



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

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Final: 11/29/2022

Subj: Inspection Report
Clean Water Act
City of Warwick, Rhode Island

From: Taylor Fontaine (PG Environmental), Tiffany Brackett (PG Environmental)

Thru: Kelly Brantner – TOCOR

To: File

I. Facility Information

- A. *Facility Name:* City of Warwick, Rhode Island
- B. *Facility Address:* City Hall - 3275 Post Rd, Warwick RI 02886
- C. *Facility/MS4* Eric Hindinger
Program Contacts: Engineering Program Manager
eric.j.hindinger@warwickri.com
- David Kurowski – Field Construction Inspector (Official Title),
also acting City Engineer
david.a.kurowski@warwickri.com

II. Background Information

- A. *Date(s) of Inspection:* Virtual – September 20-22, 2022, Onsite – October 11, 2022
- B. *Weather Conditions:* Virtual – Not applicable, Onsite field activities – Temperatures approximately 68 degrees and sunny skies
- C. *US EPA Representatives:* Rachel Olugbemi and Damian Bednarz (EPA Region 1)
- D. *US EPA Contractor Representative(s):* Taylor Fontaine (PG Environmental), Tiffany Brackett (PG Environmental)
- E. *State/Local Representative(s):* Margarita Chatterton, Environmental Engineer III, Rhode Island Department of Environmental Management (Virtual portion)

- F. Federally Enforceable Requirements Covered During the Inspection:* Stormwater discharges and certain non-stormwater discharges from the City of Warwick (hereinafter, the City) Municipal Separate Storm Sewer System (MS4) are authorized by the Rhode Island Pollutant Discharge Elimination System (RIPDES) General Permit Number RIR040000 entitled "Storm Water Discharge from Small Municipal Separate Storm Sewer Systems and from Industrial Activity at Eligible Facilities Operated by Regulated Small MS4s" (hereinafter, the Permit), issued by the Rhode Island Department of Environmental Management (RIDEM) on December 19, 2003. The City obtained coverage under the Permit with Permit number RIR040031, effective March 17, 2004.
- G. Previous Enforcement Actions:* The City entered into a Consent Agreement with the State of Rhode Island and Providence Plantations Department of Environmental Management, Office of Compliance, and Inspection on June 7, 2016 (hereinafter, Consent Agreement). The Consent Agreement provided the City with a list of action items and deadlines to be implemented. For the purposes of this report, some inspection observations and findings may touch upon both Permit requirements as well as actions times in the Consent Agreement.

III. Inspection Purpose

EPA Region 1 with their contractor PG Environmental inspected the City's MS4 program for compliance with the Permit. For the purposes of this inspection report, the representatives listed above from EPA Region 1 and PG Environmental comprise the "EPA Inspection Team".

Virtual meetings were held on September 20-22, 2022, and an onsite inspection on October 11, 2022. The inspection was initially announced to the City via email on September 1, 2022, with a follow up email on September 7, 2022, once the current City contact was identified. The email notification included a pre-inspection records request and a tentative agenda for the inspection.

The virtual portion of the inspection consisted of records reviews and virtual interviews with City representatives and included an evaluation of all six Minimum Control Measures (MCMs) described in the Permit: Public Education and Outreach, Public Involvement and Participation, Illicit Discharge Detection and Elimination (IDDE) Program, Construction Site Stormwater Runoff Control, Stormwater Management in New Development and Redevelopment, and Good House Keeping and Pollution Prevention for Municipal Operations. To conclude the virtual interviews, the EPA Inspection Team held a closing conference with City representatives on September 22, 2022, to provide an overview of the EPA Inspection Team's preliminary observations from the virtual interviews.

The EPA Inspection Team conducted an onsite visit on October 11, 2022. The EPA Inspection Team used the onsite visit to inspect outfalls, active construction sites, post-construction best management practices (BMPs), and municipality-owned and operated facilities. While onsite the EPA Inspection Team reviewed additional documents, held in-person discussions with City staff, and observed the City's implementation of MS4 program elements. At the end of the onsite inspection, a closing conference was held with City representatives to discuss preliminary observations from the onsite visit.

Although the findings in this inspection report identify areas of potential Permit noncompliance, they do not constitute any formal notice of violation. Appendix A of this report contains the Permit. Appendix B of this inspection report contains photographs from the field inspection conducted on October 11, 2022. Appendix C of this inspection report is the Exhibit Log and contains various documents that were reviewed by the EPA Inspection Team. Exhibits are referenced as applicable throughout this inspection report.

IV. Permittee Details

The City of Warwick is in Kent County, Rhode Island (RI), approximately 5 miles south of Providence, RI and 55 miles south of Boston, Massachusetts. The City encompasses 35.5 square miles of land. As of the 2020 census, the City's population was approximately 82,823. The City is bordered by the municipalities of Cranston to the North, East Greenwich and Greenwich Bay to the south, Narragansett Bay to the east, and West Warwick to the West. Additionally, the City's MS4 system is interconnected with East Greenwich, Cranston, and the Rhode Island Department of Transportation (RIDOT). City representatives stated that the interconnection from the City flows through RIDOT's system and out to Greenwich Bay.

The City's primary MS4 receiving waters are Greenwich Bay, Narragansett Bay, Pawtucket River, Tuscatusset Brook, Gorton Pond, Providence River, and tributaries to Narragansett Bay such as Buckeye Brook. The Permittee's receiving waters have Total Maximum Daily Loads (TMDLs), and a full list of TMDLs with the impairment are listed in the City's Stormwater Management Program Plan (SWMPP) from 2008, (refer to Appendix C, Exhibit 1). At the time of the inspection, the City had a Draft Revised SWMPP, dated 2016, that focuses solely on the IDDE Program (refer to Appendix C, Exhibit 2).

There is no combined sewer system in the City. City representatives estimated that 20 percent of the City uses septic systems and is not connected to a sanitary sewer. The remaining 80 percent of the City is serviced by a separate sanitary sewer system.

V. Inspection Observations

Based on the conversations held with City representatives during the inspection, as well as a review of MS4 program documentation provided by City representatives, the EPA Inspection Team presents the following observations. Findings about how the City implements the MS4 program relative to the requirements of the Permit are indicated in bold text and are accompanied by relevant Permit citations. As previously stated, although the findings in this inspection report identify areas of potential Permit noncompliance, they do not constitute any formal notice of violation.

1. MS4 Program Management

Implementation of the City's MS4 program is primarily administered by the Department of Public Works (DPW) (including the Highway, Building Maintenance, and Engineering Divisions), with assistance from the Planning Department, Planning Board, and Building Department. The City's MS4 program is funded through a line item in the overall capital budget.

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The City's 2008 SWMPP lists the individuals with roles and responsibilities within the Stormwater Management Team (refer to [Appendix C, Exhibit 1](#)). According to City representatives, the City hired Mr. David Kurowski as the City Field Construction Inspector in spring 2022 to assist with updating and improving their MS4 program. City representatives stated that the City has no formal agreements or memorandums of understanding (MOU) with neighboring municipalities or RIDOT pertaining to stormwater.

The City has contracted with a third-party consultant in the past (BETA Group, Inc.) to assist with aspects of the MS4 program including mapping and dry weather inspections, with sampling and testing as needed. Additionally, the City has contracted with BETA Group, Inc., and Crossman Engineering to assist with the development of MS4-related documentation to meet their Consent Agreement deadlines. The City historically worked with the Southern Rhode Island Conservation District (SRICD) to implement the Public Education and Outreach and Public Involvement and Participation MCMs. At the time of the inspection, the SRICD was no longer involved with the City's MS4 program.

Stated above in Section IV of this report, at the time of the inspection, the City had a Draft Revised SWMPP, dated 2016, that focuses solely on the IDDE Program (refer to [Appendix C, Exhibit 2](#)). The City's 2008 SWMPP is not representative of the City's current MS4 program personnel or practices. For example, at the time of the inspection, the City Engineer was Dave Kurowski, not John DeLucia as listed in the SWMPP (refer to [Appendix C, Exhibit 1](#)). Further, the SWMPP routinely lists actions items that "will be developed", but often were not developed at the time of the inspection. Specific examples are provided in the sections below. City representatives stated the SWMPP was being updated at the time of the inspection.

2. Public Education and Outreach

The DPW is responsible for implementing the Public Education and Outreach MCM. The City relies primarily on print media, a City calendar distributed to City residents (with stormwater information), and the City webpage for educating the public about stormwater pollution. The City has identified the following targeted pollutants: pet waste management, lawn fertilizing, and pesticide use, and has developed flyers, posters, and public signage on municipal trash receptacles intended to educate the public on these pollutants and reduce their impact.

2.a The City had not identified specific target audiences for the education program who are likely to have significant stormwater impacts.

Permit Part IV.B.1.b states that the "operator must document the decision process for the development of a storm water public education and outreach program. The rationale statement must address both the overall public education program and the individual BMPs, measurable goals and responsible persons for the program. If documented strategies are not in place to meet the requirements of Part IV.B.1.b.2 and 4 of this permit at the time the SWMPP is required to be submitted, the operator must include development of the strategies within the first year of the program as a measurable goal. Any changes to the SWMPP to include the strategies must be submitted in writing in accordance with Part IV.E.2 of this permit. The rationale statement must include the following information, at a minimum...

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Permit Part IV.B.1.b.3 requires a “List of the target audiences for the education program who are likely to have significant storm water impacts (including commercial, industrial and institutional entities) and why those target audiences were selected. The program must include efforts to cover both industrial and residential activities including illegal dumping into storm drains.”

The City’s 2008 SWMPP Section Develop Outreach Strategies, Target Audiences, and Partnerships (refer to Appendix C, Exhibit 1) states, “Strategies will be developed to target specific audiences that could potentially have the greatest impact to minimizing pollutant loadings and to improving water quality. These audiences will include commercial, industrial, and institutional entities likely to have a significant impact on storm water.” However, these strategies and decision process had not been developed at the time of the inspection.

2.b The City had not identified methods to evaluate the effectiveness of the educational messages and overall public education and outreach program.

Permit Part IV.B.1.b states that the “operator must document the decision process for the development of a storm water public education and outreach program. The rationale statement must address both the overall public education program and the individual BMPs, measurable goals and responsible persons for the program. If documented strategies are not in place to meet the requirements of Part IV.B.1.b.2 and 4 of this permit at the time the SWMPP is required to be submitted, the operator must include development of the strategies within the first year of the program as a measurable goal. Any changes to the SWMPP to include the strategies must be submitted in writing in accordance with Part IV.E.2 of this permit. The rationale statement must include the following information, at a minimum...

Permit Part IV.B.1.b.7 requires “Procedures to evaluate the success of this minimum measure, including discussion of how the measurable goals for each of the BMPs were selected.”

At the time of the inspection, the City had no procedures in place to track the success or impact of the public education and outreach aspect of the MS4 program.

3. Public Involvement and Participation

The DPW is primarily responsible for implementing the Public Involvement and Participation MCM. During the inspection, City representatives stated City residents can comment on the SWMPP and the MS4 program at public meetings, but City representatives stated there was little commenting/involvement to date. The City representatives did not provide any other examples of public participation opportunities provided by the City.

3.a The City had not identified specific target audiences of the public involvement program, including a description of the types of groups engaged.

Permit Part IV.B.2.b.2.i states that the “operator must include the following milestones in the Public Involvement/Participation program:

- i. Identify the target audiences of the public involvement program, including a description of the types of groups engaged (e.g., commercial and industrial

businesses, trade associations, environmental groups, homeowner associations, educational organizations, etc.)”

The City’s 2008 SWMPP (refer to [Appendix C, Exhibit 1](#)) states, “The City will develop a plan that includes the identification of target audiences and a description of the types of groups engaged.” This plan and associated target audiences had not been developed at the time of the inspection.

3.b The City did not regularly provide the opportunity for public involvement activities included in their MS4 program.

Permit Part IV.B.2.b.2.ii states that the “operator must include the following milestones in the Public Involvement/Participation program:

- ii. Description of types of public involvement activities included in the program (e.g., citizen representatives on a storm water management panel, public hearings, volunteer monitoring, etc.)”

At the time of the inspection, the City had not regularly provided the opportunity for public involvement activities in their MS4 program. The only public participation activity initiated by the City was public comment on the draft 2016 SWMPP. City representatives stated that City personnel will assist in local public activities, but they do not organize them or proactively provide opportunities for the public. For example, the 2021 Annual Report states that the DPW regularly assists with community cleanups (refer to [Appendix C, Exhibit 3](#)). However, these cleanups are not organized by the City, but rather other local groups.

3.c The City had not identified methods to evaluate the effectiveness of the educational messages and overall public involvement and participation program.

Permit Part IV.B.2.b states that the “operator must document the decision process for the development of a storm water public involvement/participation program. The rationale statement must address both the overall public involvement/participation program and the individual BMPs, measurable goals and responsible persons for the program. If documented strategies are not in place to meet the requirements of Part IV.B.2.b.2 of this permit at the time the SWMPP is required to be submitted, the operator must include development of the strategies within the first year of the program as a measurable goal. Any changes to the SWMPP to include the strategies must be submitted in writing in accordance with Part IV.E.2 of this permit. The rationale statement must include the following information, at a minimum...

Permit Part IV.B.2.b.4 requires “Procedures to evaluate the success of this minimum measure, including discussion of how the measurable goals for each of the BMPs were selected.”

At the time of the inspection, the City had no procedures in place to track the success or impact of the public participation aspect of the MS4 program.

4. Illicit Discharge Detection and Elimination (IDDE) Program

The DPW (including the Highway, Building Maintenance, and Engineering Divisions) implements the IDDE MCM. The City's 2008 SWMPP and Revised SWMPP, dated 2016, describe the City's practices for this MCM (refer to [Appendix C, Exhibits 1 and 2](#)).

According to the City's 2021 Annual Report, the City adopted an IDDE ordinance under the Code of Ordinances on August 17, 2016 (refer to [Appendix C, Exhibit 3](#)). The City's IDDE Plan was updated on January 31, 2019 (refer to [Appendix C, Exhibit 4](#)).

According to the City's 2021 Annual Report, the last mapping of the City's MS4 system was conducted in June 2018 by BETA Group, Inc, and included mapping of all 499 identified outfalls. The City's mapping is a geographic information systems-based (GIS) interface that includes location of outfalls, names of waterbodies receiving discharge from outfalls, catch basins, manholes, and pipe connectivity. City representatives stated that the GIS mapping is in the process of being updated since the last mapping was updated in 2018. City representatives stated that the mapping updates should begin in November 2022. The City also maintains CAD maps at the DPW office.

4.a. The City did not have procedures for the identification of the location of outfalls.

Permit Part IV.B.3.b states that the "operator must document the decision process for the development of a storm water illicit discharge detection and elimination program. The rationale statement must address both the overall illicit discharge detection and elimination program and the individual BMPs, measurable goals and responsible persons for the program. If documented strategies and procedures are not in place to meet the requirements of Part IV. B.3.b. 2, 6, 7, 8, and 10 of this permit at the time the SWMPP is required to be submitted, the operator must include development of the strategies and procedures within the first year of the program as a measurable goal. Any changes to the SWMPP to include the strategies must be submitted in writing in accordance with Part IV.E.2 of this permit. The rationale statement must include the following information, at a minimum...

Permit Part IV.B.3.b.1 requires "Procedures for identification of the location of outfalls. Description of how an outfall map will be developed."

As part of their IDDE program, the City has developed several guidance documents and provided them to the EPA Inspection Team titled:

- Revised SWMPP (approved November 7, 2016) (refer to [Appendix C, Exhibit 2](#));
- Illicit Discharge Detection and Elimination (IDDE) Plan Requirements (refer to [Appendix C, Exhibit 5](#)); and
- City of Warwick Illicit Discharge Detection and Elimination (IDDE) Plan Revision (refer to [Appendix C, Exhibit 4](#)).

However, these documents did not include procedures for outfall identification (i.e., what is considered an outfall) and to document the location of those outfalls.

4.b. The City was not conducting dry weather screening activities.

Permit Part IV.B.3.b.5.vii states, “The operator must include a measurable goal of performing a minimum of two surveys, one to be conducted between January 1st - April 30th and one between July 1st - October 31st by the fourth year of the program. Dry weather surveys must be conducted no less than 72 hours after the last rain fall of 0.10 inches or more. At a minimum, all dry weather flows from outfalls must be collected and analyzed for temperature, conductivity, pH, and bacteria.”

Part C(4)(a)(xiii) of the Consent Agreement (refer to Appendix C, Exhibit 6) requires the City to “Complete the dry weather surveys of all outfalls for the parameters listed in Attachment H, Part B and as required by the General Permit in accordance with the following schedule:

1. By 31 October 2017, complete 2016 Inspection Area as shown on Attachment A;
2. By 31 October 2018, complete 2017 Inspection Area as shown on Attachment A;
3. By 31 October 2019, complete 2018 Inspection Area as shown on Attachment A;”

The City has procedures for dry weather screenings in the IDDE Plan Revision (refer to Appendix C, Exhibit 4). According to the City’s 2021 Annual Report, in 2018, the City’s consultant Crossman Engineering was retained to conduct dry-weather surveys at 100 outfalls for the period of January 1, 2019 – April 30, 2019 and 101 outfalls during the July 1, 2019 – October 31, 2019 periods (refer to Appendix C, Exhibit 3).

At the time of the inspection, City representatives stated that the City had not conducted dry weather screenings since 2019. The City representatives did not state if dry weather screenings were conducted in previous years.

A letter dated July 14, 2022 from the City to the RIDEM regarding Consent Agreement deliverables (refer to Appendix C, Exhibit 7), the City stated, “The City is officially requesting an extension for these items. DPW personnel are currently reviewing the previously completed dry weather sampling data and are working with an outside consultant to continue these inspections.”

4.c The City had not identified methods to evaluate the effectiveness of the IDDE program.

Permit Part IV.B.3.b states that the “operator must document the decision process for the development of a storm water illicit discharge detection and elimination program. The rationale statement must address both the overall illicit discharge detection and elimination program and the individual BMPs, measurable goals and responsible persons for the program. If documented strategies and procedures are not in place to meet the requirements of Part IV. B.3.b. 2, 6, 7, 8, and 10 of this permit at the time the SWMPP is required to be submitted, the operator must include development of the strategies and procedures within the first year of the program as a measurable goal. Any changes to the SWMPP to include the strategies must be submitted in

writing in accordance with Part IV.E.2 of this permit. The rationale statement must include the following information, at a minimum...

Permit Part IV.B.3.b.12 requires “Procedures to evaluate the success of this minimum measure, including discussion of how the measurable goals for each of the BMPs were selected.”

At the time of the inspection, the City had no procedures in place to track the success or impact of the IDDE aspect of the MS4 program.

5. Construction Site Stormwater Runoff Control

The DPW (primarily the Engineering Division) Planning Department, Planning Board, and Building Department work together to implement the Construction Site Stormwater Runoff Control MCM. According to City representatives, all projects, except driveways, which involve 600+ square feet of disturbance are reviewed by the Engineering Division and then the Planning Department or Building Department. City representatives also stated that most project plans also go through RIDEM due to the geographic location of the City and proximity to wetlands. During the inspection, City representatives stated the Planning Department reviews grading, erosion and sediment control (GESCC), and stormwater plans involving larger acreage projects or single-family homes while the Building Department reviews plans for smaller acreage projects that involve no change or property lines or variances. City representatives did not specify what they consider “smaller acreage”.

The City representatives state that all plans have three (3) stages of plan approval: master plan, preliminary plan, and final plan. The public can comment on all master and preliminary plans and can appeal the project with the City if there is concern or complaint.

As part of the approval process, the City requires that construction projects include sediment and erosion control methods as part of their plan submittal. The sediment and erosion control methods are referenced in the plan approval decision and become part of the official construction documents. The City primarily relies on the *Rhode Island Stormwater Management, Design, and Installation Rules* and *Rhode Island Stormwater Design and Installation Standards Manual* for guidance with plan approval. All approved plans are stored on a digital database.

According to the City’s 2021 Annual Report (refer to [Appendix C, Exhibit 3](#)), the City adopted a construction site stormwater runoff control ordinance in 2016 and relies on this ordinance to manage and enforce their construction site stormwater runoff control program. The City requires all plans to include as-builts that are certified by a licensed design engineer. Prior to final project signoff by the Building Department, the DPW reviews and signs off on any sections relating to stormwater.

Construction sites are inspected by the DPW (usually the City Field Construction Inspector) to ensure compliance with design plans and to monitor erosion control methods. If the construction sites are noncompliant with the approved plans, the City inspector can hold bonds or issue stop work orders.

5.a The City did not have documented procedures for plan and stormwater pollution prevention plan (SWPPP) review.

Permit Part IV.B.4.a.5 requires the Permittee to develop “Procedures for plan and SWPPP review including procedures which incorporate consideration of potential water quality impacts. The site plan review must include procedures for review of sediment and erosion controls and design of BMPs to minimize water quality impacts.”

According to the City’s 2008 SWMPP (refer to Appendix C, Exhibit 1), “The City will establish a plan review and inspection program for all development and redevelopment projects that disturb greater than one acre of land, including projects less than one acre that are part of a common plan of development or sale that discharge into the MS4. The program will include the analysis of possible actions to prevent the disturbance of land or water systems. The sites will be inspected and monitored to ensure that the correct BMPs are used. Non-structural and structural BMPs will be combined to create an effective plan.”

City representatives stated they use the *Rhode Island Stormwater Management, Design, and Installation Rules* and *Rhode Island Stormwater Design and Installation Standards Manual* for guidance with plan approval. Other than this, they do not currently use a checklist or have written procedures for plan review and for review of sediment and erosion controls.

5.b The City did not have documented procedures for inspections and there was no set frequency for the inspection of active construction sites.

Permit Part IV.B.4.a.7 requires the Permittee to develop “Procedures for inspections and enforcement of control measures at construction sites.”

During the inspection, City representatives stated that the City Field Construction Inspector (Dave Kurowski) serves as the primary stormwater inspector for construction sites. They explained that he will inspect a construction site during the beginning phases of development to ensure that erosion and sediment controls are in place.

During the virtual inspection portion, City representatives stated that the inspector does not utilize a checklist for the inspections or follow any developed inspection procedures. However, the EPA Inspection Team observed the City inspector using an inspection checklist during the field portion. The City representatives explained that the inspector will only document the inspection, take photographs, and maintain records if there are observed issues. The inspector will send a notice letter to the construction site owner/operator in the event of identifies issues. However, subsequent inspections are not conducted on a regular basis and are typically only conducted if there are complaints from residents.

5.c The City had not identified methods to evaluate the effectiveness of the Construction Site Stormwater Runoff Control program.

Permit Part IV.B.4.b states that the “operator must document the decision process for the development of a construction site storm water control program. The rationale statement must

address both the overall construction site storm water control program and the individual BMPs, measurable goals and responsible persons for the program. If documented strategies and procedures are not in place to meet the requirements of Part IV. B.4.b.2, 5 and 8 of this permit at the time the SWMPP is required to be submitted, the operator must include development of the strategies and procedures within the second year of the program as a measurable goal. Any changes to the SWMPP to include the strategies must be submitted in writing in accordance with Part IV.E.2 of this permit. The rationale statement must include the following information, at a minimum...

Permit Part IV.B.4.b.10 requires “Procedures to evaluate the success of this minimum measure, including discussion of how the measurable goals for each of the BMPs were selected.”

At the time of the inspection, the City had no procedures in place to track the success or impact of the Construction Site Stormwater Runoff Control program aspect of the MS4 program.

6. Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management)

The DPW (including the Highway and Engineering Divisions) with support from the Parks and Recreation Department work together to implement the post construction stormwater management MCM (post construction). Ownership of post-construction BMPs occurs as a part of the deed recording process through the Kent County’s Registry of Deeds. According to the City’s 2021 Annual Report (refer to [Appendix C, Exhibit 3](#)), the City adopted an ordinance in 2016 and relies on this ordinance to manage and enforce their post construction stormwater management program.

Upon completion of a construction project, the applicant’s engineer is required to file an as-built plan showing that the site was consistent with the approved plans. These plans are maintained in a digital portal. Decisions for site plans require maintenance of stormwater BMPs. According to City representatives, residential subdivisions, where applicable, are required to create a Homeowners Association (HOA) plan detailing stormwater maintenance requirements with provisions to enforce upkeep if necessary. The 2021 Annual Report (refer to [Appendix C, Exhibit 3](#)) states, “The Engineering Division is working on a program to provide home owners associations with a “Maintenance Checklist and Inspection form” to be filled out and returned on an annual basis.”

With regards to private, non-HOA post-construction BMPs, the City’s Soil Erosion, Sediment Control, and Post-construction Stormwater Control ordinance (Chapter 68) requires private owners to conduct long-term operation and maintenance activities. City representatives stated that City DPW staff do have the ability to access private property to inspect BMPs. The City’s Engineering Division inspects and maintains City-owned/operated BMPs.

6.a The City did not have procedures for site plan review to ensure that design of controls to address post-construction runoff are consistent with the *Rhode Island Stormwater Design and Installation Standards Manual*.

Permit Part IV.B.5.a.3 requires the Permittee to develop “Procedures for site plan review to ensure that design of controls to address post-construction runoff are consistent with: The State of Rhode Island Stormwater Design and Installation Manual (as amended).”

At the time of the inspection, the City did not have any documented procedures for site plan review to address post-construction runoff.

6.b The City did not have procedures to ensure the long-term maintenance of privately-owned BMPs.

Permit Part IV.B.5.a.4 requires the Permittee to develop “Procedures to ensure adequate long term operation and maintenance of BMPs.”

Part C(4)(a)(xii) of the Consent Agreement (refer to Appendix C, Exhibit 6) requires the City to, “Establish and maintain an inventory of municipally-owned and privately-owned structural controls that drain to the MS4 (both baseline existing conditions and as they are constructed) and implement procedures to ensure adequate maintenance practices are followed;”

At the time of the inspection, City representatives stated that while they maintain City-owned/operated BMPs, there were no procedures or checks in place to ensure long-term maintenance of those privately-owned BMPs not located within an HOA subdivision. City representatives stated that in the past they have tried a self-maintenance program for those privately-owned BMPs. However, that program apparently suffered from a lack of interest and participation. City representatives stated that they typically only inspect privately-owned BMPs if there is a public complaint.

At the time of the inspection, the City was conducting inspections of City-owned/operated post-construction BMPs. However, the City had no guidelines or procedures for the inspections, and there was no set frequency. According to the 2021 Annual Report (refer to Appendix C, Exhibit 3), the City has approximately forty-two (42) City-owned/operated BMPs, and only one (1) was inspected in 2021.

6.c The City had not identified methods to evaluate the effectiveness of the post construction program.

Permit Part IV.B.5.b states that the “operator must document the decision process for the development of a post-construction storm water management program. The rationale statement must address both the overall post-construction storm water management program and the individual BMPs, measurable goals and responsible persons for the program. If documented strategies and procedures are not in place to meet the requirements of Part IV.B.5.b.2, 3, 5, 6, 10 and 12 of this permit at the time the SWMPP is required to be submitted, the operator must include development of the strategies and procedures within the second year of the program as a measurable goal. Any changes to the SWMPP to include the strategies must be submitted in

writing in accordance with Part IV.E.2 of this permit. The rationale statement must include the following information, at a minimum...

Permit Part IV.B.5.b.14 requires “Procedures to evaluate the success of this minimum measure, including discussion of how the measurable goals for each of the BMPs were selected.”

At the time of the inspection, the City had no procedures in place to track the success or impact of the Post Construction Stormwater Management aspect of the MS4 program.

7. Pollution Prevention and Good Housekeeping in Municipal Operations

DPW (including the Highway and Engineering Divisions) is primarily responsible for implementing the Good House Keeping and Pollution Prevention for Municipal Operations program MCM. City representatives stated that they contract with International Paving Corporation to assist with catch basin cleaning.

DPW’s Highway Division is responsible for sweeping City-owned/maintained streets each spring. The number of miles and volume of materials is documented in the 2021 Annual Report (refer to Appendix C, Exhibit 3). The City’s tracking system lists every City street to ensure that each street is swept each year.

During the inspection, City representatives stated that catch basin and street sweeping materials are deposited at the DPW yard and are eventually taken to a landfill outside the City’s urbanized area (UA). The City documented the number of catch basins cleaned and inspected in the 2021 Annual Report (113 inspected and cleaned out of 5,583 total) (refer to Appendix C, Exhibit 3).

7.a. The City had not identified all activities and facilities that can discharge stormwater into the MS4.

Permit Part IV.B.6.a.1 of the Permit requires the Permittee to “Identify all operations such as activities and facilities that have a point source or the potential for a point source discharge of storm water to an MS4 or waters of the State associated with activities or operations that have the potential to introduce pollutants to storm water runoff.”

During the inspection, the City representatives stated they did not have an inventory of City-owned/operated activities and facilities that could discharge into the MS4. Their best guess at the time of the inspection was “maybe 21-22” properties. This included nine (9) fire stations, City Hall, seven (7) schools, and the DPW yard.

7.b The City had not developed a program to prevent and reduce pollutant runoff from City-owned/operates activities and facilities.

Permit Part IV.B.6.a.2 requires the Permittee to “Develop and implement a program to prevent and reduce pollutant runoff and runoff volumes from facilities owned and operated by the MS4 operator, and from the MS4 and structural BMPs. The program must include an employee training component.”

Permit Part IV.B.6.a.3 requires the Permittee to “Develop and implement a program to prevent and reduce storm water pollution from operations and maintenance activities that have the potential to introduce pollutants to storm water runoff.”

The City had not identified City owned and operated facilities with the potential to discharge pollutants to the MS4 nor developed a pollutant reduction program at the time of the inspection. According to the City’s 2008 SWMPP (refer to [Appendix C, Exhibit 3](#)), “The City will evaluate the existing conditions at each City owned industrial and non-industrial facility to develop strategies to reduce runoff and eliminate pollution sources. BMPs that accomplish these goals will be implemented.” According to the City’s 2008 SWMPP, this measurable goal was to be achieved by 2007 but was not completed at the time of the inspection.

7.c The City had not developed an operation and maintenance (O&M) program.

Permit Part IV.B.6.a.4 requires the Permittee to “Develop inspection procedures and schedules for long term O&M of municipal facilities, municipal structural BMPs and the MS4.”

During the inspection, City representatives stated that they had not developed O&M procedures for any facilities. City representatives stated that DPW staff regularly conduct maintenance and cleaning operations at the DPW yard, but that there is no checklist, regular schedule, and maintenance activities are not documented.

7.d The City did not have a stormwater training program that was administered to all staff involved in the MS4 program.

Permit Part IV.B.6.a.5 requires the Permittee to “Develop and implement an employee training program for good housekeeping, pollution prevention, and O&M of BMPs.”

At the time of the inspection, the City had not developed a training program for all City personnel involved in stormwater-related activities that includes good housekeeping, pollution prevention, and O&M of BMPs. The 2021 Annual Report (refer to [Appendix C, Exhibit 3](#)) documents that only Eric Earls (DPW Director) and Eric Hindinger (Engineering Program Manager) received stormwater-related training in 2021.

According to the City’s 2008 SWMPP (refer to [Appendix C, Exhibit 1](#)), “All DPW, Engineering, Parks and Recreation, Sewer Authority, and School Department employees involved in operation and maintenance activities related to stormwater discharges will be trained on pollution prevention and good housekeeping measures using the materials collected and developed. Topics will include:

- Park and open space maintenance
- Fleet and building maintenance
- New construction and land disturbances
- Storm water system maintenance”

7.e The City had not implemented SWPPPs at municipal facilities that discharge stormwater associated with industrial activity.

Permit Part IV.B.6.a.6 requires the Permittee to “Implement a site-specific SWPPP developed for each facility that discharges storm water associated with industrial activity.”

Permit Part IV.B.6.b.5 states, “For all facilities with discharges of storm water associated with industrial activity, the SWMPP must contain a site specific SWPPP that includes the description of BMPs, including structural and non-structural controls for reducing or eliminating the discharge of pollutants from municipal operations and facilities.”

According to the City’s 2008 SWMPP (refer to [Appendix C, Exhibit 1](#)), The City will complete SWPPPs in accordance with Part IV.B.6.b.5 of the General Permit for the following industrial facilities owned and operated by the City of Warwick:

- DPW Maintenance Facility
- The Warwick Sewer Treatment Facility

At the time of the inspection, the City had not developed SWPPPs for any identified City-owned/operated facilities.

7.f The City had not developed procedures for catch basin/storm sewer cleaning and inspection.

Permit Part IV.B.6.b.1.ii requires the Permittee to develop “Procedures for inspections, cleaning and repair of detention/retention basins, storm sewers and catch basins with appropriate scheduling given intensity and type of use in the catchment area. The operator must develop a maintenance schedule for inspection and maintenance of BMPs. The maintenance program must at a minimum incorporate all permit requirements and maintenance specifications of the particular BMP. Maintenance schedules must address issues related to the performance of BMPs observed during their inspection. The operator must make changes to the frequency of maintenance of structural BMPs when dry weather surveys of outfalls and inspections of the system and BMPs reveals that the maintenance frequency is not adequate. The operator must maintain records on inspections and maintenance performed on structural BMPs.”

Part C(4)(a)(xi) of the Consent Agreement (refer to [Appendix C, Exhibit 6](#)) requires the City to, “By the deadlines in Paragraph C(4)(a)(ix) above and annually thereafter, inspect all catch basins and manholes for sediment accumulation and clean as necessary. Increased inspections and maintenance should be considered. After at least 2 consecutive years of operational data has been collected, Warwick may submit a request for approval for a lesser frequency of inspection based on evidence indicating the system does not require annual cleaning.”

According to the City’s 2008 SWMPP (refer to [Appendix C, Exhibit 1](#)), “The City will develop an operations and maintenance program for BMPs, storm sewers, and catch basin inspection/cleaning within the first year of the program.” However, the City had not developed

an O&M program for BMPs, storm sewers, and catch basin inspection/cleaning at the time of the inspection.

7.g The City had not implemented procedures for street sweeping.

Permit Part IV.B.6.b.1.vi requires the Permittee to develop “Procedures for the development and implementation of a regular street and road sweeping program that includes sweeping of all streets and roads within the regulated area annually, to be fully implemented by the third year of the program. The operator is required to sweep all streets and roads within the regulated area annually unless a lesser frequency can be justified based on at least two consecutive years of data indicating the street or road does not require annual sweeping. The selected frequency of sweeping must be based on complaints received, historical records, high potential for sediment accumulation in the catch basins and at outfalls and observed flooding problems. The program must also include procedures to increase the frequency of sweeping. Any changes to the sweeping program and all documentation and supporting rationale should be reported to the Department in the Annual Report as required in this permit. The RIDOT must apply this program to the MS4 within the urbanized and densely populated areas but may propose an alternate program or frequency for divided highways outside the urbanized or densely populated areas.”

According to the City’s 2021 Annual Report, approximately 180 (50 percent) of the City’s 395 total roadway miles had been swept in 2021 (refer to Appendix C, Exhibit 3).

7.h The City had not identified methods to evaluate the effectiveness of the Pollution Prevention and Good Housekeeping program.

Permit Part IV.B.6.b states that the “operator must document the decision process for the development of a pollution prevention/good housekeeping program for facilities, maintenance activities, and operations that have the potential to introduce pollutants to storm water runoff. The rationale statement must address both the overall pollution prevention/good housekeeping program and the individual BMPs, measurable goals and responsible persons for the program. If documented strategies and procedures are not in place to meet the requirements of Part IV. B.6.b.1, 2, 4, 7, and 8 of this permit at the time the SWMPP is required to be submitted, the operator must include development of the strategies and procedures within the first year of the program as a measurable goal. Any changes to the SWMPP to include the strategies must be submitted in writing in accordance with Part IV.E.2 of this permit. Unless otherwise stated the remaining requirements have to be submitted by the time authorization to discharge is required. For all facilities that have a discharge of storm water associated with industrial activity to a MS4 or a waters of the State, the operator must develop and implement the procedures required in Part IV.B.6.b.3 and 5 by the effective date of this permit. The rationale statement must include the following information, at a minimum...

Permit Part IV.B.6.b.10 states “Procedures to evaluate the success of this minimum measure, including discussion of how the measurable goals for each of the BMPs were selected.”

At the time of the inspection, the City had no procedures in place to track the success or impact of the Pollution Prevention and Good Housekeeping aspect of the MS4 program.

Onsite Inspection – Site Visit Summaries

The table below summarizes the onsite inspection portion of the inspection site visits related to the City’s MS4 program conducted on October 11, 2022. The weather at the time of the field visit was sunny with temperatures approximately 62°F to 68°F. [Appendix B](#) includes photographs of the notable observations at the locations visited.

Site Location #1: City of Warwick DPW Yard – 925 Sandy Ln, Warwick, RI 02889	
Geographic Location: 41.7076°, -71.4140°	Date: 10/11/2022 Time: 9:30 AM (EDT) to 10:30 AM (EDT)
Notable Site Conditions: - The City shares the DPW Yard location with the City’s Water Division, but maintains separate areas for the storage of materials, vehicles, and activities. - The City’s DPW Yard is primarily used for miscellaneous storage of maintenance materials, municipal trash can storage (for residential damaged trash cans), municipal vehicle storage, salt storage, vehicle fueling, municipal vehicle maintenance, etc. (refer to Appendix B, Photographs 1 through 3). - The EPA Inspection Team observed the DPW Yard’s vehicle washing area (refer to Appendix B, Photographs 4 and 5). City representatives stated that this area is used only for municipal vehicles, and that the observed catch basins lead to an onsite “sediment soil separator” (oil/water separator (OWS)) (refer to Appendix B, Photograph 6). - Adjacent to the vehicle washing area, the EPA Inspection Team observed a storage location for used paints dropped off by residents (refer to Appendix B, Photographs 7 and 8). The paints were stored outside on a wooden pallet without cover. - The EPA Inspection Team observed the DPW Yard’s municipal vehicle fueling station with underground storage tanks (USTs) comprising a 6,000-gallon gasoline tank and 12,000-gallon diesel fuel tank (refer to Appendix B, Photographs 9 and 10). City representatives stated that the manholes by the fueling station are connected to an underground oil/water separator (OWS). The EPA Inspection Team observed petroleum stains on asphalt adjacent to the fueling station. - The EPA Inspection Team observed the DPW Yard’s salt storage pile and sand mix piles. These piles were located outside on the impervious asphalt lot and were without cover or functioning containment controls to prevent migration (refer to Appendix B, Photographs 11 through 14). Specifically, the salt storage pile had neither cover nor containment, and the sand mix pile has a nonfunctioning containment control and no cover. City representatives stated that a new storage building had been approved and would hopefully start construction this year. Additionally, the City representatives said that the manholes in the vicinity of the salt storage pile and sand mix piles are connected to the City’s sanitary sewer system (refer to Appendix B, Photograph 15). - In the northeastern corner of the DPW Yard, the EPA Inspection Team observed approximately thirteen (13) 55-gallon drums being stored outside on the ground or on wooden pallets without cover. At the time of the inspection, some of the drums were uncapped and still contained petroleum product (refer to Appendix B, Photographs 16 and 17).	

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- In the northern portion of the DPW Yard, the EPA Inspection Team observed stored snowplow equipment on the ground without cover. The EPA Inspection Team observed residual petroleum staining on the adjacent lot (refer to [Appendix B, Photographs 18 and 19](#)).
- The EPA Inspection Team observed the DPW Yard's maintenance garage where City staff perform everything from oil changes to full engine repairs. The EPA Inspection Team observed petroleum staining on the garage floor (refer to [Appendix B, Photographs 20 and 21](#)).
- Directly offsite from the DPW Yard is the McDermott public swimming pool. Stormwater flow from the DPW Yard is conveyed northwest into a parking area near the pool where it infiltrates into a dry well system. City representative stated that though offsite, they maintain the system. However, the City did not have a set maintenance schedule to ensure that the dry well system is functioning properly (refer to [Appendix B, Photographs 22 through 24](#)).
- In the western portion of the DPW Yard, the EPA Inspection Team observed the following:
 - An uncontained and uncovered cold patch storage pile (refer to [Appendix B, Photograph 25](#)) adjacent to a catch basin that is connected to the dry well at the McDermott public swimming pool (refer to [Appendix B, Photographs 22 through 24](#));
 - Traffic paint stored outside on the ground without cover (refer to [Appendix B, Photograph 26](#));
 - Several catch basins connected to the City's storm sewer system (refer to [Appendix B, Photographs 27 and 28](#));
 - "Bay C7" that is used to store petroleum products. The EPA Inspection Team observed heavy petroleum staining on the impervious pavement outside the bay (refer to [Appendix B, Photograph 29](#)); and
 - Used vehicle batteries stored outside for pickup and disposal (refer to [Appendix B, Photograph 30](#)).

Site Location #2: City Composting Station – 111 Range Rd, Warwick, RI 02889

Geographic Location: 41.7116°, -71.4161°

Date: 10/11/2022

Time: 10:38 AM (EDT) to 10:56 AM (EDT)

Notable Site Conditions:

- The EPA Inspection Team visited the City's composting station, a municipally owned property. This location serves as a depository for resident waste oil, composting materials, yard waste (i.e., leave and brush), cardboard, tires, mattresses, excess street sweeping materials, and light metal waste (refer to [Appendix B, Photographs 31 through 33](#)).
- The waste oil area comprises a double-walled 500-gallon waste oil tank. The EPA Inspection team observed petroleum staining on the ground adjacent to the tank, and there was no spill kit or absorbent materials located anywhere near the tank (refer to [Appendix B, Photographs 34 and 35](#)).
- This facility was relatively flat and contained no catch basins or drains.

Site Location #3: Warwick Fire Department Station 4 – 1501 W Shore Rd, Warwick, RI 02889

Inspection Dates: September 20-22, 2022 (Virtual) and October 11, 2022 (Onsite)

Geographic Location: 41.7074°, -71.3839°	Date: 10/11/2022 Time: 11:05 AM (EDT) to 11:10 AM (EDT)
Notable Site Conditions: - The EPA Inspection Team observed the Warwick Fire Department Station 4. The fire station maintains a 55-gallon drum used for storing waste cooking oil (refer to Appendix B, Photograph 36). The drum is stored outside without containment. - All stormwater flow from the fire station would flow east onto West Shore Road, a RIDOT-maintained roadway.	
Site Location #4: Draper Avenue Satellite Location – 69 Draper Ave, Warwick, RI 02889	
Geographic Location: 41.7059°, -71.3762°	Date: 10/11/2022 Time: 11:15 AM (EDT) to 11:20 AM (EDT)
Notable Site Conditions: - The EPA Inspection Team observed the Draper Avenue satellite station where the City stores construction materials, aggregates, catch basin/street sweeping materials, and some composting facility overflow (refer to Appendix B, Photograph 37). - There were no storm drains onsite.	
Site Location #5: WyndSOR Way Retention Basin – WyndSOR Way, Warwick, RI 02889	
Geographic Location: 41.7005°, -71.3834°	Date: 10/11/2022 Time: 11:30 AM (EDT) to 11:35 AM (EDT)
Notable Site Conditions: - The EPA Inspection Team observed the WyndSOR Way retention basin, a City owned and operated BMP that collects and retains stormwater from WyndSOR Way (refer to Appendix B, Photographs 38 and 39). - According to the City representatives, the basin was installed in 2014-2015.	
Site Location #6: Mill Cove Post-Construction Retrofit BMP – Mill Cove Road, Warwick, RI 02889	
Geographic Location: 41.7114°, -71.3673°	Date: 10/11/2022 Time: 11:48 AM (EDT) to 11:55 AM (EDT)
Notable Site Conditions: - The EPA Inspection Team observed a post-construction retrofit BMP located on Mill Cove Road (refer to Appendix B, Photographs 40 and 41). - City representatives stated that approximately 150 feet of paved roadway was removed and replaced with an infiltration system comprising soil and riprap.	
Site Location #7: Strand Avenue Bioretention BMPs – Strand Avenue, Warwick, RI 02889	
Geographic Location: 41.6860°, -71.4010°	Date: 10/11/2022 Time: 1:00 PM (EDT) to 1:06 PM (EDT)
Notable Site Conditions: The EPA Inspection Team observed a bioretention BMP that captures and infiltrates stormwater from Strand Avenue (refer to Appendix B, Photographs 42 and 43).	

Inspection Dates: September 20-22, 2022 (Virtual) and October 11, 2022 (Onsite)

- City representatives stated that stormwater infiltrates into the City's storm sewer system. - The EPA Inspection Team observed that some of the inlets into the bioretention BMPs were inundated with sediment and vegetation and required maintenance (refer to Appendix B, Photograph 44).	
Site Location #8: Outfall #166-2 – Oakland Beach, Warwick, RI 02889	
Geographic Location: 41.6859°, -71.4014°	Date: 10/11/2022 Time: 1:10 PM (EDT) to 1:18 PM (EDT)
Notable Site Conditions: - The EPA Inspection Team observed Outfall #166-2 (and associated catch basin) located at the end of Strand Avenue (refer to Appendix B, Photograph 45). - The outfall conveys stormwater onto the nearby Oakland Beach and Buttonwoods Cove (refer to Appendix B, Photograph 46). - The City representatives stated that this outfall is often under water due to the local tides and fills with sand/sediment often. - City representatives further stated that this outfall was previously inspected by Crossman Engineering Inc. and reiterated that the City was not currently conducting outfall inspections.	
Site Location #9: Outfall #152-3 – Mohawk Avenue and Powhatan Street, Warwick, RI 02889	
Geographic Location: 41.6883°, -71.4004°	Date: 10/11/2022 Time: 1:27 PM (EDT) to 1:30 PM (EDT)
Notable Site Conditions: - The EPA Inspection Team observed Outfall #152-3 located at the intersection of Mohawk Avenue and Powhatan Street (refer to Appendix B, Photographs 47 and 48). - Stormwater is conveyed onto these streets, through Outfall 152-3, and into an unnamed pond connected to Bushneck Cove/Buttonwoods Cove. - The EPA Inspection Team observed discharge from Outfall #152-3 at the time of the inspection.	
Site Location #10: Seasons Corner Market Construction Site – Yucatan Drive and Betsy Williams Drive, Warwick, RI 02889	
Geographic Location: 41.7208°, -71.4038°	Date: 10/11/2022 Time: 1:45 PM (EDT) to 2:22 PM (EDT)
Notable Site Conditions: - The EPA Inspection Team observed an active construction site scheduled to be a Seasons Corner Market, with an estimated completion date of Spring 2023 (refer to Appendix B, Photographs 49 through 51). The EPA Inspection Team observed the City's Field Construction Inspector lead the inspection of the construction site. At the time of the inspection, the construction site was conducting dewatering activities utilizing frac tanks to remove sediment before discharge into the City's MS4 (refer to Appendix B, Photographs 52 and 53). - The EPA Inspection Team observed sediment trackout onto Ansonia Road, a public roadway (refer to Appendix B, Photograph 54). This location on Ansonia Road serves as the	

main entrance to the site did not have a stabilized construction entrance or other BMP to minimize sediment trackout.	
Site Location #11: Warwick Pond Outfall #67-2 – Stanmore Road and Edgehill Road, Warwick, RI 02889	
Geographic Location: 41.7225°, -71.4092°	Date: 10/11/2022 Time: 2:35 PM (EDT) to 2:45 PM (EDT)
Notable Site Conditions: - The EPA Inspection Team observed Warwick Pond Outfall #67-2 located at the corner of Stanmore Road and Edgehill Road (refer to Appendix B, Photographs 55 and 56). - Stormwater is conveyed from these two roads, through a ditch complete with several check dams, and into Warwick Pond.	
Site Location #12: Providence Airport Distribution Center Construction Site – Commerce Drive, Warwick, RI 02888	
Geographic Location: 41.7368°, -71.4207°	Date: 10/11/2022 Time: 2:58 PM (EDT) to 3:45 PM (EDT)
Notable Site Conditions: - The EPA Inspection Team observed an active 46-acre construction site scheduled to be a delivery hub for Rhode Island T. F. Green International Airport (PVD). The EPA Inspection Team observed the City's Field Construction Inspector lead the inspection of the construction site. At the time of the inspection, the site was conducting vertical construction on a planned warehouse. The EPA Inspection Team observed the following: - A completed stormwater basin (refer to Appendix B, Photograph 57); - Silt fencing located adjacent to Commerce Drive that was downed and in need of repair (refer to Appendix B, Photograph 58); - Construction workers dewatering cement trucks into the concrete washout area (an earthen pit) (refer to Appendix B, Photographs 59 through 61); and - Trackout onto Commerce Drive, a public roadway (refer to Appendix B, Photograph 62).	