



**CODE
ASSESSMENT
REPORT
CITY OF
WESTFIELD,
MA**

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1. PURPOSE AND OBJECTIVES

The U.S. Environmental Protection Agency (EPA) established the National Pollutant Discharge Elimination System (NPDES) program as part of the Clean Water Act (CWA) to regulate discharges to surface water. In Massachusetts, EPA and the Massachusetts Department of Environmental Protection (MassDEP) are the co-permitting authorities that regulate stormwater runoff that enters local water bodies from Municipal Separate Storm Sewer Systems (MS4s) in “Urbanized Areas.”

The City of Westfield, Massachusetts (City) is required to obtain a permit for stormwater discharges from the EPA and MassDEP and is currently covered under a NPDES General Permit for Stormwater Discharges from Small MS4’s in Massachusetts (the MS4 General Permit). The MS4 General Permit authorizes the City to discharge stormwater into waters of the U.S. if the City maintains and implements a Stormwater Management Plan (SWMP). The MS4 General Permit includes six components called minimum control measures which, when implemented, will result in a reduction in pollutants discharging into receiving waters.

The minimum control measures are:

1. Public Education and Outreach;
2. Public Participation and Involvement;
3. Illicit Discharge Detection and Elimination;
4. Construction Site Stormwater Runoff Control;
5. Post-Construction Stormwater Management in New Development and Redevelopment; and
6. Good Housekeeping and Pollution Prevention.

The City is committed to working with residents and state and federal environmental agencies to achieve water quality goals and protect public health.

1.1 Purpose

Part 2.3.6. of the MS4 Permit requires this *Code Assessment Report*. Pursuant to parts b. and c. the assessments must include the review of the following:

- Current street design and parking lot guidelines and other local requirements that affect the creation of impervious cover, and if changes to design standards for streets and parking lots can be made to support low impact design options (Part 2.3.6.b.)
- Review local regulations to determine the feasibility of making certain green infrastructure practices allowable when the appropriate site conditions exist (Part 2.3.6.c.). These practices consist of the following:
 - i. Green roofs;

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

The MS4 Permit requires that this evaluation and progress on local code and policy modifications shall be included in the MS4 Permit Annual Report (part 4.4.b.iv.).

1.2 Objectives

This report summarizes the City of Westfield's review of local code and policy that may influence the creation of impervious cover or inadvertently create barriers to green infrastructure installations during property development and redevelopment. To accomplish this task, City staff from multiple departments reviewed the *Code & Ordinance Worksheet* (COW) developed by the Center for Watershed Protection. The COW is intended to help communities evaluate their local development regulations to identify revisions that allow (or require) property developers to minimize impervious cover, conserve natural areas and use runoff reduction practices to manage stormwater runoff. Section 2.2 of this *Code Assessment Report* further discusses the COW.

2. METHODOLOGY

2.1 Meetings Summary

City staff responsible for management of local code and policy relevant to this MS4 Permit requirement met in the spring of 2022 to discuss the MS4 Permit's Code Assessment requirements and approaches to address these requirements and advanced the review and completion of the COW. Table 2-1 below summarizes these meetings.

When the City finalized the process of filling out the COW scoring sheet, a copy was emailed to Woodard & Curran for review. Chapters Westfield code review³, 4, and 5 of this report summarizes Woodard & Curran's review of the COW scoring sheet and identifies a summary of key findings.

Table 2-1: Meetings Summary

Meeting Date	Meeting Goals	Meeting Attendees
5/26/2022	1. Overview of MS4 PY4 Requirements	Joseph Kietner, Stormwater Coordinator Jay Vinskey, Principal Planner.
	2. Identify Key Policy Documents for Review	
	3. Identify Team Roles and Next Steps	

2.2 Code & Ordinance Worksheet Overview

The steps to completing the COW are to:

- Gather codes, ordinances, and other relevant policy documents
- Identify authorities who administer the rules
- Select the appropriate COW questions for your community
- Review the regulations to find answers to the COW questions
- Use the COW Scoring Spreadsheet to record answers, points, and notes
- Identify priority actions for the short and long term

The COW is subdivided into four categories and contains 22 principles:

1. Residential Streets and Parking Lots (Principles 1 - 10)
2. Lot Development (Principles 11 - 16)
3. Conservation of Natural Areas (Principles 17 - 22)
4. Runoff Reduction

The first three sections consist of a series of questions that correspond to each of the model development principles. Chapter 4 of the *Code Assessment Report* contains questions addressing stormwater management standards, particularly the inclusion of runoff reduction practices. Points are assigned based on how well the current development policies agree with the site planning practices identified in the questions.

For the purposes of this report, the final scoring is less important than the collaborative process of identifying key policy and identifying where opportunities may exist to improve policies to be more “stormwater friendly”.

3. WESTFIELD CODE REVIEW

The City reviewed the following codes to complete the COW:

- General Ordinances
- Department of Public Works Ordinance, Chapter 18
 - Division 2A, Stormwater Utility Ordinance
- Streets and Sidewalk Ordinance, Chapter 16
 - Stormwater Management Ordinance, Article II, Division 4
- Subdivision Rules & Regulations
- Wetlands Protection Ordinance, Article V, Division 2, Sections 13-176 through 13-189.
- Zoning Ordinance

A table summarizing these policy documents, links to each document, and an overview of the policy is included in Appendix A.

3.1 Policies Affecting Creation of Impervious Cover

The MS4 Permit provides a definition for impervious surface as, “Any surface that prevents or significantly impedes the infiltration of water into the underlying soil. This can include but is not limited to roads, driveways, parking areas, and other areas created using nonporous material; buildings; rooftops; structures; artificial turf; and compacted gravel or soil.”

Pursuant to Part 2.3.6 b. of the MS4 Permit, this *Code Assessment Report* must assess current street design, parking lot guidelines, and other local requirements that affect creation of impervious cover. The assessment should also be used to determine if changes are necessary for streets and parking lots to incorporate low impact design options. The term low impact development (LID) refers to systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration, or use of stormwater in order to protect water quality and associated aquatic habitat.

The Westfield policies most likely to influence the development of impervious cover are summarized in Table 3-1 below:

Table 3-1: Primary Policies Related to Impervious Cover Creation

Policy	Applicability
Subdivision Rules and Regulations	<ul style="list-style-type: none"> • Minimum roadway width • Street length requirements. • Right-of-way width requirements • Cul-de-sac requirements • Pervious driveways have been allowed. • Two track design for residential driveways have been allowed.
Streets and Sidewalks Ordinance, Chapter 16	<ul style="list-style-type: none"> • Minimum sidewalk widths • Rooftop runoff • Right-of-way management
Zoning Ordinance	<ul style="list-style-type: none"> • Street width • Parking lots • Parking ratios

3.2 Policies Affecting Green Infrastructure

Green Infrastructure refers to ecological systems, both natural and engineered, that act as living infrastructure. Green Infrastructure elements are planned and managed primarily for stormwater control, but also exhibit social, economic, and environmental benefits. As stated in Chapter 1.1, the EPA requires that this *Code Assessment Report* contains an assessment on the feasibility for requiring specific green infrastructure practices that includes green roofs, infiltration practices, and water harvesting devices.

Sections 16-108, and 16-109 of Westfield’s Streets and Sidewalks Ordinance references the Massachusetts Stormwater Handbook (Volume 1 and Volume 2). By extension, this handbook contains guidance for the design and installation for Green Roofs, Infiltration Practices, Pervious Pavements, and Water Harvesting Systems. The State Plumbing Code regulates water reuse.

4. SUMMARY OF KEY FINDINGS

The City performed a review of applicable ordinances, rules, regulations, and policies that influence the creation of impervious cover and green infrastructure and LID installations. Overall, City policies provide enough flexibility to developers to ensure that open space is protected, and that excessive impervious cover is not inadvertently required. Additionally, given the strong association of local stormwater management requirements that reference the Massachusetts Stormwater Handbook, there are no limitations for developer/applicants against utilizing GI and LID approaches. Infiltration strategies continue to be a primary requirement of local stormwater control performance standards, through Handbook requirements.

There are several findings from the completion of the COW that are worth noting, associated with both progressive policies, and that may provide opportunities for further improvement to local policy that will further enhance water resource protection.

Roadways, Sidewalks, and Driveways

- The current codes are silent on curb extensions. However, the Zoning and Subdivision ordinances can be revised to allow or require curb extensions which will narrow the roadway width and reduce impervious surfaces. Discussions with the Fire Chief and the Department of Public Works would be necessary to confirm possible impacts for their operations if curb extensions are promoted.
- The Subdivision Rules and Regulations specifies that utilities be placed in the right-of-way which limits further creation of impervious surfaces abutting paved roadways and streets.
- The minimum pavement width for a roadway is 24' from curb to curb pursuant to the Subdivision Rules and Regulations. The Center for Watershed Protection lists a minimum roadway width in low volume roads between 18-22 feet. Conversations with the Fire Department and Department of Public Works will be necessary to confirm if reducing the pavement width will impact their operations.
- The Subdivision Rules and Regulations allow minimum sidewalk widths to be reduced to five feet as appropriate to meet safety standards. However, this code is silent on allowing alternative pedestrian networks where feasible, and pervious materials on sidewalks. Conversations with the Department of Public Works would be necessary before changing the code to allow sidewalks to be constructed with pervious materials to determine potential impacts to snow removal operations.
- Improvements to approved subdivisions are required under the Subdivision Rules and Regulations. These improvements consist of utilities, streets and roadways, sidewalks and bicycle paths, and landscaping.
- The City has allowed pervious driveways and a two-track design in residential areas, but the codes do not speak to shared driveways which can reduce impervious cover in urbanized areas.

Parking Lots and Parking Lot Runoff

- Parking lot requirements are consistent with the recommendations of the COW Guidance manual. However, the code is silent on reducing the number of parking spaces allowed on a site. In certain zones and districts this could be a helpful tool in reducing impervious surfaces.

- The Zoning Ordinance addresses the basic parking ratios recommendations of the COW guidance manual. Revisions to the Ordinance could improve parking ratios but at the cost of submitting and implementing a “local study of parking demand”. If a local parking demand study will be done as part of the City’s Master Plan Update, then this could be an efficient improvement, but it is not necessary at this time.
- The Zoning Ordinance is consistent with recommendations within the COW guidance manual for parking lot runoff requirements.
- Consistencies between the principals of parking codes and parking lots assists with a decrease in inadvertently creating impervious surfaces than what is necessary. In turn, this meets part of the goal of Part 2.3.6. of the MS4 Permit.

Stormwater Management – Green Infrastructure, Low Impact Development, and Water Harvesting

- The City’s stormwater codes are consistent with the COW guidance manual. For post-construction work, the stormwater codes mention peak rates discharge requirements, but volume of runoff is not specifically discussed within the City’s stormwater code. While not directly mentioned, it is required indirectly by the Massachusetts Stormwater Handbook.
- The Stormwater Utility Ordinance, Section 18-103 allow for credit for off-site stormwater management systems or facilities which aligns with practice 93 of the COW guidance manual. However, this applies to the Stormwater Utility that the City has. The City may consider adding off-site mitigation for the other stormwater codes that will align with Section 18-103 and practice 93 of the COW guidance manual.
- GI, LID, and Water Harvesting are all allowable in Westfield. Adherence to the design standards of the Massachusetts Stormwater Handbook (Volume 1 and 2) obligates applicant/developers to meet recharge standards and design for infiltration. The Handbook encourages applicants to pursue LID and green infrastructure design such as rain gardens/bioretenion areas under standard three of Volume 1 Chapter 1: “Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance.”
- Some refinements and updates to the Wetlands Protection Ordinance and the Stormwater Management Ordinance and/or regulations may be necessary to advance innovative nutrient and other specific pollutant control.

5. RECOMMENDATIONS

The EPA is not currently requiring an implementation of green infrastructure within municipal codes. However, Part 2.3.6. b. of the MS4 Permit requires that “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. The permittee shall implement all recommendations, in accordance with the schedules, contained in the assessment.” Table 5.1 below outlines recommendations based on Part 2.3.6 b. of the MS4 permit and proposes a schedule for action and implementation.

Woodard & Curran reviewed this scoring sheet and observed that in general, the highest scores were found in the principles of parking lot runoff, setbacks and frontages, open space management, and installation and maintenance practices. Meanwhile, the lowest scores were observed within the principles of street width, street length, right-of-way width, cul-de-sacs, parking ratios, and structured parking. Finally, the codes were silent in some principles. Of these silent principles, Woodard & Curran confirmed that the following principles were the most applicable for the MS4 Permit Part 2.3.6:

1. Street width, principles 2 and 3
2. Right-of-Way Width, principals 5-7
3. Vegetated Open Channels principals 12 and 13
4. Rooftop runoff, principals 56, 57, and 60

The City is currently updating their Master Plan which is anticipated for completion and adoption by June 2023¹. The Master Plan will cover a range of subject matters, however, the most applicable subject matters for the MS4 Permit Part 2.3.6 are the land use and zoning sections, transportation and mobility sections, and facilities section. These sections can impact impervious surfaces and LID/GI practices.

¹ <https://cityofwestfield.org/202/Master-Plan>

5.1 Final Recommendations

Table 5-1: Policy Recommendations and Implementation

Policy	Approach	Recommendation
Streets and Sidewalks Ordinance	Amend	<ul style="list-style-type: none"> • Revise Section 16-132 (b) to allow pervious materials in sidewalk construction to increase infiltration. • Revise <i>Division 4: Stormwater Management</i> to meet Part 2.3.6 .a. ii. of the MS4 Permit which consists of the following: <ul style="list-style-type: none"> ○ LID site planning and design strategies to be implemented unless it is infeasible (Part 2.3.6 .a. ii.1.). ○ Requiring developers to meet an average annual pollutant removal equivalent to 90% of the average annual load of Total Suspended Solids (TSS) and 60% of the average annual load of Total Phosphorus on post-construction impervious areas on sites (Part 2.3.6 .a. ii.3.). The Permit cites that this can be achieved through one of the following mechanisms: <ul style="list-style-type: none"> ▪ The installation of BMPs that meet pollutant removal percentages. ▪ Retaining the volume of runoff that is equal to or greater one inch multiplied by the total post-construction impervious area on site.

Policy	Approach	Recommendation
Streets and Sidewalks Ordinance	Amend	<ul style="list-style-type: none"> ▪ Meeting retention and treatment requirements that achieves the above standards. ▪ Utilizing offsite mitigation that meets the above standards with the same USGS HUC12 as the new development site.
		<ul style="list-style-type: none"> • Revise <i>Division 4: Stormwater Management</i> Section 16-108 (BMP Definition). This definition currently lists the Stormwater Technical Handbook (March 1997), but the Handbook has since been revised and is due to be revised again. Therefore, add the following section within this definition "Massachusetts Department of Environmental Protection's Stormwater Handbook dated March 1997, as may be amended from time-to-time hereafter, unless otherwise specifically noted herein."
		<ul style="list-style-type: none"> • Incorporate standards in <i>Division 4</i> that requires an applicant to consider and implement, where feasible, LID/GI strategies. Provide language to require applicable city staff to review narrative and plans.
		<ul style="list-style-type: none"> • Include off-site mitigation in <i>Division 4</i> and reference the credit that Section 18-103 discusses, "<i>Credit</i> means a reduction in the amount of a stormwater utility fee charge to the owner of a particular property for the existence and use of privately owned, maintained and operated on-stie of off-stie stormwater management systems or facilities or continuing provision of services

Policy	Approach	Recommendation
Streets and Sidewalks Ordinance	Amend	or activities that reduce or mitigate the city's cost of providing stormwater management services for that particular property."
Subdivision Rules and Regulations	Revise	<ul style="list-style-type: none"> • Allow permeable paving materials to be utilized as appropriate.
		<ul style="list-style-type: none"> • Reduce minimum roadway widths for low volume roads to 18-22 feet in accordance with principle 1 of the COW, pending on a discussion from the Department of Public Works operators.
		<ul style="list-style-type: none"> • Allow curb extensions that narrow the roadway width pending a discussion with the Fire Chief to ensure that narrowing the roadway does not prohibit fire vehicles and equipment from entering subdivisions.
Department of Public Works Ordinance	Amend	<ul style="list-style-type: none"> • Revise Article II. Division 2A. Section 18-101 by changing "stonnwater" to "stormwater".
Master Plan Update	Revise	<ul style="list-style-type: none"> • Consider the possibility of adding GI practices within municipal properties where feasible.
		<ul style="list-style-type: none"> • Incorporate any applicable parking studies as part of the update.
Wetlands Protection Ordinance	Amend	<ul style="list-style-type: none"> • Add a reference to require applicants to adhere to the Stormwater Handbook.
		<ul style="list-style-type: none"> • Consider establishing a no build zone, or a no disturbance zone around wetlands. While this is not a requirement of the Wetlands Protection Act, by adding no build zones or no disturbance zones, this will minimize impervious surfaces and impacts to wetland resources areas.

Policy	Approach	Recommendation
Zoning Ordinance	Amend	<ul style="list-style-type: none"> • Allow permeable paving materials to be utilized as appropriate.
Zoning Ordinance	Amend	<ul style="list-style-type: none"> • Allow curb extensions that narrow the roadway width pending a discussion with the Fire Chief to ensure that narrowing the roadway does not prohibit fire vehicles and equipment from entering subdivisions. • Revise Section 7-10.2 to set parking maximums. This will align with practice 15 of the COW guidance manual. • Revise Article V, Section 5-60 of the Zoning Ordinance to allow open space design by right in specific zones. The Residential Rural Zone would be the most applicable current zones that could allow this. However, an existing overlay district could also be applicable, or a new overlay district could be added if necessary.



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