke's Yard Waste Facility during the Spring season with the use of a permit. The facility exclusively accepts Paper Leaf Bags containing yard waste. It is located at the City's Water Pollution Control Facility at 1 Berkshire Street, Holyoke, MA 01040, which is across from Casella Waste Systems
- Clean pavement and sidewalk if fertilizer/pesticide is spilled on these surfaces before applying irrigation water by sweeping or vacuuming. Do not rinse off fertilizer/pesticide with water.
- Do not leave yard waste in the street, and do not sweep it into storm drains or streams.
- Do not blow organic waste onto adjacent impervious surfaces.

#### **INSPECTION PROCEDURES**

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring.
- Minimize excess watering, and repair leaks in the irrigation system as soon as they are observed.
- Inspect and remove accumulated debris from grounds.
- Routinely monitor lawns to identify problems during their early stages.
- Inspect for problems by testing soils.

## **MAINTENANCE PROCEDURES**

- Sweep paved areas regularly to collect loose particles, like leaf litter. Increase frequency of sweeps during fall months.
- Wipe up spills with rags and other absorbent material immediately.
- Do not hose down the area to a storm drain.
- Maintain sharp mower blades.



#### BMP 2 - STREET AND PARKING LOT SWEEPING

#### **DESCRIPTION**

Street and parking lot sweeping includes self-propelled equipment to remove sediment from paved surfaces that can enter storm drains or receiving waters. Sweeping is most effective for removing coarse particles, leaves, and trash. Regularly sweeping reduces catch basin cleaning, drainage blocks, and surface water pollution. The City currently aims to sweep all City-owned streets and parking lots at least twice annually.

#### **POLLUTION PREVENTION APPROACH**

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system to the maximum extent practicable.

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

- Adhere to a street and parking lot cleaning schedule all Cityowned streets and parking lots should be cleaned twice annually, once following road sanding and salting and once following leaf falls, and main streets should be cleaned approximately twice monthly.
- City parking lots should be checked regularly by Facility personnel and swept when needed.
- Any visible sediment should be swept up (including sand/salt mixtures and granular material) and disposed of properly.
- Control the number of points where vehicles leave the Facilities to allow sweeping to be focused on certain areas in parking lots.
- Sweep up the smallest particles feasible.
- Sweep in pattern to keep spilled material from being pushed into
- Before sweeping, manually rake sand from any turf areas on surfaces to be swept.
- Use hand-held tools to assist with mechanical equipment.
- If possible, recycle Fall leaf sweepings by composting.
- The Highway Department should maintain a log or schedule of sweeping activities they conduct. Information should include mileage, number of sweepings removed, and heavily sedimented areas for street rights-of-way.
- Facilities should maintain a log or schedule for their facility parking lots. Information should include number of sweepings removed, heavily sedimented catch basins, and date of sweeping activities. By recording heavily sedimented areas, prioritizations can be made to sweep these areas or clean catch basins more frequently.

#### **TARGETED FACILITIES AND OPERATIONS**

- All City-Owned Facility Parking Lots
- Street Rights-of-Way
- Highway Division Operations

#### **TARGETED CONSTITUENTS**

- Sediment
- Nutrients
- Salt
- Trash
- Metals
- Oil & Grease
- Organics

#### **REFERENCE**

- Reuse and Disposal of Street Sweepings, MassDEP Policy # BAW-18-001
- Holyoke 2021 Street Sweeping Map

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)



## **BMP 2 - STREET AND PARKING LOT SWEEPING**

#### **INSPECTION PROCEDURES**

 Regularly inspect streets and City-owned parking lots within the MS4 for debris.

#### **MAINTENANCE PROCEDURES**

- Adjust broom frequently to maximize efficiency of sweeping operations.
- After sweeping is finished, properly dispose of sweeper wastes, composting organic material when possible.
- Do not use kick brooms or sweeper attachments that tend to spread dirt.
- When unloading sweeper, make sure there is no dust or sediment release.
- Inspect sweepers to check that they are properly maintained and repaired.



## **Street Sweeping & Parking Lot Maintenance Activity Log**



# **MAINTENANCE LOG BMP 2 - Street & Parking Lot Sweeping**

Maintenance Records (copy information below for each control measure) Example
Equipment: FRHT M2 Sweeper
Regular Maintenance Activities: Check sweeper brooms for wear/issues.
Regular Maintenance Schedule: Regularly after use.
Date of Action: May 2023
Reason for Action: Regular Maintenance Discovery of Problem
If Problem,
- Description of Action Required: No problems noted.
- Date Fixed:
- Justification if Maintenance Schedule is Extended:
Notes:
Control Measure Maintenance Records (copy information below for each control measure)
Equipment:
Regular Maintenance Activities:
Regular Maintenance Schedule:
Date of Action:
Reason for Action: Regular Maintenance Discovery of Problem
If Problem,
- Description of Action Required:
- Date Fixed:
- Justification if Maintenance Schedule Extended:
Notes:
Notes.
Notes.

## BMP 3 – ROAD SAND/SALT APPLICATION AND STORAGE



## BMP 3 – ROAD SAND/SALT APPLICATION AND STORAGE

#### **DESCRIPTION**

Holyoke's current policy is to use salt or sand (or a combination of these materials) on streets and City-owned parking lots. Currently, road salt is stored at the salt shed under I-391 on South Water Street. Winter sand is available for use by Holyoke residents at Jed Days Landing. Proper storage is necessary to prevent contamination to surface and ground water supplies. Salts are very soluble—once in contact with water there is no way to remove salt. The major reasons for keeping salt covered and controlling use are that salt:

- Kills vegetation
- Corrodes infrastructure
- Blocks storm drains and swales
- Increases sedimentation to streams and rivers
- Small quantities (5% road salt) contain phosphorus, nitrogen, copper, and cyanide

#### POLLUTION PREVENTION APPROACH

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater system to the maximum extent practicable.

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

Proper Storage

Currently, the City has enclosed piles of road salt in the aforementioned salt shed. Storage Facilities for salt and sand/salt mixtures should have the following key elements:

- Covered structures on impervious surfaces.
- Drainage should be diverted away from storage facility.
- Sand/salt handling should be done within storage facility.
- Should not be located in a water supply watershed or within 100-year floodplain.

Proper Disposal

Disposal of sand/salt mixtures should not be done in the following areas:

- Wetlands
- Any surface waters
- Well locations and public drinking supplies

#### **TARGETED FACILITIES AND OPERATIONS**

- All City-Owned Facilities with walkways or vehicle parking including, but not limited to: Schools, Parking lots, etc.
- Facilities that store salt or sand
- Street Rights-of-Way

#### **TARGETED CONSTITUENTS**

- Salt
- Nutrients
- Metals
- Low Dissolved Oxygen
- TSS/TDS/Sediment
- Oil & Grease

#### **REFERENCE**

- City of Holyoke <u>Sidewalk Snow</u> Removal Ordinance
- Holyoke DPW Snow Information PageMassDEP Guidelines on Road Salt Storage (Updated January 1996)

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)

## BMP 3 – ROAD SAND/SALT APPLICATION AND STORAGE



## BMP 3 – ROAD SAND/SALT APPLICATION AND STORAGE

#### Proper Removal

- Street cleaning of all City roadways at least twice annually.
- Catch basin cleaning completed as necessary to ensure that no catch basin within the MS4 is ever greater than 50% full.

#### Proper Use

- Establish a low salt area near any water bodies or residential areas
- Regulate the amount of road salt applied to prevent over-salting of motorways and increasing runoff concentrations.
- Vary the amount of salt applied to reflect site-specific characteristics, such as road width and design, traffic concentration, and proximity to surface waters.
- Provide calibration devices for spreaders in trucks to aid maintenance workers in the proper application of road salts.
- Establish air temperature and snow depth conditions favorable for successful use of salt.
- Use alternative materials, such as sand or gravel, in especially sensitive areas.
- Use environmentally friendly products alternative to traditional deicing salt.

#### **INSPECTION PROCEDURES**

- Inspect salt storage shed for leaks on a regular basis including Fall and Spring.
- Inspect salt application equipment including calibration equipment and spreaders.
- Inspect salt regularly for lumping or water contamination.
- Inspect surface areas for evidence of runoff salt stains in ground near and around the salt storage shed, loading area, or downslope.
- Inspect for excessive amounts of salt on roads.

#### **MAINTENANCE PROCEDURES**

- Service trucks and calibrated spreaders/sanders regularly to ensure accurate, efficient distribution of salt and sand.
- Educate and train operators on hazards of over-salting roads and environment at the beginning of the snow season as part of meetings with supervisors and drivers.
- Repair salt storage shed leaks.

## BMP 3 – ROAD SAND/SALT APPLICATION AND STORAGE



# MAINTENANCE LOG BMP 3 - Road Sand/Salt Application & Storage

Maintenance Records (copy information below for each control measure) Example
Equipment: FRHT Sander
Regular Maintenance Activities: Check sand distribution, check fluids in vehicle.
Regular Maintenance Schedule: Regularly during winter season.
Date of Action: November 2023.
Reason for Action: Regular Maintenance Discovery of Problem
If Problem,
- Description of Action Required: No issues noted.
- Date Fixed:
- Justification if Maintenance Schedule Extended:
Notes:
Maintenance Records (copy information below for each control measure)
Maintenance Records (copy information below for each control measure)  Equipment:
Equipment:
Equipment: Regular Maintenance Activities:
Equipment: Regular Maintenance Activities: Regular Maintenance Schedule:
Equipment: Regular Maintenance Activities: Regular Maintenance Schedule: Date of Action:
Equipment:  Regular Maintenance Activities:  Regular Maintenance Schedule:  Date of Action:  Reason for Action:   Regular Maintenance   Discovery of Problem
Equipment:  Regular Maintenance Activities:  Regular Maintenance Schedule:  Date of Action:  Reason for Action:
Equipment:  Regular Maintenance Activities:  Regular Maintenance Schedule:  Date of Action:  Reason for Action:  If Problem,  Description of Action Required:
Equipment:  Regular Maintenance Activities:  Regular Maintenance Schedule:  Date of Action:  Reason for Action: Regular Maintenance Discovery of Problem  If Problem,  - Description of Action Required:  - Date Fixed:

#### BMP 4 – SNOW STOCKPILING AND REMOVAL



#### BMP 4 – SNOW STOCKPILING AND REMOVAL

#### **DESCRIPTION**

Proper snow management in terms of stockpiling and removal can prevent or minimize runoff and pollutant loading impacts. Snow piles can contain trash, nutrients, sediments, salt, sand, and vehicle pollutants (petroleum, antifreeze, and oil) that can directly be carried into surface waters during snowmelt.

#### **POLLUTION PREVENTION APPROACH**

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system to the maximum extent practicable.

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

The City does not regularly stockpile snow. During extreme conditions when stockpiling is necessary, the following practices should be applied:

- Do not stockpile snow near or within direct drainage to surface waters.
- Do not stockpile snow in wooded areas, around trees, or in vegetated buffer zones due to sediment and salt damage to vegetation.
- Stockpile snow in pervious areas where it can slowly infiltrate.
- During plowing activities on pervious surfaces, blading (plow lowers blade below ground surface level and plows the upper layers of soil in addition to overlying snow) should be avoided to prevent erosion.
- Do not dispose of snow into waters of the United States. Snow disposal sites, including selection of appropriate snow disposal sites, will adhere to the Massachusetts Department of Environmental Protection Snow Disposal Guidance (Effective Date: December 11, 2020).

#### **INSPECTION PROCEDURES**

• Check snow piles for debris that could be windblown.

#### **MAINTENANCE PROCEDURES**

- Contain sediments as snow melts and removed every Spring from snow storage areas. This includes sweeping roadways and parking lots or other impervious areas.
- During plowing activities, avoid blocking drainage structures including catch basins, swales, and channels.

#### **TARGETED FACILITIES AND OPERATIONS**

- Street Rights-of-Way
- All City-Owned Facilities with walkways or vehicle parking including, but not limited to: Schools, Parking lots, etc.
- Highway Department Services

#### **TARGETED CONSTITUENTS**

- Sediment
- Salt
- Nutrients
- Trash
- Oil & Grease

#### **REFERENCE**

 Snow Disposal Guidance | Mass.gov

## **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)



## **BMP 5 - MATERIALS MANAGEMENT**

#### **DESCRIPTION**

Materials management entails the selection of the individual product and quantity, the correct use and storage of the product, and the proper disposal of associated waste(s). It is important to be responsible with common chemicals and solvents including paints, cleaners, and automotive products to reduce contamination to stormwater runoff.

#### POLLUTION PREVENTION APPROACH

Proper management reduces the likelihood of accidental spills or releases of hazardous materials into storm drains or during storm events. In addition, health and safety conditions at the facility will improve.

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system to the maximum extent practicable.

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

#### Material Inventory

- Identify all hazardous and non-hazardous substances by reviewing purchase orders and conducting a walk-through of each City facility.
- Compile Material Safety Data Sheets (MSDS) for all chemicals. These should be readily accessible to all facility employees and submitted to the Holyoke Fire Department when applicable.
- Label all containers of significant materials that include cleaners, fuels, and other hazards.
- Take note of materials that require secondary containers, and clearly label secondary containers.
- Identify handling, storage, and disposal requirements of all chemicals.
- Use environmentally friendly or non-hazardous substitutes when appropriate that include but not limited to H2Orange2, Orange Thunder, and Simple Green<sup>®</sup>.
- Keep hazardous materials and waste off the ground.
- All drums and containers should be in good condition and properly labeled.
- Loose materials including any gravel, salt, or sand piles should be covered or placed in shelter when possible.

#### Solid and Liquid Waste

## **TARGETED FACILITIES AND OPERATIONS**

- All City-Owned Facilities
- All City-Owned Parks and Open Spaces
- All Fleet Vehicle and Equipment Operations

#### **TARGETED CONSTITUENTS**

- Sediment
- Nutrients
- Trash
- Metals
- Oil & Grease
- Organics
- Low Dissolved Oxygen

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)



## **BMP 5 - MATERIALS MANAGEMENT**

- Trash storage bins, dumpsters, and disposal areas should be clean and free of debris, especially those located near catch basins.
- Dumpsters should be maintained in good condition, inspected regularly, and securely closed at all times.
- All equipment and materials should be stored properly, and work areas should be kept clean.
- Waste shall be disposed of according to local, state, and federal laws.
  - Temporary trash storage should be inspected weekly before it is taken to the transfer station.
- Piled debris, including sweepings, construction, and wood debris should be inspected weekly before it is taken off-site.
- Do not dump or discharge any pollutant into MS4 storm drain systems or surface waters. Pollutants include any waste materials resulting from sewage, agricultural, industrial, or commercial processes. Exemptions include flows from firefighting activities, municipal waterline flushing, irrigation discharge, water from individual residential car washing, natural groundwater, stream, or wetland flows, and fluid from dye tests provided the Holyoke DPW was notified of such tests.

#### **INSPECTION PROCEDURES**

- Physical on-site verification of sealed floor drains (or redirected to sanitary sewer).
- Regular inspection of material storage areas (inside and outside) to verify items are not exposed to precipitation and are covered or in enclosed areas.
- Regular inspection and cleaning of oil/water separators by qualified contractor or facility personnel.
- Inspect stormwater discharge locations and on-site stormwater drainage infrastructure (e.g., catch basins) regularly (for contaminants, soil staining, plugged discharge lines and other maintenance needs).

#### **MAINTENANCE PROCEDURES**

- Repair or replace any leaking/defective containers and replace labels as necessary.
- Maintain caps and/or covers on containers.
- Maintain aisle space for inspection of products/wastes.
- Routinely clean workspaces.
- Properly collect/dispose of waste.
- Routinely maintain and inspect vehicles and equipment.



# Train employees routinely when new products enter the facility on proper use, storage, disposal, and safety concerns. MSDS sheets should be reviewed and readily accessible in a central facility location. Review any Spill Prevention, Control, and Countermeasure (SPCC) Plan if applicable for the facility. SPCC Plans are in place for specific facilities with petroleum products. Adhere to SWPPP maintenance requirements if facility is required to have a SWPPP.



# **MAINTENANCE LOG BMP 5 - Materials Management**

Maintenance Records (copy info	ormation below for each	control measure) <b>Example</b>
Control Measure or Equipment:	Waste materials collec	ting in workspace.
Regular Maintenance Activities:	: Maintain clean work a	rea and dispose of waste properly.
Regular Maintenance Schedule:	As needed.	
Date of Action: June 2, 2021		
Reason for Action: Regu	ılar Maintenance	☑ Discovery of Problem
If Problem,		
- Description of Action Require	d: Remove collected wa	este.
- Date Fixed: Immediately; June	e 2, 2021	
- Justification if Maintenance So	chedule Extended:	
Notes:		
Maintenance Records (copy info	ormation below for each	control measure)
Maintenance Records (copy info		control measure)
		control measure)
Control Measure or Equipment:	:	control measure)
Control Measure or Equipment: Regular Maintenance Activities	:	control measure)
Control Measure or Equipment: Regular Maintenance Activities: Regular Maintenance Schedule: Date of Action:	:	control measure)  Discovery of Problem
Control Measure or Equipment: Regular Maintenance Activities: Regular Maintenance Schedule: Date of Action:	:	
Control Measure or Equipment:  Regular Maintenance Activities:  Regular Maintenance Schedule:  Date of Action:	: Ilar Maintenance	
Control Measure or Equipment:  Regular Maintenance Activities:  Regular Maintenance Schedule:  Date of Action:  Reason for Action:	: Ilar Maintenance d:	
Control Measure or Equipment:  Regular Maintenance Activities:  Regular Maintenance Schedule:  Date of Action:  Reason for Action:  If Problem,  Description of Action Requires	ilar Maintenance d: ed to Full Function:	



#### BMP 6 - HAZARDOUS MATERIAL STORAGE

#### **DESCRIPTION**

It is important to properly store hazardous materials to prevent them from contaminating stormwater runoff. Common hazardous materials that may be present in City-owned facilities within the MS4 include:

- Cleaning agents: solvents, drain cleaners, and bleach
- Vehicle maintenance fluids: motor oil, gasoline, antifreeze, degreasers, and radiator flush
- Water treatment chemicals
- Paints

#### POLLUTION PREVENTION APPROACH

Proper management reduces the likelihood of accidental spills or releases of hazardous materials during storm events. In addition, health and safety conditions at the facility will improve.

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system to the maximum extent practicable.

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

#### Loading/Unloading

- All facilities should have proper procedures in place for loading and/or unloading hazardous materials, especially in areas located near catch basins.
- Do not conduct loading and unloading of exposed hazards during wet weather, whenever possible.
- Load and unload only at designated loading areas.
- If feasible, load and unload all materials and equipment in covered areas such as building overhangs at loading docks.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections.

#### Storage

- When possible, store hazardous materials and wastes indoors.
- Storage of reactive, ignitable, or flammable liquids must comply with the Massachusetts Fire Prevention Regulations for the Storage of Flammable and Combustible Materials (527 CMR 14.03).
- Place containers in a designated area that is paved, free of cracks and gaps, and impervious, in order to contain leaks and spills. The area should also be covered.

#### **TARGETED FACILITIES AND OPERATIONS**

- All City-Owned Facilities
- All Fleet Vehicle and Equipment Operations

#### **TARGETED CONSTITUENTS**

- Sediment
- Nutrients
- Trash
- Metals
- Oil & Grease
- Organics
- Low Dissolved Oxygen

#### **REFERENCE**

 City of Holyoke Department of Public Works

#### **NOTES / SPECIFIC PROCEDURES:**

 These BMPs may not be enough to meet all regulatory compliance obligations for specific materials, container types (e.g. UST/AST), or volumes of material, kept at municipal facilities. If there are specific regulatory compliance guidelines for a material, those guidelines should supersede this guidance.



#### **BMP 6 - HAZARDOUS MATERIAL STORAGE**

- Provide secondary containment for hazardous materials and waste placed outdoors.
- Keep containers away from high traffic areas.
- Cover all containers and drums or place under shelter, if stored outdoors.
- MSDSs should be supplied for all stored materials at a specific facility, and in readily accessible location for all facility employees.
- Maintain a log inventory of materials stored at the facility.
- Chemicals should be kept in original labeled containers.
- Containers should not be overfilled.
- Store containers on pallets.
- Properly stack containers and drums.
- Storage areas should be enclosed.
- Minimize storage on-site.
- Keep storage areas clean and organized.
- Certain hazardous materials are accepted by the Holyoke DPW by appointment on scheduled collection days. The Collection Facility is located at 63 Canal Street, Holyoke, MA 01040
- Certain medical waste materials are accepted by Tapestry Health at 15A Main Street, Holyoke, MA 01040.
- Contractors should be responsible for delivery, storage, and waste disposal practices.
- Containers should not be glass.
- Segregate reactive/incompatible materials (such as chlorine and ammonia).
- Place drip pans under container spouts.
- Install overfill protection on storage tanks/drums.
- Lock storage areas and provide warning signs.

#### **INSPECTION PROCEDURES**

- Check loading and unloading equipment regularly for leaks, including valves, pumps, flanges and connections.
- Look for dust or fumes during loading or unloading operations.
- Inspect storage areas regularly for leaks or spills.
- Conduct routine inspections and check for external corrosion of material containers.
- Check for structural failure, spills and overfills due to operator error, failure of piping system.
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.
- Visually inspect new tank or container installations for loose fittings, poor welding, and improper or poorly fitted gaskets.



## **BMP 6 - HAZARDOUS MATERIAL STORAGE**

- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Replace containers that are leaking, corroded, or otherwise deteriorating with ones in good condition. If the liquid chemicals are corrosive, containers made of compatible materials must be used instead of metal drums.
- Label new or secondary containers with the product name and hazards.

#### **MAINTENANCE PROCEDURES**

- Conduct regular inspections and make repairs as necessary. The frequency of repairs will depend on the age of the facility.
- Check loading and unloading equipment regularly for leaks.
- Sweep area regularly with dry broom.
- Conduct major clean-out of loading and unloading area and any sumps annually in the Fall.
- Repair or replace any leaking/defective containers and replace labels as necessary.
- Maintain caps and/or covers on containers.
- Maintain aisle space for inspection of products/wastes.
- Train employees on proper procedures and when new hazardous materials are used.



# **MAINTENANCE LOG BMP 6 - Hazardous Material Storage**

<u>Maintenance Records</u> (copy information below for each control measure) Example
Control Measure or Equipment: Cap on hazardous material container is cracked.
Regular Maintenance Activities: Noted during regular work operations. Check hazardous materials containers.
Regular Maintenance Schedule: As needed.
Date of Action: May 29, 2023
Reason for Action: Regular Maintenance Discovery of Problem
If Problem,
- Description of Action Required: Replace cracked cap.
- Date Fixed: Immediately, May 29, 2021
- Justification if Maintenance Schedule Extended:
Notes:
Maintenance Records (copy information below for each control measure)
Control Measure or Equipment:
Regular Maintenance Activities:
Regular Maintenance Schedule:
Date of Action:
Reason for Action: Regular Maintenance Discovery of Problem
If Problem,
- Description of Action Required:
- Date Fixed:
- Justification if Maintenance Schedule Extended:
Notes:

## BMP 7 - VEHICLE FUELING, MAINTENANCE, AND STORAGE



## BMP 7 - VEHICLE FUELING, MAINTENANCE, AND STORAGE

#### **DESCRIPTION**

Vehicle repair and service (e.g. parts cleaning and fueling), replacement of fluids (e.g. oil change), and outdoor equipment storage and parking (dripping engines) can impact water quality if stormwater runoff from areas with these activities occurring on them becomes polluted by a variety of contaminants. Spills and leaks that occur during vehicle and equipment fueling can contribute hydrocarbons, oil and grease, as well as heavy metals to stormwater runoff. It only takes 1 gallon of oil to contaminate 1 million gallons of drinking water. Some fueling/transportation facilities may be subject to specific regulations (e.g. SWPPP) requirements.

#### POLLUTION PREVENTION APPROACH

It is important to properly store and discard vehicle fluids including oil, transmission fluid, antifreeze, and lubricants to prevent surface and groundwater contamination from spills or improper disposal. Currently, vehicle washing is done at the Upland Road Maintenance Garage and completely indoors at the DPW Barn.

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system.

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

#### **General Practices**

- Store fluids in labeled, plastic or metal container with a lid away from drains and catch basins.
- Place flammables in a fire safe cabinet.
- Place drip pans under leaking vehicles, valves, spigots, and pumps.
- Routinely check for leaking vehicles.
- Do not do any vehicle maintenance near storm drains.
- Vehicle maintenance should be done in a covered facility.
- Install inlet catch basin equipped with a small sedimentation basin or grit chamber to remove large particles from stormwater in highly impervious areas.

#### **Fueling**

- Ensure that all fueling activities are not conducted near storm drains and dry wells or that procedures are in place to control any spills.
- Fuel storage tanks should be placed on impervious surfaces with no cracks or gaps; secondary containment is recommended.

#### **TARGETED FACILITIES AND OPERATIONS**

 All City-owned facilities storing vehicles and equipment

#### **TARGETED CONSTITUENTS**

- Sediment
- Nutrients
- Trash
- Metals
- Oil & Grease (Hydrocarbons)

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)

## BMP 7 - VEHICLE FUELING, MAINTENANCE, AND STORAGE



## BMP 7 - VEHICLE FUELING, MAINTENANCE, AND STORAGE

- Provide barriers such as posts, guard rails, or bollards where tanks are exposed, to prevent collision damage with vehicles.
- Post signs at the fuel dispenser or fuel island warning vehicle owners/operators against "topping off" of vehicle fuel tanks.
- Label drains within the facility boundary, by paint/stencil (or equivalent), to indicate whether they flow to an oil/water separator, directly to the sewer, to a storm drain or into a drywall.

#### Vehicle Maintenance

- Provide a designated area for vehicle maintenance on an impervious surface.
- Keep equipment clean; don't allow excessive build-up of oil and grease.
- If possible, perform all vehicle fluid removal or changing inside or under cover:
  - Keep a drip pan or absorbent pad under the vehicle while you unclip hoses, unscrew filters, or remove other parts.
  - Promptly transfer used fluids to the proper waste or recycling drums. Don't leave drip pans, absorbent pads, or other open containers lying around.
  - Keep drip pans or containers under vehicles or equipment that might drip during repairs.
  - Do not change motor oil or perform equipment maintenance in non-appropriate areas.
- If temporary work is being conducted outside: Use a tarp, ground cloth, drip pans, or absorbent pads beneath the vehicle or equipment to capture all spills and drips.
- If equipment (e.g., radiators, axles) is to be stored outdoors, oil and other fluids should be drained first. This is also applicable to vehicles being stored and not used on a regular basis.

#### Disposal

- Recycle or properly dispose of fluids.
- Dump full pans into 55-gallon drums.
- Dispose of debris including oil filters, oil cans, rags, and clean-up supplies.
- Do not dump vehicle fluids down storm drains.
- Interior floor drains should discharge to holding tanks or be sealed.

#### Used Oil

- Recycle used oil.
- Do not mix wastes with used oil.

#### **INSPECTION PROCEDURES**

## BMP 7 - VEHICLE FUELING, MAINTENANCE, AND STORAGE



## BMP 7 - VEHICLE FUELING, MAINTENANCE, AND STORAGE

- Identify locations of floor drains and catch basins and know where they discharge to. Floor drains should be connected to the sanitary sewer system and catch basins should be connected to the drainage system.
- Regularly inspect vehicles and equipment for leaks and repair immediately.
- Inspect fuel storage tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Inspect fueling areas, catch basin inserts, containment areas, and drip pans on a regular schedule.

#### **MAINTENANCE PROCEDURES**

- Sweep the maintenance area on a regular basis, if it is paved, to collect loose particles. Wipe up spills with rags and other absorbent material immediately. Do not hose down the area to a storm drain.
- Clean oil/water separators, sumps and on-site treatment/recycling units at appropriate intervals.
- Keep ample supplies of spill cleanup materials onsite. Cleanup spills immediately.
- Properly train employees on fueling and handling oil and waste oil.

## **BMP 8 - VEHICLE WASHING**



#### **BMP 8 - VEHICLE WASHING**

#### **DESCRIPTION**

Wash water from vehicle and equipment cleaning activities performed outdoors or in areas where wash water flows onto the ground can contribute toxic hydrocarbons and other organic compounds, oils and greases, nutrients, phosphates, heavy metals, and suspended solids to stormwater runoff.

Consistent with the USEPA NPDES Phase II Small Municipal Separate Storm Sewer System (MS4) Permit, municipal vehicle washing activities should not discharge pollutants to the MS4 system.

#### **POLLUTION PREVENTION APPROACH**

If possible, take vehicles to the City's Upland Road Maintenance Garage, the DPW Barn, or a commercial car wash facility to avoid discharging wash fluids outdoors. Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system.

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

#### General

- Use biodegradable, phosphate-free detergents for washing vehicles as appropriate. Products include Simple Green® biodegradable car wash cleaner.
- Mark the area clearly as a wash area.
- Post signs stating that only washing is allowed in wash area and that discharges to the storm drain are prohibited. Facility employees should know where catch basins are.
- Provide a trash container in wash area.
- Those that use facility to wash vehicles (e.g., students) should be informed of proper washing protocols via signage or training.

#### Vehicle and Equipment Cleaning

- Install sumps or drain lines to collect wash water or construction of a berm around the designated area and grading of the area to collect wash water as well as prevent stormwater run-on.
- Consider washing vehicles and equipment inside the building if washing/cleaning must occur on-site.
- Use dry clean-up methods as much as possible instead of washing with water, like sweeping, vacuuming, or wiping equipment down.
- If washing must occur on-site and outdoors:
  - Use designated paved wash areas. Designated wash areas must be well marked with signs indicating where and how

#### **TARGETED FACILITIES AND OPERATIONS**

 All City-owned facilities storing vehicles and equipment

#### TARGETED CONSTITUENTS

- Sediment
- Nutrients
- Trash
- Metals
- Oil & Grease
- Organics

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)

#### **BMP 8 - VEHICLE WASHING**



## **BMP 8 - VEHICLE WASHING**

washing must be done. This area must be covered or bermed to collect the wash water and graded to direct the wash water to a treatment or disposal facility.

- Cover the wash area when not in use to prevent contact with rainwater.
- Grassy and pervious (porous) surfaces may be used to promote direct infiltration of wash water, providing treatment before recharging groundwater and minimizing runoff to an adjacent stormwater system.
- Consider using a pollutant filter that removes petroleum and nutrients, like Filtrexx™, if washing vehicles on impervious surfaces discharging to storm drains.
- Use hoses with nozzles that automatically turn off when left unattended. Use high-pressure, low-volume sprays.
- Perform pressure cleaning and steam cleaning off-site to avoid generating runoff with high pollutant concentrations. If done onsite, no pressure cleaning and steam cleaning should be done in areas designated as protection areas for public water supply.
- Do not power wash, steam clean, or perform engine cleaning or undercarriage cleaning if wash water cannot be properly contained and disposed of.

#### Disposal

- Filter and recycle wash water if possible.
- If discharging to an oil/water separator, do not use detergents that disperse oil in wash water and make oil/water separators ineffective with oil passing to the sanitary sewer system. It is best to use high pressure water with no cleaning agent. If using a cleaner, it must be a non-emulsifying product such as QOR-110 ("Quick Oil Release").

#### **INSPECTION PROCEDURES**

- Inspect floor drain systems regularly use only those that discharge to a sanitary sewer.
- Identify the cleaning needs of catch basins and oil/water separators.

### **MAINTENANCE PROCEDURES**

- Maintain a figure of on-site storm drain locations to avoid discharges to the storm drainage system.
- Take precautions against excess use of and spillage of detergents.
- Clean vehicles only where wash-water can be captured for proper disposal.

#### BMP 9 – SPILL PREVENTION AND RESPONSE



#### BMP 9 – SPILL PREVENTION AND RESPONSE

#### **DESCRIPTION**

It is important to have a plan in place in the event a spill should occur, so contaminants do not mix with stormwater runoff. A spill prevention and response plan can be effective at reducing the risk of contamination to surface and groundwater contamination—but only with proper personnel training, the availability of cleanup supplies, and when management ensures procedures are followed.

#### **POLLUTION PREVENTION APPROACH**

- Create a well thought out and implemented spill prevention and response plan.
- Post a response checklist in any hazardous waste storage area with contact information (including emergency phone numbers), and spill containment procedures.
- Train personnel.
- Regularly update plan, checklists, and contact information.
- Regularly inspect spill potential areas.
- Facilities with aboveground storage tanks (ASTs) and underground storage tanks (USTs) greater than 1,320 gallons and 42,000 gallons must have a Spill Prevention, Control and Countermeasures (SPCC) Plans in place.

#### SPILL PREVENTION AND RESPONSE PLAN

An effective Spill Prevention and Response Plan may include one or more of the following:

- Description of the facilities, the address, activities and materials involved.
- Identification of key spill response personnel and hospital contacts.
- Identification of the potential spill areas or operations prone to spills/leaks.
- Identification of which areas should be or are bermed to contain spills/leaks.
- Facility map identifying the key locations of areas, activities, materials, structural BMPs, etc.
- Material handling procedures and safety measures for each kind of waste.
- Spill response procedures including:
  - Assessment of the site and potential impacts
  - Containment of the material
  - Notification of the proper personnel and evacuation procedures

#### **TARGETED FACILITIES AND OPERATIONS**

- All City-Owned Buildings
- Street and Public Rights-of-Way

#### **TARGETED CONSTITUENTS**

- **Nutrients**
- Metals
- Oil & Grease
- **Hydrocarbons**
- **Organics**

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)

#### BMP 9 – SPILL PREVENTION AND RESPONSE



#### BMP 9 – SPILL PREVENTION AND RESPONSE

- Clean up of the site
- Disposal of the waste material
- Proper record keeping procedures
- Plan to protect all storm drains in the event of a spill.
- Descriptions of spill response equipment, including safety and cleanup equipment.

#### SUGGESTED BEST MANAGEMENT PRACTICES

Spill/Leak Prevention

- If possible, move material handling indoors, under cover, or away from storm drains or sensitive water bodies.
- Properly label all containers so that the contents are easily identifiable.
- Berm storage areas so that if a spill or leak occurs, the material is contained.
- Cover outside storage areas either with a permanent structure or with a seasonal one such as a tarp so that rain will not come into contact with the materials.
- Check containers (and any containment sumps) often for leaks and spills. Replace containers that are leaking, corroded, or otherwise deteriorating with containers in good condition. Collect all spilled liquids and properly dispose of them.
- Store, contain, and transfer liquid materials in such a manner that
  if the container is ruptured or the contents spilled, they will not
  discharge, flow or be washed into the storm drainage system,
  surface waters, or groundwater.
- Place drip pans or absorbent materials beneath all mounted taps and at all potential drip and spill locations during the filling and unloading of containers. Any collected liquids or soiled absorbent materials should be reused/recycled or properly disposed of.
- For City programs that involve material transport, only transport the minimum amount of material needed for the daily activities and transfer materials between containers at a municipal yard where leaks and spills are easier to control.
- If paved, sweep and clean storage areas monthly, do not use water to hose down the area unless all the water will be collected and disposed of properly (e.g., in an oil/water separator).
- Install a spill control device (such as a tee section) in any catch basins that collect runoff from any storage areas if the materials stored are oil, gas, or other materials that separate from and float on water. This will allow for easier cleanup if a spill occurs.
- If necessary, protect catch basins while conducting field activities so that if a spill occurs, the material will be contained.

#### BMP 9 – SPILL PREVENTION AND RESPONSE



#### BMP 9 – SPILL PREVENTION AND RESPONSE

 Keep ample supplies of spill cleanup materials such as Speedi Dry and absorbent boom pads onsite.

#### Spill Clean Up

- Small non-hazardous spills:
  - Use a rag, damp cloth or absorbent materials for general cleanup of liquids.
  - Use brooms or shovels for the general cleanup of dry materials.
  - If water is used, it must be collected and properly disposed of.
     The wash water cannot be allowed to enter the storm drain.
  - Dispose of any waste materials properly.
  - Clean or dispose of any equipment used to clean up the spill properly.
- Large non-hazardous spills
  - Use absorbent materials for general cleanup of liquids.
  - Use brooms, shovels, or street sweepers for the general clean-up of dry materials.
  - If water is used, it must be collected and properly disposed of.
     The wash water cannot be allowed to enter the storm drain.
  - Dispose of any waste materials properly.
  - Clean or dispose of any equipment used to clean up the spill properly.
- For hazardous or very large spills, the Fire Department and/or a
  private cleanup contractor may need to be contacted to assess
  the situation and conduct the cleanup and disposal of the
  materials.
- Chemical cleanups of material can be achieved with the use of absorbents, gels, and foams.
- Remove the adsorbent materials promptly and dispose of according to regulations.
- If the spilled material is hazardous, then the used cleanup materials, including rags, are also hazardous and must be sent to a certified laundry facility or disposed of as hazardous waste.

#### Reporting

- Report any spills immediately to the identified key municipal spill response personnel.
- Report spills in accordance with applicable reporting laws. Spills
  that pose an immediate threat to human health or the
  environment must be reported immediately to the Fire
  Department at 911, the City's Board of Health at 413-322-5595,
  and the Department of Public Works at 413-322-5645.

#### BMP 9 – SPILL PREVENTION AND RESPONSE



#### BMP 9 – SPILL PREVENTION AND RESPONSE

- Large spills including those over 10 gallons should be reported to the Fire Department at 911 and the Department of Public Works at 413-322-5645.
- Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour). An oil spill over 10 gallons that reaches a surface water, sewer, storm drain, ditch, or culvert leading thereto requires MassDEP notification at 1-888-304-1133.
- After the spill has been contained and cleaned up, a detailed report about the incident should be generated and kept on file. The incident may also be used in briefing staff about proper procedures.

#### **INSPECTION PROCEDURES**

- Inspect secondary containment systems and oil/water separators periodically to identify any operational problems.
- Inspect containers for leaks, areas near storm receiver inlets and outlets, and floor drains for indications of spills.

#### **MAINTENANCE PROCEDURES**

- Pump out oil/water separators as needed.
- Protect drains with oil absorbent materials.
- Clean out receivers on regular schedule.
- Remove spilled salt from salt loading areas and salting procedures.



#### **BMP 10 - CATCH BASIN CLEANING**

#### **DESCRIPTION**

It is important to remove sediments from catch basins that can have a high concentration of pollutants including metals and hydrocarbons. These sediments can clog downstream drainage systems and transport pollutants to nearby water bodies.

#### **POLLUTION PREVENTION APPROACH**

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system to the maximum extent practicable.

#### SUGGESTED BEST MANAGEMENT PRACTICES

- Prioritize inspection and maintenance for catch basins located near construction activities.
- Ensure that no catch basin at any time will be more than 50 percent full.
- Document catch basins with sumps more than 50 percent full during two consecutive inspections/cleanings.
- US EPA recommends cleaning basins when solids reach one-third the depth from the basin bottom to the invert of the lowest pipe into or out of the basin.
- Target cleaning for early Spring or late Fall.
- Clean manually or with equipment (i.e., bucket loaders).
- Properly dispose of catch basin material or store until contractor picks up cleanings (MassDEP and US EPA requires chemical analysis to determine if substance is hazardous waste).
- Repair damaged catch basins including outlet traps.
- Install hoods if catch basins do not have them.
- Inform employees that catch basins are part of the stormwater drainage system and not the sanitary sewer system.
- The DPW should maintain a log of cleaning activities. Information should include the amount of waste removed (volume or weight) and areas with heavily filled basins.
- Facilities should maintain a log of cleaning activities on their parking lots. Information should include amount of waste removed (volume or weight), heavily filled catch basins, and dates cleaned by the Highway Division.

#### **INSPECTION PROCEDURES**

Inspect catch basins, grates, and ditches at least once per year (best times are before the start and before the end of the rainy season).

#### **TARGETED FACILITIES AND OPERATIONS**

- All City-Owned Facilities
- Street Rights-of-Way
- **Disposal of Removed Solids**

#### **TARGETED CONSTITUENTS**

- Sediment
- **Nutrients**
- Trash
- Metals
- Oil & Grease
- **Organics**

#### **REFERENCE**

MassDEP Management of Catch **Basin Cleanings** 

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)



#### **BMP 10 - CATCH BASIN CLEANING**

- Inspections should be incorporated during routine cleaning, as part of reconstruction contracts, and through requests made by residents or other City departments.
- If illicit discharges are observed or suspected, notify the DPW at phone 413-322-5645.

#### **MAINTENANCE PROCEDURES**

- Clean catch basins based on the cleaning schedule or as needed.
   Catch basins should be checked for sediment levels in sump.
   Those in areas that accumulate a significant amount of sediment should be cleaned more frequently.
- During catch basin repairs, any hoods missing should be replaced.



## **Catch Basin Maintenance Log**

Date	Catch Basin Asset ID	Nearest Street Address	Percent Full Sump at Initiation (Estimated)	Volume of Material Removed (Estimated)	Disposal Method	Follow-up Required
		<u> </u>				



May 2023

## **CATCH BASIN INSPECTION FIELD SHEETS**

**Background Data** 

City:	Street:		Catch Basin ID: CB-	
Owner: City State Private Otl	ner:	Nearest House/Utility Pole #:		
Today's date:		Time (Military):		
Investigators:		Form completed by:		
A: Depth Rim to Lowest Outlet Invert (in):		B: Depth Rim to Top of Sec	diment (Before Cleaning) (in.):	
C: Depth Rim to Bottom of Sump after Cleaning (in.):	D: Depth of Sump = A – C (i	n):	Catch Basin Sump % Full = (C-B) / D:	
Land Use in Drainage Area (Check all that apply):		Ongoing Construction Site		
☐ Industrial	l	Open Space/Wooded		
Urban Residential		☐ Institutional		
Suburban Residential		Other:		
☐ Commercial	1	Known Industries:		
Notes:				



Visual/Sensory Observations of Potential Illicit Discharge?								
Are Any Visual/Sensory Observations Present?		Yes	☐ No	(If No, Skip Entire Section)				

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Flow		Flow Source:	1 – Trickle	2 – Moderate	3 – Substantial
Odor		☐ Sewage     ☐ Rancid/sour     ☐ Petroleum/gas       ☐ Sulfide     ☐ Other:	1 – Faint	2 – Easily detected	3 – Noticeable from a distance
Color		☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Orange ☐ Red ☐ Other:	1 – Faint color	2 – Moderately visible	3 – Clearly visible
Turbidity		See severity	1 – Slight cloudiness	2 – Cloudy	3 – Opaque
Floatables (Does Not Include Trash!)		Sewage (Toilet Paper, etc.) Suds Petroleum (oil sheen) Other:	1 – Few/slight; origin not obvious	2 – Some; indications of origin (e.g., possible suds or oil sheen)	3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 7: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

## KLEINFELDER Bright People. Right Solutions.

#### BMP 11 - PET WASTE, WATERFOWL, AND LITTER MANAGEMENT

### BMP 11 - PET WASTE, WATERFOWL, AND LITTER MANAGEMENT

#### **DESCRIPTION**

Pet droppings are important contributors of pollution in surface waterbodies where there are high populations of dogs. Studies have shown that a typical dog dropping can have as many as 3 billion fecal coliform and can carry many diseases that could make water unsafe for contact.

Waterfowl waste not only raises bacteria concentrations to levels unsafe for water contact recreation, but it is also a source of nutrients that allow excessive growth of algae and rooted aquatic plants in receiving waters. Feeding of waterfowl by streams and ponds encourages waterfowl congregation in those areas.

#### POLLUTION PREVENTION APPROACH

Provide pet waste and waterfowl management awareness and education programs with the following elements:

- Encouraging residents to clean up after their pets and to properly dispose of such wastes that may be deposited in their yards, streets, and parks.
- Posting signs in local parks describing the problem and urging cleanup and proper disposal of pet wastes.
- Discourage feeding of waterfowl at local parks, particularly where adjacent to waterways. Produce educational material and/or post signage as appropriate.
- Provide pet waste information to dog owners during annual pet license renewal.

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

- Put pet waste in the trash.
- Provide pet waste bag dispensers at City-owned parks.
- Restrict dog access to areas of parks where swales, steep slopes and streams are.
- Provide vegetated buffers of prescribed widths between dog parks and waterways, swales, storm drain inlets, gullies, and steep slopes.
- Incorporate public outreach elements like signage and informational brochures into and around parks.

#### **INSPECTION PROCEDURES**

- Routinely inspect common dog walking areas for pet waste.
- Evaluate pet waste/waterfowl waste management and document targeted effort to address "problem" areas.

#### **TARGETED FACILITIES AND OPERATIONS**

- All City-Owned Parks, Playgrounds, and Reservations
- Sidewalk and Street Rights-of-Way
- Areas surrounding waterbodies with bacteria/pathogen impairments: Housatonic River, East, Southwest, and West Branch

#### **TARGETED CONSTITUENTS**

- Bacteria
- Nutrients
- Organics
- Low Dissolved Oxygen

#### **Reference**

 Housatonic Valley Association – Be River Smart

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)



## BMP 11 - PET WASTE, WATERFOWL, AND LITTER MANAGEMENT

BMP 11 - PET WASTE, WATERFOWL, AND LITTER MANAGEMENT				
MAINTENANCE PROCEDURES     Remove and properly dispose of pet waste.				

#### **BMP 12 – WASTE MANAGEMENT**



#### **BMP 12 – WASTE MANAGEMENT**

#### DESCRIPTION

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff.

#### POLLUTION PREVENTION APPROACH

The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, re-use, and recycling; and preventing run-on and runoff.

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system to the maximum extent practicable.

#### SUGGESTED BEST MANAGEMENT PRACTICES

#### General

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Sweep and clean the storage area regularly. If it is paved, do not hose down the area to a storm drain.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses.

#### Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

#### Waste Collection

- Keep waste collection areas clean before contractor picks up.
- Inspect solid waste containers for structural damage or leaks regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Place waste containers under cover if possible.

#### **TARGETED FACILITIES AND OPERATIONS**

All City-Owned Facilities

#### **TARGETED CONSTITUENTS**

- Sediment
- **Nutrients**
- Trash
- Metals
- Oil & Grease
- **Organics**
- Low Dissolved Oxygen

#### NOTES / SPECIFIC PROCEDURES:

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)

#### **BMP 12 – WASTE MANAGEMENT**



#### **BMP 12 – WASTE MANAGEMENT**

- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container via inspections and signage. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc. may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.

#### Good Housekeeping

- Use the entire product before disposing of the container.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g. sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Stencil storm drains on the facility's property with prohibitive message regarding waste disposal.

#### Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site and label or mark them clearly.
- Store hazardous materials and wastes in covered containers protected from vandalism, and in compliance with fire and hazardous waste codes.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.

#### Run-on/Runoff Prevention

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent the waste materials from directly contacting rain.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene, or Hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

#### **INSPECTION PROCEDURES**

- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Check waste management areas for leaking containers or spills.

## **BMP 12 – WASTE MANAGEMENT**



BN	MP 12 – WASTE MANAGEMENT	
•	Repair leaking equipment including valves, lines, seals, or pumps promptly.	
MA	INTENANCE PROCEDURES	
•	Maintain equipment for material tracking program.	

#### **BMP 13 – BUILDING OPERATIONS**



#### **BMP 13 – BUILDING OPERATIONS**

#### **DESCRIPTION**

Typical building operations include cleaning operations such as outside pressure washing of buildup and repairs.

#### **POLLUTION PREVENTION APPROACH**

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system to the maximum extent practicable.

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a waste/water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.
- If soaps or detergents are not used, and the surrounding area is paved, wash water runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.
- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement. Ensure that this practice does not kill grass.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Clean paint brushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal. Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area

## TARGETED FACILITIES AND OPERATIONS

All City-Owned Facilities

#### **TARGETED CONSTITUENTS**

- Sediment
- Nutrients
- Trash
- Metals
- Oil & Grease
- Organics
- Low Dissolved Oxygen

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)



#### **BMP 13 – BUILDING OPERATIONS**

#### **BMP 13 – BUILDING OPERATIONS**

and enter a catch basin. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the
  water before discharging to a catch basin or off-site. In which case you
  should direct the water through hay bales and filter fabric or use other
  sediment filters or traps.
- Store toxic material under cover with secondary containment during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

#### **INSPECTION PROCEDURES**

 Sweep paved areas regularly to collect loose particles and wipe up spills with rags and other absorbent material immediately; do not hose down the area to a storm drain.



## **BMP 14 – OIL/WATER SEPARATORS**

#### **DESCRIPTION**

Oil/Water separators (OWS)/interceptors are important structural devices to prevent gasoline, oil, or sand from getting into the drainage systems. An OWS removes substances other than water before entering the sanitary sewer system. In the following places they are always required:

- Repair garages where motor vehicles are serviced and repaired, and where floor drainage is provided
- Commercial motor vehicle washing facilities
- Gasoline Stations with grease racks, grease pits, or wash racks
- Facilities which have oily and/or flammable waste because of manufacturing, storage, repair, or testing
- Public storage garages with floor drainage
- Any place where solid, oil, gasoline or other volatile liquids can enter the drainage system

#### **POLLUTION PREVENTION APPROACH**

Implement applicable suggested Best Management Practices to reduce the influx of pollutants to the stormwater drainage system to the maximum extent practicable.

#### SUGGESTED BEST MANAGEMENT PRACTICES

- Frequent sweeping of areas discharging to the separator, depending on
- Target cleaning for early Spring or late Fall.
- Use oil absorbent materials on any liquid spills, such as oil or hydraulic fluid leaks because most OWS systems are not meant to manage high concentration loads of fluids other than water
- The facility manager should maintain a log of cleaning activities. Information should include frequency of cleanings.
- It is important to remove sediments from garage floors that can have a high concentration of pollutants including metals and hydrocarbons. These sediments can clog downstream drainage systems and transport pollutants to nearby water bodies.

#### **INSPECTION PROCEDURES**

- Oil/Water Separators/interceptors should be inspected twice per year by a properly trained employee or third-party firm (best times are before the start and before the end of the rainy season).
- Weekly inspections of an OWS system should include the following:
  - Visually examine the area served by the OWS for evidence of spills or leaks.

## **TARGETED FACILITIES AND OPERATIONS**

- All City-Owned Facilities
- Street Rights-of-Way
- Disposal of Removed Solids

#### **TARGETED CONSTITUENTS**

- Sediment
- **Nutrients**
- Trash
- Metals
- Oil & Grease
- Organics
- Low Dissolved Oxygen

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or document priority areas, changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)



## **BMP 14 – OIL/WATER SEPARATORS**

- Inspect the point of discharge (i.e., sewer manhole) for evidence of petroleum bypassing the OWS.
- Inspect drains for any signs of unauthorized substances entering the OWS.
- Examine the OWS for signs of leaks or any malfunction.
- Quarterly inspections of an OWS should include the following:
  - Complete tasks noted as appropriate for daily and weekly inspection.
  - Complete the Quarterly OWS Inspection Checklist, attached, during the inspection.
  - Take the following measurements to benchmark function of the OWS:
    - Distance from rim of access cover to bottom of structure
    - Distance from rim of access cover to top of sludge layer
    - Depth of sludge layer (C = A B)
    - Distance from rim of access cover to the oil/water interface
    - Distance from rim of access cover to the top of the liquid surface
    - Depth of oil layer (F = D E)

#### **MAINTENANCE PROCEDURES**

Cleaning of the OWS is required when there has been a spill to the OWS that exceeds ten gallons of oil, one gallon of detergent or solvent, or any material prohibited by the owner of the sanitary sewer. Cleaning is also required when the levels of accumulated sludge and/or oil meet the manufacturer's recommended levels for cleaning. This will vary based on the manufacturer of the OWS. If the manufacturer's recommendations are unknown, the following guidelines are appropriate for determining when to clean:

- When sludge accumulates to 25% of the wetted height of the separator compartment; or
- When oil accumulates to 5% of the wetted height of the separator compartment; or
- When 75% of the retention capacity of the OWS is filled.

Cleaning should be performed a minimum of once per year. When cleaning is required, it shall be performed by licensed OWS maintenance companies. Materials removed from the OWS must be disposed of in accordance with Massachusetts Hazardous Waste Regulations, 310 CMR 30.00.



BN	IP 14 – OIL/WATER SEPARATORS	
•	Drains and grates should be free of debris or sediments. Dripping pans should be used under vehicles or spigots. Spill absorbent material should be ready for use. Floors should be kept clean and spill materials should be cleaned up in a timely manner.	

# Oil/Water Separator (OWS) Quarterly Inspection Checklist

Facility:			
OWS Location:			
Inspected By:			
Date:			
	Are there any signs of spills or leaks in the general area?	Yes □	No □
Visual Inspections	Is there any evidence of petroleum bypassing the OWS?	Yes □	No □
Visual Inspections	Are there any unauthorized substances entering the OWS?	Yes □	No □
	Does the OWS exhibit any signs of leaks or malfunctions?	Yes □	No □
Comments:		l	
If you answered "ves" to a	iny of the above questions, further inspection, repair, and	l/or cleanin	ig may be

necessary.



	A	Distance from rim of access cover to bottom of structure	
	В	Distance from rim of access cover to top of sludge layer	
Measurements	C = A - B	Depth of sludge layer	
ivieasurements	D	Distance from rim of access cover to the oil/water interface	
	E	Distance from rim of access cover to the top of the liquid surface	
	F = D - E	Depth of oil layer	

If the values for "C" and/or "F" are greater than those in the manufacturer's recommendations, the OWS must be cleaned by a licensed OWS maintenance company.

### **BMP 15 - BIORETENTION**



#### **BMP 15 - BIORETENTION**

#### **DESCRIPTION**

Bio-retention areas allow for runoff to be filtered through a soil medium that removes different pollutants before the runoff enters the stormwater drainage system. The Bio-retention facility needs to be maintained frequently for the first year and then annually after that.

#### POLLUTION PREVENTION APPROACH

The suggested Best Management Practices should be used to reduce the influx of pollutants into the storm water drainage system and increase the longevity of the bio-retention basin.

#### SUGGESTED BEST MANAGEMENT PRACTICES

- It is recommended that the area be cleaned once in early Spring and once in late Fall.
- The area should be cleaned with hand tools, rakes, shovels, and light construction equipment. Vehicles should not be driven on the bioretention area.
- All damage should be repaired and mulch areas that are exposed should be fixed.
- Facilities and personal in-charge of the bio-retention area should keep inspectional logs and cleaning activity logs.

#### **INSPECTION PROCEDURES**

- Bio-retention areas should be inspected after every rainfall over a half inch of rainfall for the first year.
- Inspection of the bio-retention area should be daily for the first month to ensure the area is taking properly.
- The bio-retention area should be inspected once a month during the growing season and once in the beginning of Spring and at the end of Fall.

#### **MAINTENANCE PROCEDURES**

Bio-retention areas should be kept free of debris and weeds to ensure a properly working infiltration and stormwater management area. Routine maintenance should be done year-round and does not require much effort if area is well kept.

#### After planting:

## TARGETED FACILITIES AND OPERATIONS

- All City-Owned property
- City-owned parking lots with
- Street Rights-of-Way

#### **TARGETED CONSTITUENTS**

- Sediment
- Nutrients
- Trash
- Metals
- Oil & Grease
- Organics
- Low Dissolved Oxygen

#### REFERENCE

- University of Minnesota-Rain gardens and Maintenance
- "Vermont Rain Garden Manual"
- Housatonic Valley
   Association Be River
   Smart

#### **NOTES / SPECIFIC PROCEDURES:**

(List identified problem or priority areas, document changes in protocol, or unique conditions along with date(s) of implementation and personnel initials)

May 2023

### **BMP 15 - BIORETENTION**



#### **BMP 15 - BIORETENTION**

- The area should be watered daily for two weeks unless significant rainfall has occurred.
- Inspect the bio-retention area for any signs of erosion.
- Re-mulch any area where bare soil has become exposed or mulch layer has been significantly reduced.
- If necessary, use stones to stabilize drainage paths within the bioretention area. If it is possible use a wetland grass mixture if the area will hold the seeds.

#### After first rainfall:

- The bio-retention area should be free of standing water within 72-hours of rainfall. No standing water should be visible within the bio-retention area. If the area has not drained, continue to monitor; soil remediation or an improved under drain system may be needed.
- Ensure that mulch has not moved and settled in clumps.
- If applicable, inspect all inlets and outlet structure to ensure that runoff has drained properly with the basin.

#### One month of planting:

- Inspect all plants to ensure that they are free of pest and diseases; do not use any toxic pesticide or other toxic methods to remove pest and diseases. The toxic substance will enter the ground and the storm sewer system.
- Make repairs to all areas in and around the bio-retention area that appear to be worn down.
- Add mulch to areas that are bare or for which insufficient mulch coverage is observed.
- Remove any weeds from the area, ensure that all root systems from the weeds have been destroyed. Do not us any toxic substances to remove weeds.

#### The following seasons:

- Every 6 months or in spring and fall, whichever comes first, add 1" of mulch
- Once every 2 to 3 years, in the spring, apply a new 3" layer of mulch in the entire bio-retention garden.
- If plants are showing signs of pest, disease or are growing poorly, remove the plant(s) and replace. Inspect the plants surrounding the area to ensure that there is not a greater problem.
- During times of extended drought look for features of stress (wilting, spotted brown leaves, loss of leaves, poor plant health, etc.)

## **BMP 15 - BIORETENTION**



## **BMP 15 - BIORETENTION**

- Area should be watered, when needed, in the early morning when maximum absorption takes place.
- Prune excess growth annually or more often. Trimmed material may be recycled in with the mulch.
- Weed the area regularly; however the area should not be mowed.

## BMP 16 – STORMWATER, SANITARY MAINTENANCE & WATER LINE REPAIR



## BMP 16 – STORMWATER, SANITARY MAINTENANCE & WATER LINE REPAIR

#### **DESCRIPTION**

Some operation and maintenance activities of public utilities and accidents can result in the discharge of pollutants that can pose a threat to both human health and the quality of receiving waters if they enter the storm drainage system. Sewage incident response and investigation may involve a coordinated effort between staff from a number of different departments/agencies. Storm drainage systems need to be cleaned regularly. Routine cleaning reduces the amount of pollutants, trash, and debris both in the storm drainage system and in receiving waters.

#### POLLUTION PREVENTION APPROACH

Inspect potential non-stormwater discharge flow paths and clear/cleanup any debris or pollutants found (i.e. remove trash, leaves, sediment, and wipe up liquids, including oil spills).

#### **SUGGESTED BEST MANAGEMENT PRACTICES**

#### **Stormwater Drainage Maintenance**

- Cleaning the storm drain by flushing is more successful for pipes smaller than 36 inches in diameter.
- A water source is necessary for cleaning. The wastewater generated from storm line cleaning must be collected and treated once flushed through the system.
- Depending on the condition of the generated wastewater, it may or may not be disposed to sanitary sewer systems. The efficiency of storm system flushing decreases when the length of sewer line being cleaned exceeds 700 feet.

#### **Sanitary Sewer Maintenance**

- Clean sewer lines on a regular basis to remove grease, grit, and other debris that may lead to sewer backups.
- Establish routine maintenance program. Cleaning should be conducted at an established minimum frequency and more frequently for problem areas such as restaurants that are identified.
- Cleaning activities may require removal of tree roots and other identified obstructions.

#### **TARGETED FACILITIES AND OPERATIONS**

- All City-Owned Facilities
- Street Rights-of-Way

#### **TARGETED CONSTITUENTS**

- Sediment
- **Nutrients**
- Trash
- Metals
- Oil & Grease
- **Organics**
- Low Dissolved Oxygen

## BMP 16 – STORMWATER, SANITARY MAINTENANCE & WATER LINE REPAIR



### BMP 16 – STORMWATER, SANITARY MAINTENANCE & WATER LINE REPAIR

- During routine maintenance and inspection note the condition of sanitary sewer structures and identify areas that need repair or maintenance. Items to note may include the following:
  - Cracked/deteriorating pipes
  - Leaking joints/seals at manhole
  - Frequent line plugs
  - Line generally flows at or near capacity
  - Suspected infiltration or exfiltration
- Prioritize repairs based on the nature and severity of the problem.
   Immediate clearing of blockage or repair is required where an overflow is currently occurring or for urgent problems that may cause an imminent overflow (e.g. pump station failures, sewer line ruptures, sewer line blockages). These repairs may be temporary until scheduled or capital improvements can be completed.
- Review previous sewer maintenance records to help identify "hot spots" or areas with frequent maintenance problems and locations of potential system failure.

#### **Spills and Overflows**

- Establish lead department/agency responsible for spill response and containment. Provide coordination within departments.
- Record required information at the spill site & contact Mass DEP.
- Perform field tests as necessary to determine the source of the spill.
- Develop notification procedures regarding spill reporting.
- When a spill, leak, and/or overflow occurs and when disinfecting a sewage contaminated area, take every effort to ensure that the sewage, disinfectant and/or sewage treated with the disinfectant is not discharged to the storm drainage system or receiving waters.
   Methods may include:
  - Blocking storm drain inlets and catch basins
  - Containing and diverting sewage and disinfectant away from open channels and other storm drain fixtures (using sandbags, inflatable dams, etc.)
  - Removing material with vacuum equipment

#### **Septic Systems**

© 2023 Kleinfelder

• Document City's septic systems on a map.

## BMP 16 – STORMWATER, SANITARY MAINTENANCE & WATER LINE REPAIR



## BMP 16 – STORMWATER, SANITARY MAINTENANCE & WATER LINE REPAIR

#### **Planned Water Line Maintenance**

- Discharge generated wastewater to a sanitary system with approval.
- Discharge to the storm drainage rain system using applicable pollution control measures. (Only available to clean water discharges such as water main/ water storage tank/water hydrant flushing).
- Discharge to the storm drainage rain system using applicable pollution control measures. (Only available to clean water discharges such as water main/ water storage tank/water hydrant flushing).
- If water is discharged to a storm drain, control measures must be
  put in place to control potential pollutants (i.e. sediment, chlorine,
  etc.) such as silt fences, gravel and wire mesh filter, or wooden weir
  and fabric.
- General Design considerations for inlet protection devices include the following:
  - The device should be constructed such that cleaning and disposal of trapped sediment is made easy, while minimizing interference with discharge activities.
  - Devices should be constructed so that any standing water resulting from the discharge will not cause excessive inconvenience or flooding/damage to adjacent land or structures.
- The effectiveness of control devices must be monitored during the discharge period and any necessary repairs or modifications made.

#### **Unplanned Water Line Maintenance**

- Stop the discharge as quickly as possible.
- Inspect flow path of the discharged water:
  - Identify erodible areas which may need to be repaired or protected during subsequent repairs or corrective actions.
  - Identify the potential for pollutants to be washed into the waterway.
- If repairs or corrective action will cause additional discharges of water, select the appropriate procedures for erosion control,

# BMP 16 – STORMWATER, SANITARY MAINTENANCE & WATER LINE REPAIR



## BMP 16 – STORMWATER, SANITARY MAINTENANCE & WATER LINE REPAIR

chlorine residual, turbidity, and chemical additives. Prevent potential pollutants from entering the flow path.

#### **Inspection Procedures**

- Inspect for root infiltration. Tree roots are a major cause of backups.
- Inspect for water inflow/infiltration. Rainwater entering the sewer pipe can contribute to sanitary sewer overflows.
- Inspect for solids. Typical solids that buildup in the pipe and cause backups are grease, dirt, bones, tampons, paper towels, diapers, broken dishware, garbage, concrete, and debris.
- Inspect for structural defects in pipes and manholes Sags in the line, cracks, holes, protruding laterals, misaligned pipe, and offset joints are all possible causes of backups.

#### **Maintenance Procedures**

- Repair structural defects in pipes and manholes.
- Refurbish portions of the utility lines periodically.
- All maintenance should be documented in City systems.



## APPENDIX A FACILITIES INVENTORY

Project 20233959.001A May 2023

## FACILITY, VEHICLE, AND EQUIPMENT INVENTORY



#### **APPENDIX A: FACILITIES INVENTORY**

Facility Name	Address	Department	Applicable BMPs
Fire Station #6	640 Homestead Avenue	Fire Department	BMP 3, BMP 4, BMP 5, BMP 7, BMP 8, BMP 9, BMP 10, BMP 12, BMP 13, BMP 14
Jones Ferry Pump Station	2 Jones Ferry Road	Department of Public Works	BMP 3, BMP 4, BMP 5, BMP 6, BMP 9, BMP 10, BMP 12, BMP 13
Boathouse	8 Oscar Street	Department of Public Works	BMP 3, BMP 4, BMP 5, BMP 7, BMP 8, BMP 10, BMP 11, BMP 12, BMP
DPW Barn/Garage	63 N. Canal Street	Department of Public Works	BMP 3, BMP 4, BMP 5, BMP 6, BMP 7, BMP 8, BMP 9, BMP 10, BMP 12, BMP 13, BMP 14
Water Tanks		Holyoke Water Works	BMP 3, BMP 4, BMP 5, BMP 9, BMP 10, BMP 13
West Heights Pump Station	555 Homestead Avenue	Holyoke Water Works	BMP 3, BMP 4, BMP 5, BMP 6, BMP 9, BMP 10, BMP 12, BMP 13
Pump Station and Upland Road Maintenance Garage	45 Upland Road	Holyoke Water Works	BMP3, BMP 4, BMP 5, BMP 6, BMP 7, BMP 8, BMP 9, BMP 10, BMP 12, BMP 13, BMP 14
Maurice A. Donahue School	210 Whiting Farms Road	Holyoke Public Schools	BMP 1, BMP 2, BMP 3, BMP 4, BMP 5, BMP 9, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
McMahon School	75 Kane Road	Holyoke Public Schools	BMP 1, BMP 2, BMP 3, BMP 4, BMP 5, BMP 9, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Morgan School	496 S Bridge Street	Holyoke Public Schools	BMP 1, BMP 2, BMP 3, BMP 4, BMP 5, BMP 9, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Marcella R. Kelly School	216 West Street	Holyoke Public Schools	BMP 1, BMP 2, BMP 3, BMP 4, BMP 5, BMP 9, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Sullivan School and Park	400 Jarvis Avenue	Holyoke Public Schools	BMP 1, BMP 2, BMP 3, BMP 4, BMP 5, BMP 9, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15

## FACILITY, VEHICLE, AND EQUIPMENT INVENTORY



Facility Name	Address	Department	Applicable BMPs
Ingleside Park	Between 43 and 63 Arthur Street	Parks and Recreation	BMP 1, BMP 2, BMP 3, BMP 4, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Mayer Field	Westfield Road and Memorial Drive	Parks and Recreation	BMP 1, BMP 2, BMP 3, BMP 4, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Anniversary Park	1575 Northampton Street	Parks and Recreation	BMP 1, BMP 2, BMP 3, BMP 4, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Kennedy Park	Lincoln Street and Waldo Street intersection	Parks and Recreation	BMP 1, BMP 2, BMP 3, BMP 4, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Ely Court	Center Street and Lyman Street	Parks and Recreation	BMP 1, BMP 2, BMP 3, BMP 4, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Pina Park	Center Street and E Dwight Street	Parks and Recreation	BMP 1, BMP 2, BMP 3, BMP 4, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Jackson Courts	Jackson Street and Canal Street	Parks and Recreation	BMP 1, BMP 2, BMP 3, BMP 4, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Carlos Vega Park	Hamilton Street and S East Street	Parks and Recreation	BMP 1, BMP 2, BMP 3, BMP 4, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Valley Arena Park	S Bridge Street and Hamilton Street	Parks and Recreation	BMP 1, BMP 2, BMP 3, BMP 4, BMP 10, BMP 11, BMP 12, BMP 13, BMP 15
Train Station	74 Main Street	Department of Public Works	BMP 2, BMP 3, BMP 4, BMP 10, BMP 11, BMP 12, BMP 15

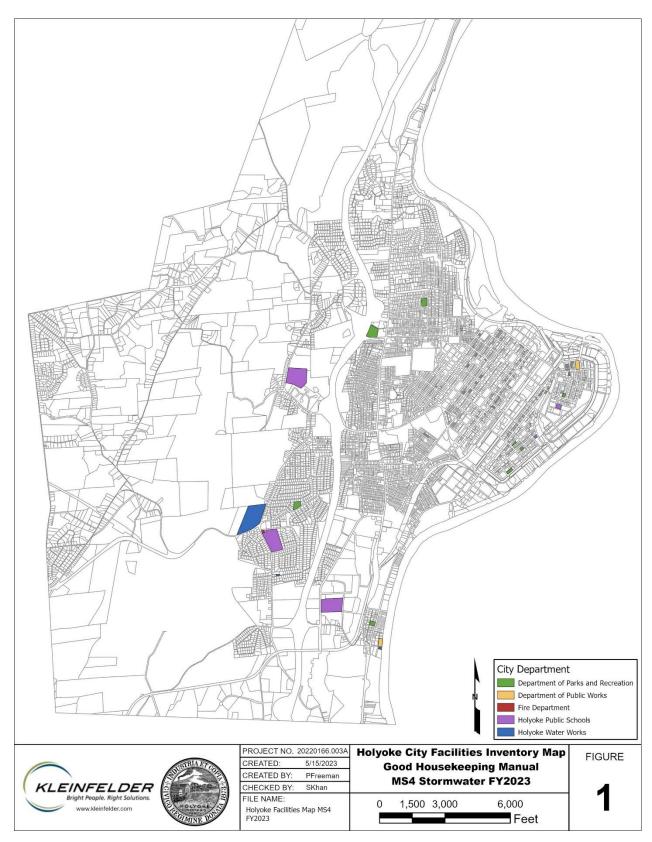


## APPENDIX B FACILITIES MAP FIGURE

Project 20233959.001A May 2023



#### **APPENDIX B: FACILITIES MAP FIGURE**





# APPENDIX C VEHICLE AND EQUIPMENT INVENTORY

Project 20233959.001A May 2023

## FACILITY, VEHICLE, AND EQUIPMENT INVENTORY



## APPENDIX C: VEHICLE AND EQUIPMENT INVENTORY

Manufacturer	Model	Description	Department	Storage Location	Number of Items



# APPENDIX D FACILITY INSPECTION LOG

\_\_\_\_\_

Project 20233959.001A May 2023

## **FACILITY INSPECTION LOG – STORMWATER POLLUTION PREVENTION**



#### **APPENDIX D: FACILITY INSPECTION LOG**

General Information						
Facility Name						
Date of Inspection		Start/End Time				
Inspector's Name(s)						
Inspector's Title(s)						
Inspector's Contact Information						
Weather Information						
Weather at time of this inspection?						
☐ Clear ☐ Cloudy ☐ Rain ☐ Sleet ☐ Fog ☐ Snow ☐ High Winds						
☐ Other:	Temperature:					
Have any previously unidentified discharges of pollutants occurred since the last inspection? ☐Yes ☐No						
If yes, describe:						
Are there any discharges occurring at the time of inspection? □Yes □No						
If yes, describe:						

#### **FACILITY INSPECTION LOG – STORMWATER POLLUTION PREVENTION**



**Control Measures:** Number the structural storm water control measures on your site map and list them below (add as many control measures as are implemented on-site). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required control measures at your facility. Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.

		Control	If No, In Need of	Corrective Action Needed and Notes
	Structural Control	Measure is	Maintenance,	
	Measure	Operating	Repair, or	(identify needed maintenance and repairs, or any
		Effectively?	Replacement?	failed control measures that need replacement)
1		□Yes □No	☐ Maintenance	
			D. Damain	
			☐ Repair	
			☐ Replacement	
2		□Yes □No	☐ Maintenance	
			☐ Repair	
			<b>—</b> Керап	
			☐ Replacement	
3		□Yes □No	☐ Maintenance	
			☐ Repair	
			■ Kepuli	
			☐ Replacement	
		D		
4		□Yes □No	☐ Maintenance	
			☐ Repair	
			☐ Replacement	
5		□Yes □No	☐ Maintenance	
			_	
			☐ Repair	
			☐ Replacement	
6		□Yes □No	☐ Maintenance	
			☐ Repair	
			☐ Replacement	
7		DVoc DNo	□ Maintananas	
/		□Yes □No	☐ Maintenance	

## **FACILITY INSPECTION LOG – STORMWATER POLLUTION PREVENTION**



	Structural Control	Control Measure is	If No, In Need of Maintenance,	Corrective Action Needed and Notes
	Measure	Operating	Repair, or	(identify needed maintenance and repairs, or any
		Effectively?	Replacement?	failed control measures that need replacement)
			☐ Repair	
			☐ Replacement	
8		□Yes □No	☐ Maintenance	
			☐ Repair	
			☐ Replacement	
9		□Yes □No	☐ Maintenance	
			☐ Repair	
			☐ Replacement	
10		□Yes □No	☐ Maintenance	
			☐ Repair	
			☐ Replacement	

# **FACILITY INSPECTION LOG – STORMWATER POLLUTION PREVENTION**



# Areas of Materials or Activities exposed to Stormwater

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
1	Material loading/unloading and storage areas	□Yes □No □ N/A	□Yes □No	
2	Equipment operations and maintenance areas	□Yes □No □ N/A	□Yes □No	
3	Fueling areas	□Yes □No □ N/A	□Yes □No	
4	Outdoor vehicle and equipment washing areas	□Yes □No □ N/A	□Yes □No	
5	Waste handling and disposal areas	□Yes □No □ N/A	□Yes □No	
6	Erodible areas/construction	□Yes □No □ N/A	□Yes □No	
7	Non-storm water/ illicit connections	□Yes □No □ N/A	□Yes □No	

# **FACILITY INSPECTION LOG – STORMWATER POLLUTION PREVENTION**



	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
8	Salt storage piles or pile containing salt	□Yes □No □ N/A	□Yes □No	
9	Dust generation and vehicle tracking	□Yes □No □ N/A	□Yes □No	
10	(Other)	□Yes □No □ N/A	□Yes □No	

# **FACILITY INSPECTION LOG – STORMWATER POLLUTION PREVENTION**



Non-Compliance. Describe any incidente of non-compliance charmed and not described above.
<b>Non-Compliance:</b> Describe any incidents of non-compliance observed and not described above:
Additional Control Management, Describe any additional control management and data comply with the paymit requirements.
<b>Additional Control Measures:</b> Describe any additional control measures needed to comply with the permit requirements:
Nickey Health and for any additional articles from the formation
<b>Notes:</b> Use this space for any additional notes or observations from the inspection:

# **APPENDIX G**

# CITY ORDINANCE, REGULATION, DESIGN GUIDELINE REVIEW

\_\_\_\_\_



#### MEMORANDUM

TO: Kris Baker, P.E. City of Holyoke

FROM: Jeffrey Ling, Kleinfelder

DATE: May 10, 2023

SUBJECT: City Ordinance, Regulation, Design Guideline Review

CC: Peter Varga, Pam Westgate, Kleinfelder

The City of Holyoke is required by Consent Decree term 19.b.ii. to adopt or amend ordinances to require that New Development and Redevelopment stormwater management BMPs be optimized for Nitrogen removal. In addition to the remedial terms set by the Consent Decree, the City of Holyoke is required to continue to administer its Stormwater Management Program in conformance with requirements of the Massachusetts General Permit for stormwater discharges from Small Municipal Separate Storm Sewer Systems (MS4) as per Consent Decree term 67. As an element of that program, the City is required to evaluate current street design and parking lot guidelines (and other local requirements) that affect the creation of impervious surface cover. Per the language of the permit (Section 2.3.6 (b)):

"This assessment shall be used to provide information to allow the permittee to determine if changes to design standards for streets and parking lots can be made to support low impact design options. If the assessment indicates that changes can be made, the assessment shall include recommendations and proposed schedules to incorporate policies and standards into relevant documents and procedures to minimize impervious cover attributable to parking areas and street designs."

Upon completion of the evaluation, the City must implement the recommendations in accordance with a City-set schedule.

Similarly, under Section 2.3.6(c), the City is required to assess existing regulations to determine the feasibility of implementing allowable Green Infrastructure when appropriate site conditions exist. These practices, which also address the requirements to include Nitrogen-removing BMPs, specifically include:

- Green roofs;
- Infiltration practices such as rain gardens, porous and pervious pavements, and other designs to manage stormwater using landscaping and structured or augmented soils; and
- Water harvesting devices such as rain barrels and cisterns, and the use of stormwater for non-potable uses.



# **Summary of PVPC Work**

In 2021 under the 2021 MVP Action Grant, Pioneer Valley Planning Commission (PVPC) completed a review of the City's ordinances and regulations in relation to climate resiliency and all topics relevant to MS4 permit requirements. Their review specifically covered the following topics:

- Illicit Discharge Detection & Elimination (IDDE),
- Construction Erosion & Sediment Controls (ESC),
- Post-Development SW Management Standards,
- Low Impact Development (LID) & Green Infrastructure,
- And Road/Parking Lot Design Guidelines.

PVPC held several workshops with the Regulatory Review Advisory Working Group (created specifically by the City to collaborate with PVPC) and individual meetings with various City departments to draft regulatory edits and supplementary documents that would improve stormwater management in the context of climate resiliency. Their analysis and recommendations fully satisfy the permit year 4 requirements (Section 2.3.6(b)) & (Section 2.3.6(c)). However, their recommendations have yet to be implemented except for recommendations to the stormwater regulations (PVPC Attachment 3). Suggested edits are summarized below:

- Holyoke Ordinances Ch. 38 Art. IV (PVPC Memo Attachment 1)
  - o Modifying and conforming definitions for ESC, LID, and new/re-development.
  - o Conforming site requirements for applicability for ESC.
  - o Including regulation language regarding construction wastes, site plan review, construction site inspection, and enforcement.
  - Conforming applicability/exemption conditions with existing regulations for new and redevelopment.
- Regulations for Stormwater Management and Erosion and Sediment Control (PVPC Memo Attachment 3) – the following recommendations have been implemented:
  - o Include LID site design to infiltrate, manage, and treat runoff.
  - Retain open space and mature trees, reduce impervious surfaces from streets, parking lots, and sidewalks.
  - o Increase requirements for pre-development plan submissions for ESC and post-development performance.
  - Creating standards around soil compaction on construction sites.
  - o Larger emphasis on LID techniques and site design, and
  - o Final construction inspection of stormwater elements before and after installation.
- Subdivision Rules and Regulations (PVPC Memo Attachment 7)
  - o Integrate LID at project initiation through plan review checklist.
  - Adoption of LID standards in Right of Way (ROW) and Street Design, integrate green and complete street philosophies.
  - Explicitly permit LID approaches and make sure draining related regulations reference the SW Management Ordinance and Regulations.
- Zoning Ordinance (PVPC Memo Attachment 9)



- Require landscaping standards that promote infiltration in parking lots and vegetation requirements that limit compaction of native soils and removal of native vegetation.
- Reduce impervious area of parking lots through reduction of required parking spots, reducing stall size, encouraging porous materials.
- Increase requirements for site plan review process to promote thinking about soils, landscaping buffers, and the design standards stated in subsection 10.1.7.2 Landscape and Open Space Design Standards.

In addition to recommended edits, PVPC also supplied the City with draft IDDE Ordinance language, floodplain ordinance edits, Construction site inspection forms, and pre-development site review checklists for both Subdivision Regulations and the Zoning Ordinance.

## **Priority List**

KLF completed an independent review of ordinances and regulations for compliance with the terms set by the Consent Decree. KLF also completed a streets/parking lots and LID/GI review and prioritization list by design criteria or topic (Appendix A). KLF's analysis was used to prioritize PVPC's suggested revisions and other documents that were previously provided to the City.

Please note that priority level was assigned based off the overall compliance in relation to the CD, and the 2016 MS4 over the improvements towards street/parking lots design guidelines and GI implementation. PVPC attachments listed as "High" priority level are ordinances/regulations that should be completed immediately as they contain updates that pertain to activities required by the CD or past permit deadlines. PVPC attachments listed as "Medium Priority" are ordinances/regulations that were identified to be lacking or inhibiting LID practices in relation to Streets/Parking lots/GI. PVPC Attachment 12 was excluded from this prioritization as it is a high-level analysis of streets/parking lots design guidelines. The prioritized items are shown in the table below:



Priority	Document	PVPC	Comments
		Attachment	
High	Draft IDDE Ordinance/ Regulation	2	Would recommend that this be done as soon as possible to give enforcement powers to the City for illicit connections and IDDE related activities listed in the CD. Can maybe ratify this as a regulation or edit to the current regulation for quickest implementation. If passed as a regulation, would also recommend codifying it with an edit/addition to the Chapter 38 Ordinance.
Medium	Holyoke Ordinances Ch. 38	1	There is a gap in ESC regulatory language within the ordinance as it lacks definitions of erosion terms, it is suggested to conform the definitions within the ordinance to match the updated Regulations for Stormwater Management and Erosion and Sediment Control.  The suggested changes match language around new development and redevelopment applicability and exceptions criteria which is a yr. 3 Permit requirement within MCM 5. Additionally, new language is
			provided for LID definitions to explicitly promote things like porous pavement, green roofs ,etc.
Medium	Draft Erosion and Sediment Control Inspection Form	4	If there is not already a form of documentation for site inspection in use, the City should begin to track inspections and enforcement actions with a form like this for reporting purposes for the annual report and enforcement of Regulations for Stormwater Management and Erosion and Sediment Control.
Medium	LID Checklist for Pre- application Meeting	5	Checklist for pre-construction plans for developers, the City (planning, conservation commission, and city engineer). Covers general site natural resources assessment, soil types, and impervious area drainage. Enforces the post construction requirements on development in the planning phase.
Medium	Zoning Ordinance	8 & 9	Changes in this document effectively decrease parking (impervious) area requirements and increase requirements for landscaping requirements that promote infiltration. Additionally increases requirements for site plan reviews to consider soil types, open space design, and LID techniques. Would effectively bolster the update made in the Regulations for Stormwater Management and Erosion and Sediment Control.
Medium	Subdivision Rules and Regulations	6 & 7	Further integration of LID into pre-construction checklists and discussions. It's most closely related to the street design guidelines and LID features such as allowing bio-swales and curb cuts.
Low	Draft Guidance on Awarding Wetlands Protection Ordinance	11	Guidance document on pre-construction meetings for developers about the following LID and GI features: Bioretention systems, green roofs, porous paving, urban tree canopy. Provides talking points and application considerations.
Low	Floodplain Ordinance	10	Updates, mostly deletions to previous references, to accommodate new Flood Insurance Rate Maps (FIRMs) are updated (expected to be in 2023).



#### **APPENDIX A – SEPARATE KLF ORDINANCE ANALYSIS**

The purpose of the following analysis is to determine if City ordinances meet the remedial terms of the Consent Decree and if the street/parking Low Impact Design (LID) practices and Green Infrastructure (GI) practices are allowed. This analysis identifies what hinders implementation of the practice if any exist. Thereafter, the City is responsible to determine what updates are feasible to ordinances or regulations and establish an implementation schedule. It is critical that all recommendations for ordinances, regulations, and design guidelines agree with the broader context of the City's development vision and master planning goals.

The City will be responsible for reporting on the status of these assessments including any planned or completed changes to local regulations and ordinances in annual reports which are a required submittal to EPA and the Massachusetts Department of Environmental Protection. This Technical Memorandum documents the approach, results, and recommendations of the required evaluations.

## Methodology

To complete the analyses, the following City ordinance and regulation documents were reviewed:

- Rules and Regulations Governing the Subdivision of Land in the City of Holyoke (referred to as Subdivision Rules and Regulation or 'SRR')
- The City of Holyoke Zoning Ordinance (referred to as 'Zoning Ordinance')
- Holyoke Stormwater Authority Stormwater Regulations (referred to as 'Stormwater Regulations')
- The City of Holyoke Code of Ordinances (referred to as 'Code of Ordinances')
- City Driveway Standards for Apron/Sidewalk Construction in the City ROW (referred to as 'Driveway Standards')

To gain a broader context of City initiatives related to development, complete or green streets, and impervious pavement reduction, the following documents were reviewed:

- The Holyoke Master Plan (referred to as 'Master Plan')
- The City of Holyoke Open Space and Recreation Plan (referred to as 'OSRP')
- Municipal Vulnerability Preparedness (MVP) Community Resilience Building Workshop Summary (referred to as 'MVP Summary')
- The City of Holyoke Impervious Surface Mapping for Resilience and Implementation (referred to as 'Impervious Area Story Map')
- Holyoke Green Streets (2017) Prepared for the Pioneer Valley Planning Commission (PVPC) & Holyoke by The Conway School (referred to as 'Green Streets Guidebook')

The matrix attached to this Technical Memorandum (Attachment 1) is adapted from the Massachusetts Audubon-created Analysis Tool for Local Land Use Regulations found on the EPA's website (Stormwater Tools in New England | US EPA). The adapted matrix provides grading criteria by design factor for



ordinances, design guidelines, and regulations with regards to improved stormwater management (related to water quality or water quantity). The matrix provides examples of 'conventional', 'better', and 'best' regulation/ordinances/design guidelines.

The analysis was completed by reviewing relevant sections of the cited reference documents to determine where, or if, pertinent criteria currently exist in the City's regulations as a basis for comparison to recommended best practices. Existing practices that were determined to be less than optimum based on the matrix criteria were flagged for further consideration. If the City had no current regulation addressing the design factor, this was noted. Note that the lack of language specifically allowing a particular best practice was deemed to not hinder such practices. In addition to the analysis done to satisfy the Consent Decree and MS4 Permit Year 4 requirements (streets, parking lots, and green infrastructure), a high-level analysis was done identifying ordinances with regards to 2016 MS4 Permit MCM 4 construction erosion and sedimentation control ordinance requirements.

#### **Analysis and Recommendations**

The analysis summary is categorized into the following tables:

- Consent Decree, MCM 4 Construction Erosion & Sedimentation Control
- Street Design and Parking Lot Guidelines
- Green Infrastructure

Relevant regulations and guidelines are cited as necessary. Consent Decree terms and MCM 4 ordinances were reviewed for compliance with the Consent Decree and the 2016 MS4 Permit. Street Design, Parking Lot, and Green Infrastructure regulations and guidelines are rated from conventional, better, and best practices based on the criteria from the matrix in Attachment 1. Current regulations, hinderances, and recommendations are discussed for each design factor.

Consent Decree-Specific, MCM 4 Ordinances: Summary of Findings

Section 5.01 a) v. of the Stormwater Regulations satisfy the remedial terms of the Consent Decree. Current City regulations clearly state that structural BMPs in new development and redevelopment (disturbing an acre or more) must be optimized for Nitrogen removal to satisfy the Long Island Nitrogen TMDL. Additionally, the Stormwater Regulations satisfy the other permit year 3 requirements: requiring LID site planning when feasible, setting design standards as stringent as the 2008 MA Handbook for new development and redevelopment (MCM5). This analysis also contains a high-level review of ordinances related to Phosphorus removal standards for structural BMPs, construction erosion and sediment control. Regulations pertaining to both subjects were found to be consistent with the permit requirements.



		Compliant	
Factor	Regulation Source	(Y/N)	Discussion
Nitrogen	Stormwater Regulations 5.01 a) v.	Y	<ul> <li>Current design standards:</li> <li>Stormwater BMPs must be optimized for nitrogen removal for sites that will result in 5000 sq. ft. of impervious area or any land disturbance that disturbs one or more acres</li> <li>Optimization guidance is provided by 2016 MS4 permit appendix H or appropriate EPA Region 1 or federally approved state tool for Nitrogen removal.</li> <li>Matches intent of the Consent Decree Term</li> <li>Current language allows for flexibility in looking for a guidance document Hinderances:</li> <li>The optimization guidance referenced does not exist, Nitrogen removal estimates for structural BMPs are located within Attachment 3 to Appendix F of the 2016 MS4 Permit Recommendation:</li> <li>Would recommend updating the language to reference Appendix F Attachment 3 which has methods of calculating Nitrogen and Phosphorous removal anyway</li> </ul>
Phosphorus	Stormwater Regulations 5.01 a) iv.	Υ	<ul> <li>Current standards: <ul> <li>New development must remove 90% of TSS and 60% of TP for sites that will result in 5000 sq. ft. of impervious area or any land disturbance that impacts one or more acre</li> <li>Redevelopment must remove 80% of TSS and 50% of TP for sites that will result in 5000 sq. ft. of impervious area or any land disturbance that impacts one or more acre</li> <li>Hinderances: <ul> <li>(N/A)</li> </ul> </li> <li>Recommendation:</li> <li>Consistent with permit requirements for new development and redevelopment, no recommendations</li> </ul> </li> </ul>
Construction Erosion and Sedimentation Plan	Zoning Ordinance 10.1.5.7; Stormwater Regulations 4.02 a. xvii.3.; 5.01 a) i.; 5.01 a) x. 5.01 a) xi.; 5.03 a) iv.; Code of Ordinances Sec. 38-33 to 38-42	Υ	<ul> <li>Current Ordinance/Regulations:         <ul> <li>The site SWMP must contain erosion and sedimentation control narrative covering construction wastes streams as well for construction activities in developments that will result in 5000 sq. ft. of impervious area or any land disturbances that impacts one or more acre</li> <li>Performance standards require developments that will result in 5000 sq. ft. of impervious area or any land disturbances that impacts one or more acre to control construction related impacts Hinderances:</li></ul></li></ul>



		Compliant	
Factor	Regulation Source	(Y/N)	Discussion
			- Consistent with permit requirements for construction sites, no recommendations



### Street Design and Parking Lot Guidelines: Summary of Findings

Street design and parking lot standards and guidelines are detailed mostly in the SRR and the Zoning Ordinance documents. References to relevant by-laws and regulations are made for each design element or practice. Regulations that hinder best practices are called out. Refer to Attachment 1 for evaluation criteria and detailed matrices. The following summary of findings will discuss relevant street and parking lot design guidelines that are related to decreasing impervious area or incorporating low impact designs (LID).

Current regulations are graded "worse than conventional," "conventional," "better," and "best" to describe the level of which they promote and allow LID features for streets and parking lots. "Worse than conventional" regulations explicitly or inexplicitly impede or prevent implementation of LID practices. "Conventional" regulations follow general historic practices that do not address stormwater LID practices. They typically do not impede the use of LID practices but can hinder LID. "Better" guidelines offer flexibility and allow implementation of stormwater LID practices. "Best" guidelines explicitly encourage and promote LID features and go beyond NPDES minimum requirements. This can include incentivizing with Stormwater Utility credits or development opportunities. Criteria for design factors were taken from an EPA guidance/sample document on the matter. Full criteria definitions are detailed in Attachment 1.



Factor	Regulation Source	Rating	Discussion
Street Location	Code of Ordinances Sec. 78-58; SRR 6.2.1 (1)	Best	<ul> <li>Current design standards:         <ul> <li>Subdivision rules state that streets shall be designed for safe vehicular travel</li> <li>Complete Streets design standards and guidelines are provided by: Massachusetts Project</li> <li>Development &amp; Design Guide (2006); National Association of City Transportation Officials Urban</li> <li>Bikeway Design Guide; ITE Designing Walkable Urban Thoroughfares: A Context Sensitive Approach;</li> <li>ITE Recommended Practice report guidelines; American Association of State Highway and Transportation Officials Green Book</li> <li>Hinderances:</li></ul></li></ul>
Road Width	Code of Ordinances Sec. 78-85(a)(1), Sec 78-86; SRR 6.2.2	Conventional	<ul> <li>Current design standards:</li> <li>No definition of major and minor categories</li> <li>SRR does not prescribe road width in a subdivisions or developments, just ROW widths</li> <li>Code of Ordinances sets minimum street width to be minimum 50' in width</li> <li>Hinderances:</li> <li>Current standards promote high amounts of impervious area</li> <li>Conventional criteria typically set street width to 24'-30'</li> <li>Road widths may be varied with Planning Board approval</li> <li>Recommendations:</li> <li>Create wide, medium, narrow, and alley categories where widths are limited to 24' for busy two travel lane roads with 2' shoulders, and 18'-20' for low traffic residential neighborhoods</li> <li>Allow/encourage permeable paving materials for shoulders, low-traffic, narrow, or secondary streets</li> <li>Incorporate or reference concepts the Green Streets Guidelines</li> </ul>



Factor	Regulation Source	Rating	Discussion
ROW Width	Code of Ordinances Sec. 78-58; SRR 6.2.2	Conventional	<ul> <li>Current design standards:         <ul> <li>Complete Streets design standards and guidelines are provided by: Massachusetts Project Development &amp; Design Guide (2006); National Association of City Transportation Officials Urban Bikeway Design Guide; ITE Designing Walkable Urban Thoroughfares: A Context Sensitive Approach; ITE Recommended Practice report guidelines; American Association of State Highway and Transportation Officials green book</li> <li>SRR defines minimum 22' and 32' in width for developments</li> <li>SRR defines minimum ROW as 50' in a subdivison Hinderances:</li> <li>Does not explicitly reference any standards or design features in the Code of Ordinances Recommendations:</li> <li>Explicitly define Complete Streets design standards and guidelines as related to ROW width</li> </ul> </li> </ul>
Access Option	Zoning Ordinance 6.1.9 (a)	Better	<ul> <li>Current design standards:</li> <li>Common drives are allowed with Special Permit</li> <li>Must be surfaced with material that reduces water flow onto streets or properties</li> <li>Hinderances:</li> <li>Does not explicitly allow one way loop streets</li> <li>Minimum width for residential common driveways shall be 16' from the roadway to the point of intersection of individual driveways</li> <li>Requires a Special Permit</li> <li>Recommendations:</li> <li>Explicitly allow one way loop streets</li> <li>Explicitly allow common drives for multi-family homes without requiring a Special Permit</li> </ul>
Dead Ends/Cul-de- sacs	SRR 6.2.4(1), 6.2.4(2)	Conventional	Current design standards:  - Permanent dead-ended streets are required to have a minimum diameter of 90'  - Dead-end streets are a maximum of 500' in length  Hinderances:  - Does not allow a hammerhead turnaround for permanently dead-end streets  Recommendations:  - Explicitly allow and/or require hammerhead turnaround  - Explicitly allow and/or require center landscaped bioretention island

20233959.001A Page 7 of 15 May 2023



Factor	Regulation Source	Rating	Discussion
Curbing	Stormwater Regulations 5.02 (g) iv.	Best	Current design standards: - Suggests omission of curbs to reduce impervious surfaces Hinderances: - (N/A) Recommendations: - Preference for no curbs and open drainage with roadside swales
Roadside Swales	Stormwater Regulations 5.02 (g) xi.	Best	<ul> <li>Current design standards:         <ul> <li>Grass swales along roads are cited as an optional technique to create a hydrologically functional site</li> <li>LID explicitly encouraged</li> <li>Hinderances:</li></ul></li></ul>
Utilities	Zoning Ordinance 7.7.4.8; 10.1.7.4	Best	<ul> <li>Current design standards:         <ul> <li>Required to be located underground where physically and environmentally feasible</li> <li>Hinderances:</li></ul></li></ul>
Sidewalks	Code of Ordinances Sec. 78-85 a) (6); Sec. 78-161; Sect 78-85 a) (9)	Conventional	<ul> <li>Current design standards:         <ul> <li>Board approval required for flexibility in sidewalk material and design</li> <li>Does not explicitly mention sidewalk-specific construction rules</li> <li>Sidewalks are installed per requirements from Public Works and City Engineer</li> <li>Hinderances:</li></ul></li></ul>

20233959.001A Page 8 of 15 May 2023



Factor	Regulation Source	Rating	Discussion
Sidewalk Drainage	Zoning Ordinance 7.5.7.7	Best	<ul> <li>Current design standards:         <ul> <li>Non-structural techniques and drainage systems that reduce impervious surfaces are encouraged for flexible development zones</li> <li>Hinderances:</li></ul></li></ul>
Parking	Zoning Ordinance 6.1.2; 6.1.7; 8.9.9.1	Conventional	<ul> <li>Current design standards:</li> <li>Off-street parking spaces must be at least 9'x18'</li> <li>Special permit is required for reduction of parking spaces</li> <li>Minimum number of off-street parking spaces for residential uses is one parking space per residential unit</li> <li>Hinderances:</li> <li>Does not establish maximum parking spaces</li> <li>Does not encourage minimum number of parking spaces</li> <li>Does not allow for tenants to enter into separate, optional lease agreements for parking Recommendations:</li> <li>Set limits on maximum number of parking spaces</li> <li>Encourage minimum number of spots needed</li> <li>Allow for reductions in parking based on available transit options nearby (e.g. large parking garages, bus stops, bike routes, etc.)</li> <li>Allow tenants to enter into separate optional lease agreements for shared residential parking</li> </ul>
Commercial Parking	Zoning By law 7.1.5; 8.3.2.3; 8.9.9.3	Conventional	<ul> <li>Current design standards:         <ul> <li>General regulations establish parking minimums and necessitate a request to reduce amount of parking through Plan Approval process</li> <li>Hinderances:</li></ul></li></ul>



Factor	Regulation Source	Rating	Discussion
			- Parking minimums should be calculated from required spots and not developed space.
LID in Parking Areas	Zoning Ordinance 6.1.7.6	Better	<ul> <li>Current design standards:         <ul> <li>Landscaping/other buffering materials are required between parking lots and adjacent parcels</li> <li>Hinderances</li> <li>Landscaping is not explicitly referring to LID or bioretention</li> <li>No requirement that the buffer is vegetation or non-structural</li> <li>Recommendations:</li> <li>Require landscaping within parking areas have LID or bioretention</li> <li>Require minimum of 10% of the interior parking area is landscaped and a minimum of 25 square feet for island planting areas, allow exception for curb cuts around islands to allow flow to infiltrate through retention area</li> </ul> </li> </ul>
Easy Siting of LID Features (bioretention, swales, etc.)	Zoning Ordinance 10.1.8.1; 10.1.8.2 Stormwater Regulations 5.02 (g) xi.	Best	<ul> <li>Current design standards:         <ul> <li>Explicitly states that incentives are available for LID best practices</li> <li>Explicitly states that grass swales along roads are an option to integrate into site design to create a hydrologically functional site</li> <li>PVPC has endorsed several Green Streets Guidebooks for Holyoke to adopt Hinderances:</li></ul></li></ul>

20233959.001A Page 10 of 15 May 2023



Factor	Regulation Source	Rating	Discussion
Permeable Paving	Stormwater Regulations 5.02 (g) xi.; 5.03 (a) iii.	Best	<ul> <li>Current design standards:         <ul> <li>Permeable pavement is allowed in site design for small and large developments</li> <li>Several initiatives including the MVP summary which promote road dieting and reduction of impervious areas</li> </ul> </li> <li>Hinderances:         <ul> <li>Permeable pavement and pavers are not explicitly preferred for residential drives, parking stalls, spillover parking spaces, and emergency access ways</li> <li>Does not explicitly allow two track design for driveways and secondary emergency access Recommendations:</li> <li>Explicitly state preference for permeable pavement for all parking lots and driveways, can reference Green Streets Guidebook</li> </ul> </li> </ul>
Stormwater Management O&M Plan	Zoning Ordinance 6.1.7.7; Stormwater Regulation 4.02 (a) viii. 5.01 (a) iii. 6.02 (b) 5.02 (g)	Best	<ul> <li>Current design standards:         <ul> <li>O&amp;M plan required and must meet Massachusetts Stormwater Handbook provisions</li> <li>O&amp;M plan must maintain post development peak discharges for a 24-hour-2 year frequency storm event</li> <li>Requirements for stormwater management plans for large developments (1 acre or larger) require developers to consider LID techniques (i.e. swales, rain gardens, etc.) to meet recharge requirements</li> </ul> </li> <li>Hinderances:         <ul> <li>(N/A)</li> </ul> </li> <li>Improvements:         <ul> <li>Encourage surficial bioretention and swales</li> </ul> </li> </ul>



Green Infrastructure Analysis: Summary of Findings

This analysis focuses on whether current design standards and guidelines within Stormwater Regulations and Code of Ordinances allow the following types of Green Infrastructure:

- Green roofs,
- Infiltration Practices (rain gardens, curb extensions, planter gardens, porous and pervious pavement, etc.),
- And Water Harvesting Devices (rain barrels, cisterns, use of stormwater for non-potable uses)

Generally, Holyoke regulations and guidelines do not explicitly ban green roofs, infiltration practices, and water harvesting devices, but there are no explicit development incentives for creating green roofs or other infiltration practices.



Green Infrastructure	Regulation Source	Currently Allowable? (Y/N)	Discussion
Green Roofs	Stormwater Regulations 5.02 xi.	Υ	<ul> <li>What Allows Practice?</li> <li>Stormwater regulations allow 'roof gardens' in site design where practicable</li> <li>What Hinders Practice?</li> <li>Nothing explicitly limits or hinders practice</li> <li>No incentives for creating green roofs for businesses or residents</li> </ul>
Infiltration (rain gardens, curb extensions, planter gardens, pours and pervious pavement, etc.)  Water Harvesting (rain barrels, cisterns, use of stormwater for non- potable uses)	Stormwater Regulations 5.02 a); 5.03 a) iii.  Code of Ordinances Sec. 38-76 b) (8)	Y	<ul> <li>What Allows Practice?</li> <li>Stormwater regulations and ordinances require LID features in site design for large and small developments</li> <li>Regulations explicitly state preference for infiltration, flow, attenuation, and pollutant removal of runoff on site to existing areas with grass, trees, and similar vegetation and through the use of open vegetated swales and natural depressions; bioretention areas and rain gardens; permeable pavement; use rain barrels or other cisterns to provide onsite stormwater storage; planting of trees, etc.</li> <li>What Hinders Practice?</li> <li>Ordinances only encourage use of LID practices to the maximum extent practicable</li> <li>Does not offer incentives for infiltration practices</li> </ul>

20233959.001A Page 13 of 15 May 2023



# **Proposed Implementation Schedule**

It is recommended that some design guidelines and standards in the Zoning By-Laws and LSSR be modified to limit impervious area, encourage surficial infiltration, and allow green infrastructure. Topics are sorted by high priority, medium priority, and low priority level for each document.

Regulation	Topic	Implementation Date
	<ul> <li>High Priority:</li> <li>Road Width (78-85(a)1., 78-86): remove 50' road width requirement and create categories for different traffic levels. Make sure it is in line with complete streets and green streets (78-58).</li> <li>Sidewalks (78-85(a)6., 78-85(a)9., 78-161): Encourage permeable pavement and siting that considers land contours and best pedestrian utility.</li> </ul>	
Code of Ordinances	<ul> <li>Low Priority:</li> <li>Street Location (78-58): Refer directly to complete streets design criteria or Green Streets Guidebook</li> </ul>	
SRR	<ul> <li>High Priority:</li> <li>Right of Way Width (6.2.2): Define Road widths as opposed to just defining ROW, decrease ROW for subdivided roads.</li> <li>Dead Ends 6.2.4: Explicitly allow hammerhead turnarounds or require landscaped bioretention island</li> </ul>	
Zoning Ordinance – App. A	<ul> <li>High Priority:</li> <li>Parking (6.1.2, 6.1.7, 8.9.9.1): Set maximum parking limits, encourage only developing the minimum spots needed, and allow tenants to enter into optional lease agreements to share residential parking.</li> <li>Commercial Parking (7.1.5, 8.3.2.3, 8.9.9.3): Allow reduction of parking requirements near transit. Create smaller stall requirements for compact cars. Parking minimums should be calculated by usage and not sq. ft. of the developed space.</li> </ul>	



Regulation	Topic	Implementation Date
	<ul> <li>Medium Priority:</li> <li>Access Options (6.1.9(a)): Explicitly allow one way loop streets and common drives for multi-family homes</li> <li>LID in Parking (6.1.7.6): Require 10% of the parking lot to have landscaped bioretention or infiltration area. Allow exceptions for curb cuts to allow flow into bioretention islands.</li> </ul>	
	<ul> <li>Low Priority:         <ul> <li>Utilities (7.7.4.8, 10.1.7.4): Explicitly allow flexibility in locating utilities underground to allow installation of roadside LID such as swales or rain gardens</li> <li>Sidewalk Drainage (7.5.7.7): State preference for sidewalks to drain into green space and can reference Green Streets Guidebook</li> <li>Easy Siting of LID (10.1.8.1, 10.1.8.2): Recommend LI</li> </ul> </li> </ul>	
Storm Water	<ul> <li>Medium Priority:</li> <li>Roadside Swales (5.02(g)xi.): Adopt technical specifications from Green Streets Guidebook</li> </ul>	
Regulations	<ul> <li>Low Priority:</li> <li>Roadside Swales (5.02(g)xi.): Adopt technical specifications from Green Streets Guidebook</li> <li>Permeable Paving (5.02(g)xi, 5.03(a)iii): Explicitly state preference for permeable pavement for parking lots and driveways</li> </ul>	

# Appendix H Previous Annual Certifications



## 1 CERTIFICATION

## STORMWATER MANAGEMENT PROGRAM, CITY OF HOLYOKE, MASSACHUSETTS

Authorized Representative: All applications, reports, or information submitted to the Director shall be signed and certified by either a principal executive officer or ranking elected official (See 40 CFR 122.22).

# CERTIFICATION

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

Printed Name:

Signature:

Date:

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

Printed Name: Joshua Garcia

Title: Mayor, City of Holyoke

Signature:

Date: June 26, 2024