Town of Cumberland, RI

Storm Water Management Program Plan

In Conformance with RIPDES Phase II General Permit Requirements

Original: March 10, 2003

Revised: December 28, 2017

Cumberland
RHODE ISLAND

DEPARTMENT OF PUBLIC WORKS

December 29, 2017

Mr. David E. Chopy
Chief – Office of Compliance and Inspection
RI Department of Environmental Management
235 Promenade Street
Providence, RI 02908

Re: Town of Cumberland Consent Agreement
RIPDES General Permit No. RIR040000
Stormwater Management Program Plan Update

Dear Mr. Chopy:

The Town of Cumberland is pleased to submit the updated Stormwater Management Program Plan (SWMPP) in accordance with the Consent Agreement between RI Department of Environmental Management (RIDEM) and the Town to mutually and satisfactorily resolve the alleged violations set forth in the Notice of Violation, as issued to the Town on May 5, 2017. The development and updating of the SWMPP was the major component of the conditions of the Consent Agreement. Other tasks that were completed in connection with other stipulated conditions of the agreement include:

- Adoption of an Illicit Discharge Detection and Elimination (IDDE) ordinances on July 19, 2017;
- The preparation of an IDDE Plan for the further investigation of the MS4 prioritized outfalls, and inspect the associated catch basins and manholes for illicit connections;
- Completion of a dry weather survey of all stormwater outfalls: and
- Supplemental inspection and cleaning, when necessary, of select catch basins and drain manholes was completed during the field investigation of the outfalls. Copies of the inspection and cleaning activity completed during these field investigations and dry weather survey will be provided as a supplement to this SWMPP.

The Department of Public Works worked very closely with its stormwater consultant, Pare Corporation, who was engaged by the Town to perform the tasks associated with the

compilation of stormwater system data; the oversight of dry weather sampling at the outfalls; and the updating of the SWMPP.

We trust that this submission is consistent with the needs of RIDEM, and meets the requirements of this component of the Consent Agreement. We would also like to acknowledge the efforts of RIDEM to assist the Town during this regulatory process, and we are gratefully appreciative of the direction given by your office during same.

Sincerely,

TOWN OF CUMBERLAND

William S. Murray
Mayor

Robert A. Anderson, Jr., PE
Public Works Director

cc: Ms. Janet L. Coit, RIDEM Director (w/o attachments)

RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES)

NOTICE OF INTENT (NOI)

STORM WATER GENERAL PERMIT FOR SMALL MS4

TOWN OF CUMBERLAND

1. PRINCIPLE STORM WATER MANAGEMENT PROGRAM COORDINATOR:

   Robert A. Anderson, Jr., P. E., Director of Public Works
   45 Broad Street
   Cumberland, RI 02864
   Phone: (401) 728-2400, X143
   E-mail:randerson@cumberlandri.org

2. LEGAL STATUS OF OPERATOR:

   Town Government (public entity)

3. NAME AND ADDRESS OF OPERATOR:
   Town of Cumberland, RI
   45 Broad Street
   Cumberland, RI 02864

4. RECEIVING WATER INFORMATION:
   Blackstone River, Abbott Run, associated streams and ponds
   Watershed Codes 010900030207 & 010900030208

5. FACILITY INFORMATION:

   No municipal facilities are known to have storm water discharges associated with industrial activity.

6. OPERATOR 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: Robert A. Anderson, Jr. P. E.

   Signature: Robert A. Anderson Jr, PE Date: 12-28-17

Town of Cumberland, RI

Storm Water Management Program Plan

Table of Contents

Cover Photo of Howard Pond, by Briscoe Lang

The first draft of Cumberland's Storm Water Management Program Plan was prepared in 2003 by the Southern Rhode Island Conservation District in tandem with Alan Brodd and Nizar Trad in the Department of Public Works.

Ideas for the plan came from a devoted group of citizens and town and state staff, who served on the Storm Water Management Program Plan Steering Committee. They were:

Kathy DiModica
Ed Donnelly
Mike Ethier
Keith Hainley
John Haakenson
Zachery Heath
Lorraine Hynes
Howard Lancaster
Briscoe Lang
Frank Matta
Tom McNulty
Katherine Mello
Jeffrey Mutter
John Nickelson
Joe Pailthorpe
Dennis Racey
Everett Sammartino

The 2017 plan was revised by Pare Corporation, Cumberland Department of Public Works, and several other Town staff members.

CHAPTER I

BACKGROUND, PLANNING AREA DESCRIPTION & FINANCIAL IMPACTS

Chapter I

Background, Planning Area Description and Financial Impacts

Background

One of Cumberland's goals, as stated in its 2016-2036 Comprehensive Plan, is to preserve and protect "natural resource systems, sensitive water resources, and natural habitat" for future generations. The Town has long recognized its dependence on local surface and groundwater for drinking, and appreciates the role the Blackstone River has played in shaping the Town's environment and history.

The development of Cumberland's Storm Water Management Program Plan has provided the opportunity to focus on how day-to-day activities throughout the Town affect these prized natural resources, and to record those activities and effects in one document. The Phase II RIPDES Program provides a reference for the Town to compare its actions, and to seek new methods for enhancing water quality.

Planning Area

The Town of Cumberland lies in the northeast corner of the State of Rhode Island. The Town was primarily mill villages along the Blackstone River in the past century; its location between Providence and Boston, bisected by Interstate 295, makes it attractive to commuters today.

The Phase II Regulatory Area covers the entire southern portion of Town, and the valleys of the Blackstone and Abbott Run on the north, as shown on the map on Page 3. However, the Town has chosen to use the entire Town as the planning area for this Plan.

Financial Impacts

The Town of Cumberland is committed to improve the management of the storm water that it discharges to waters of the State of Rhode Island and Providence Plantations. The Town, with the previous valuable assistance of the Southern Rhode Island Conservation District and a host of citizen volunteers has prepared this storm water management planning document in compliance with RIDEM requirements. This plan has been revised by Pare Corporation and Town of Cumberland staff. Now we need the assistance of RIDEM and the EPA to bring this plan to fruition.

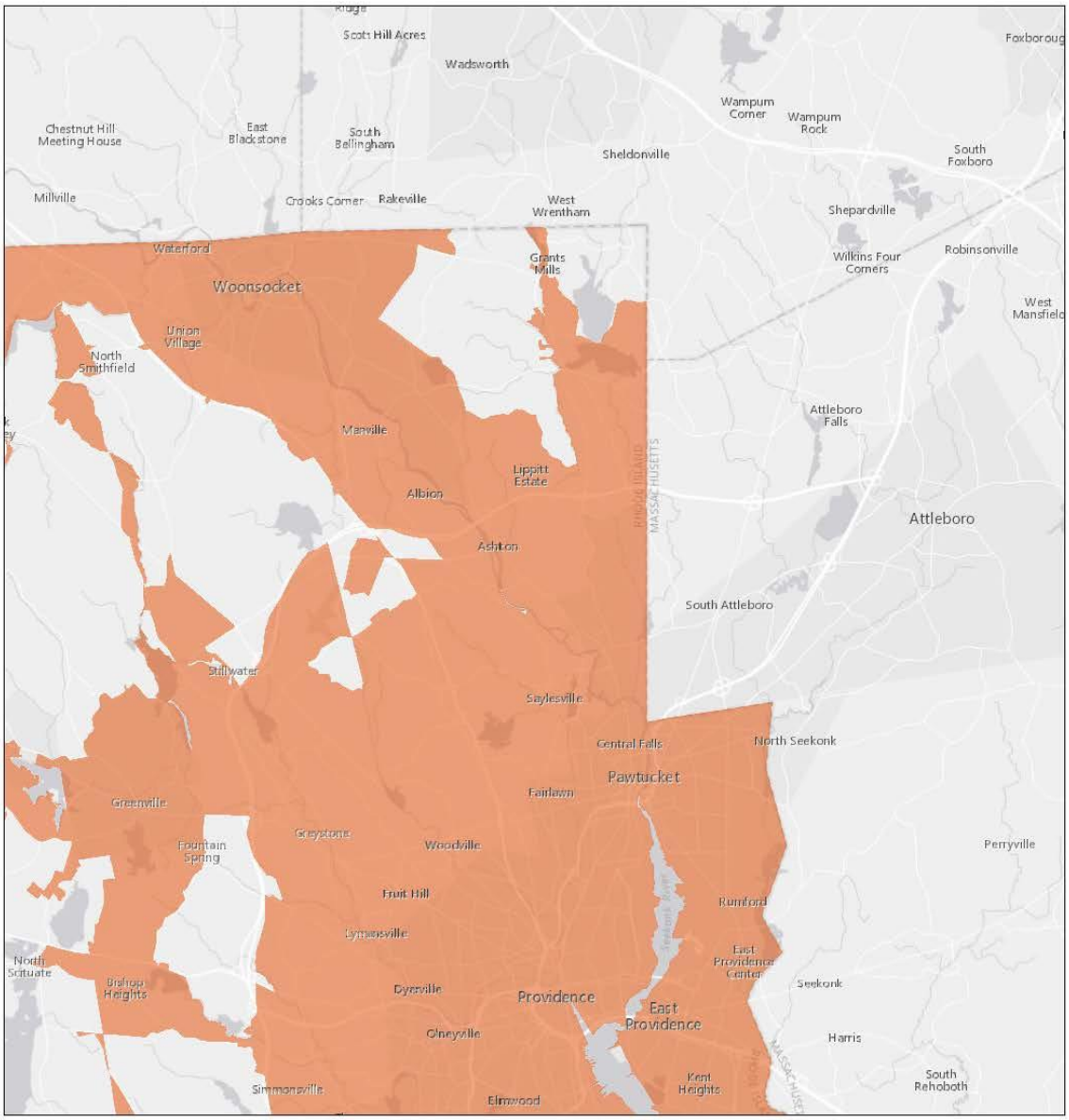
We strongly urge EPA and RIDEM to develop a grant program to assist cities and towns in Rhode Island to come into full compliance with the requirements of the Phase II Storm Water Regulations. We cannot do it alone. The funding sources do not exist at the local level for full implementation of the plan.

Sewer use fees have been passed to help the Town to manage the sewer collection system. Water rates have historically been raised. Taxes have increased steadily over time to pay

for other essential services such as providing educational opportunities for all children, refuse collection, police, rescue and snow removal services. The local taxpayers cannot fund any additional mandated programs at this time.

Mechanisms must be developed to provide for continuity of purpose for our storm water management efforts and other long range plans entered into by the Town of Cumberland. Per the Town Charter all elected officials serve two year terms after which they must win re-election to remain in office. Rapid increases in local taxes would tend to result in turn over in the position of chief executive. The inherent staff changes, which often accompany changes in elected officials, create difficulties in the implementation of long term plans such as this Storm Water Management Program. The innovative development of citizen volunteers willing to shepherd the program and advocate for adequate funding may help to overcome the inherent problems associated with our complex democratic form of government.

RIDEM Environmental Resource Map



CHAPTER II
SWMPP DEVELOPMENT PROCESS

Chapter II

SWMPP Development Process

Development of the 2003 Cumberland Storm Water Management Program Plan involved a coordinated public process organized by the Southern Rhode Island Conservation District (SRICD) and Cumberland's Mayor's Office, Department of Public Works, and Planning Department.

Regular meetings of a full steering committee and its 5 subcommittees (composed of Town staff, elected officials and 11 citizen volunteers, including representatives from RIDOT) were integral to the development of the 2003 plan. The 5 subcommittees, devoted to each of the minimum control measures (public education and outreach/public participation, illicit discharge detection and elimination, construction site storm water management, post-construction storm water management, and pollution prevention/good housekeeping in municipal operations), helped to create and articulate the details of the plan.

Specifically, this public process involved:

Announcement of the Town's solicitation of members for a Storm Water Management Program Plan Steering Committee in 3 local newspapers.

Development of a list of people/organizations who ideally should be involved by the Mayor's Office and the Department of Public Works, with guidance from SRICD.

Outreach by SRICD to those responding to solicitation and the above list, inviting membership.

December 17, 2002-Presentation to Steering Committee members on the Phase II program, and the benefits of better storm water management. Discussion of planning process. Volunteer assignments to subcommittees, and date setting.

January 6-28, 2003-Meetings of 5 subcommittees.

February 6, 2003-Open meeting of the Steering Committee. Advertised in local newspaper. Subcommittees reported on their progress and solicited feedback.

February 24, 2003-A Public Hearing before members of the Town Council and Planning Board, preceded by Notice of Public Meeting.

Following the issuance of the Consent Agreement, the DPW contracted Pare Corporation to assist in revising the 2003 SWMPP. Comments from RIDEM, requirements of the Consent Agreement, and input from Town departments have been incorporated into the current version of the SWMPP.

CHAPTER III
ELEMENTS OF THE SWMPP:
SIX MINIMUM CONTROL MEASURES

Chapter IIIA, B

Public Education and Outreach/Public Involvement/Participation

The Town of Cumberland is required to:

- Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of storm water discharges on local waterbodies and the steps that can be taken to reduce storm water pollution;
- Comply with applicable State and local public notice requirements; and
- Determine the appropriate best management practices (BMPs) and measurable goals for these minimum control measures.

The Town also intends to:

- Focus on establishing and conducting a public participation process.

State of Rhode Island Existing Programs

There are a number of state, regional and national programs and materials on storm water runoff and nonpoint source pollution. RIDEM's Phase II website addresses these, so a discussion of them is not included here.

Cumberland's Existing Programs

Public Education Program

Many local and regional organizations conduct programs and/or produce materials used in Town that address storm water issues, or can easily be modified to include a storm water message. The list in Appendix A includes both existing and proposed activities; it notes the sponsoring organization, name of the program or material, whether it exists or is proposed, target audience, content and benefits for Cumberland.

Public Participation

In preparation of the 2003 SWMPP, town staff in conjunction with Southern Rhode Island Conservation District (SRICD) prepared an outreach plan (Appendix B), which has since been revised to reflect plans for public participation efforts in 2017 and beyond.

The first meeting of the Steering Committee was held on December 17th 2002. Steering Committee members were solicited through the media. The Mayor's Office and the Department of Public Works (DPW) Director created a list of other people/organizations who should be invited to join. Subcommittees were developed to address each of the six minimum control

measures; subcommittee work culminated in a Steering Committee workshop, open to the public, held at the library on February 6, 2003. Subcommittee recommendations were reviewed before the full Committee and interested citizens, with questions and comments. The draft Plan was then noticed and presented to a joint meeting of the Planning Board and Town Council on February 24, 2003.

The Steering Committee provided the framework for the public participation and education programs/goals in the 2003 Plan. The efforts during the 2017 revisions focused on identifying which of the programs/goals had since been implemented or are no longer ongoing, which should remain in the Plan, and which new programs/goals could be included in the revised SWMPP.

Proposed BMPs

The key to effective public education and participation is a coordinated, holistic approach involving all organizations concerned with Cumberland's natural resources. In brief, public education and outreach are best achieved hand in hand with public participation and ownership. Public education leads to participation, participation leads to further outreach, and citizen-to-citizen outreach provides and creates opportunities for education.

The strategies that follow aim to provide this coordinated, holistic approach. The overarching goal is to educate and inform the citizens of the community, securing their support and direct involvement. The Department of Public Works (DPW) will facilitate these strategies over the 5 years of the Plan. Each strategy has been coded, in brackets, with "PEO" representing "meets measures for Public Education and Outreach" and "PP" representing "meets measures for Public Participation."

Strategy I - COMMUNICATION (PEO): Institute a broad range public education campaign with the regular dissemination of information about storm water to government and civic leaders, residents, and businesses. Topics to be addressed should include but not necessarily be limited to: illegal dumping, pet waste, illicit connections/discharges, and on-site storm water management.

The first stage of this campaign will focus on outreach through the newspapers, and explore the use of other media such as local cable television and town websites. Subjects to be publicized over the 5 years include:

a. an outline and timetable for the project;
b. new and post construction issues;
c. efforts in the schools;
d. volunteer group activities, e.g. storm drain labeling, trash clean-up, etc.;
e. contributions homeowners can make;
f. potential and actual town ordinance changes or additions;
g. changes made in Town practices;
h. other such issues of interest to the community.

The DPW will develop a storm water page on the DWP website, which will include informational links such as the URI Storm Water Solutions website and the RIPDES General Permit for Small MS4s, as well as PDFs of the SWMPP and the latest MS4 annual report.

As the storm water program progresses, information disseminated through the media will become specific to challenges faced and/or surmounted in Cumberland. Successes and piloted projects will be highlighted.

In the second phase, partnerships will be forged with environmental, civic and homeowner groups (such as the Blackstone Valley Tourism Council, the Northern RI Chamber of Commerce, etc.), the library and DEM to copy and disseminate brochures and flyers. Two public venues: the Cumberlandfest and Earth Day, will have storm water displays staffed by volunteers distributing flyers and brochures.

Deliverables for this strategy include:

Year 1- storm water resources link on DPW website, one published article, writers' roster, and an analysis of possibilities for utilizing other media.

Year 2 - a list of available materials and organizations who will copy and/or disseminate them, a list of people who are available to speak, 1 published article, and a log documenting what worked and what didn't at the public venues.

Year 3 - reports on a minimum of two public speaking events regarding storm water issues, log for the public events, one article published featuring innovative projects or changes made under the Plan, and a written analysis of the effectiveness of each task performed and venue explored.

Years 4 and 5 - reports on a minimum of two public speaking events regarding storm water issues, logs for the public events, and a written analysis of the effectiveness of each task performed and venue explored.

Strategy II - EDUCATION IN SCHOOLS (PEO): Integrate storm water education that is locally tailored. These curricular changes or additions will aim to introduce the topic to school children in Grade 3 and have annual increments through Grade 11, such that knowledge gained in any particular year builds on that of the last.

The school programs are an integral key to success. Students are both Cumberland's present and future. They educate each other and their parents, participate in volunteer activities, and will become Cumberland's future decision makers. If this is properly integrated into the education system, it will become a "way of life" in the community.

Deliverables for this strategy include:

Year 2 - a comprehensive outline of existing school programs and course content related or associated with storm water management, tabulated by grade and school.

Years 3-5 - reports of changes/additions made to the curricula by grade and efforts/accomplishments in training and/or offering resources to teachers.

Strategy III - CALL TO ACTION (PP): Encourage and support community service in storm water activities, e.g. storm drain stenciling, clean-ups, storm water surveying, educating the public. The DPW will work with the organizations identified in Appendix A, neighborhood groups, commercial, industrial, institutional groups and other civic and volunteer organizations to plan for maximizing participation in community service activities.

Youth Organizations such as Scouts already have activity and advancement programs that include storm water issues. The DPW will obtain details on existing badges and activities, and explore avenues for potential coordination and modifications that will allow these youths to fulfill requirements by working on targeted storm water projects and activities. The High School has a community service learning (SL) graduation requirement. The DPW will explore the feasibility of training high school students in storm water issues, allowing this training to fulfill part of their SL requirement, and utilizing these students to staff educational booths at events.

Deliverables for this strategy include:

Year 2 - a bulleted plan for maximizing volunteer participation and a summary of activities accomplished.

Year 3 - a report on the results of the explorations with the Scouts and the High School and a summary of activities, including recruitment activities carried out with these groups.

Years 4 and 5 - a summary of activities accomplished.

Strategy IV - TRAINING (PEO): Encourage and support training programs. The DPW will use partnerships with government and non-governmental entities to design a training format to include:

a) Identification of training resources
b) Resident education: Residents will need training and education to understand storm water concepts, take individual and neighborhood initiatives, and implement new Town programs,
c) Business, civic & institutional training: Businesses will need to be brought up to speed on their required and voluntary roles.

Deliverables for this strategy include:

Year 2 - training plan.

Years 3-5 - report of activities undertaken and accomplished.

Implementation Schedule

BMP	Year 1	Year 2	Year 3	Year 4	Year 5
Institute public education campaign	Storm water resources on DPW website, 1 published article, writers' roster, analysis of additional media	Materials list, cooperating organizations list, speakers list, 1 published article, festival log	2 public speeches, festival log, 1 published article, written analysis of effectiveness	2 speaking events, festival log, written analysis of effectiveness	2 speaking events, festival log, written analysis of effectiveness
Integrate locally-tailored storm water education		Comprehensive outline of existing school programs and course content, tabulated by grade & school	Review of outside materials, report of changes made by grade, training report, report of resources offered	Report of changes made by grade, training report, report of resources offered	Report of changes made by grade, training report, report of resources offered
Encourage & support community service		Bulleted plan for maximizing volunteer participation, summary of activities accomplished	Report on results of explorations with youth groups, summary of activities including recruitment activities	Summary of activities accomplished	Summary of activities accomplished
Encourage & support training programs		Training Plan	Activities report	Activities report	Activities report

Chapter III C

Illicit Discharge Detection and Elimination Program

The Town of Cumberland is required to:

- ✔ Develop a storm sewer system map, showing the location of major pipes and outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;
- ✔ Develop an ordinance or other regulatory mechanism, a prohibition (to the extent allowable under State, Tribal, or local law) on non-storm water discharges into the municipal separate storm sewer system;
- ✔ Develop a plan to detect and address non-storm water discharges, including illegal dumping into the municipal separate storm sewer system (plan should involve locating problem areas, finding the source, removing/ correcting illicit connections, and documenting actions taken);
- ✔ Educate public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and
- ✔ Determine best management practices (BMPs) and measurable goals for the illicit discharge detection and elimination program.

State of Rhode Island's Existing Programs

There are at least 3 programs and activities that relate specifically to detection and elimination of illicit discharges in Cumberland. These are:

- A TMDL for bacterial impairment of the Blackstone River was approved on 4/22/2013. Several TMDLs for impairments including bioassessments, dissolved oxygen, total phosphorus, and mercury and PCB in fish tissue are scheduled between 2024 and 2028.
- The Eco-Depot, a Rhode Island Resource Recovery Program, provides the opportunity for homeowners to dispose of household hazardous wastes.
- The Rhode Island Department of Transportation (RIDOT) is also developing a Phase II plan for its facilities throughout the state. According to their website, "RIDOT is pledging more than $100 million over a 10-year period to ensure compliance with the Clean Water Act and a number of remedial measures under a consent decree with the Environmental Protection Agency. This initiative will reduce pollution from storm water flowing into Narragansett Bay and hundreds of lakes, ponds, and rivers throughout Rhode Island."

RIDOT has a significant impact in Cumberland because many of the roads in Town are state roads. In particular, much of Route 114 (Broad Street) has no catch basins. As a result, rainfall moves directly down the road, carrying roadway contaminants directly into the Blackstone River. This also poses a particular problem with flooding around Town Hall. These issues are slated to be addressed during RIDOT's Broad Street Regeneration Project, which will include drainage improvements on Broad Street in the towns of Cumberland, Central Falls, and Pawtucket. RIDOT is also considering the implementation of storm water treatment facilities as a component of the project.

Cumberland's Existing Programs

SWMPP Requirement for Illicit Discharge Detection and Elimination Program	Cumberland's Program(s)
Map of storm system	Pare Corporation is in the process of developing a map, which will be completed by March 2018.
Legal prohibition and enforcement	IDDE ordinance
Plan to detect and address illicit discharges	IDDE ordinance
Educational outreach about problem and implications of improper discharges	See Appendix A
Best management practices (BMPs) and measurable goals for the illicit discharge detection and elimination program	See "Proposed BMPs" section of this chapter.

Map of storm system

Pare Corporation used a Global Positioning System (GPS) to locate all municipally-owned storm water outfalls during the summer of 2017. The following attributes were recorded for each outfall: Pipe size, shape, condition, material, issues, outfall name, and whether flow was observed during the dry weather survey. Additional visual observations were recorded as well. Outfall names were assigned based on the Assessor plat and lot on which they are located. Outfalls located within a road right-of-way were assigned the road names. For example, an outfall located on Assessor plat X, lot Y is named X-Y. An outfall located within the Main Street right-of-way is named MAIN.

GPS data were imported into ArcMap, where all associated attributes are stored in a file geodatabase. In addition, a photograph of each outfall was taken and integrated into the map's geodatabase.

Existing storm water structures, previously digitized by the DPW, were added to Pare's map, and were further expanded upon based on record drawings and field observations. The following features are included in the storm system map:

- Outfalls
- Catch basins
- Manholes
- Pipes
- Outfall catchment areas
- Receiving waters
- Inlets/outlets and culverts

The map is anticipated to serve as a living document; new drainage structures will be digitized by the DPW in conjunction with their installation and connection to the system in the field.

Legal prohibition and enforcement

An Illicit Discharge Detection and Elimination (IDDE) ordinance was developed and adopted on July 19, 2017 (Appendix E). The ordinance specifically prohibits the illicit connection and/or discharge to the MS4. The Director of the DPW is granted authorization to suspend or terminate MS4 discharge access to any person in violation of the ordinance.

The ordinance also requires the implementation of Best Management Practices (BMPs) to the extent achievable for activities on properties which "will or may result in pollutants entering storm water, the storm sewer system, or waters of the State."

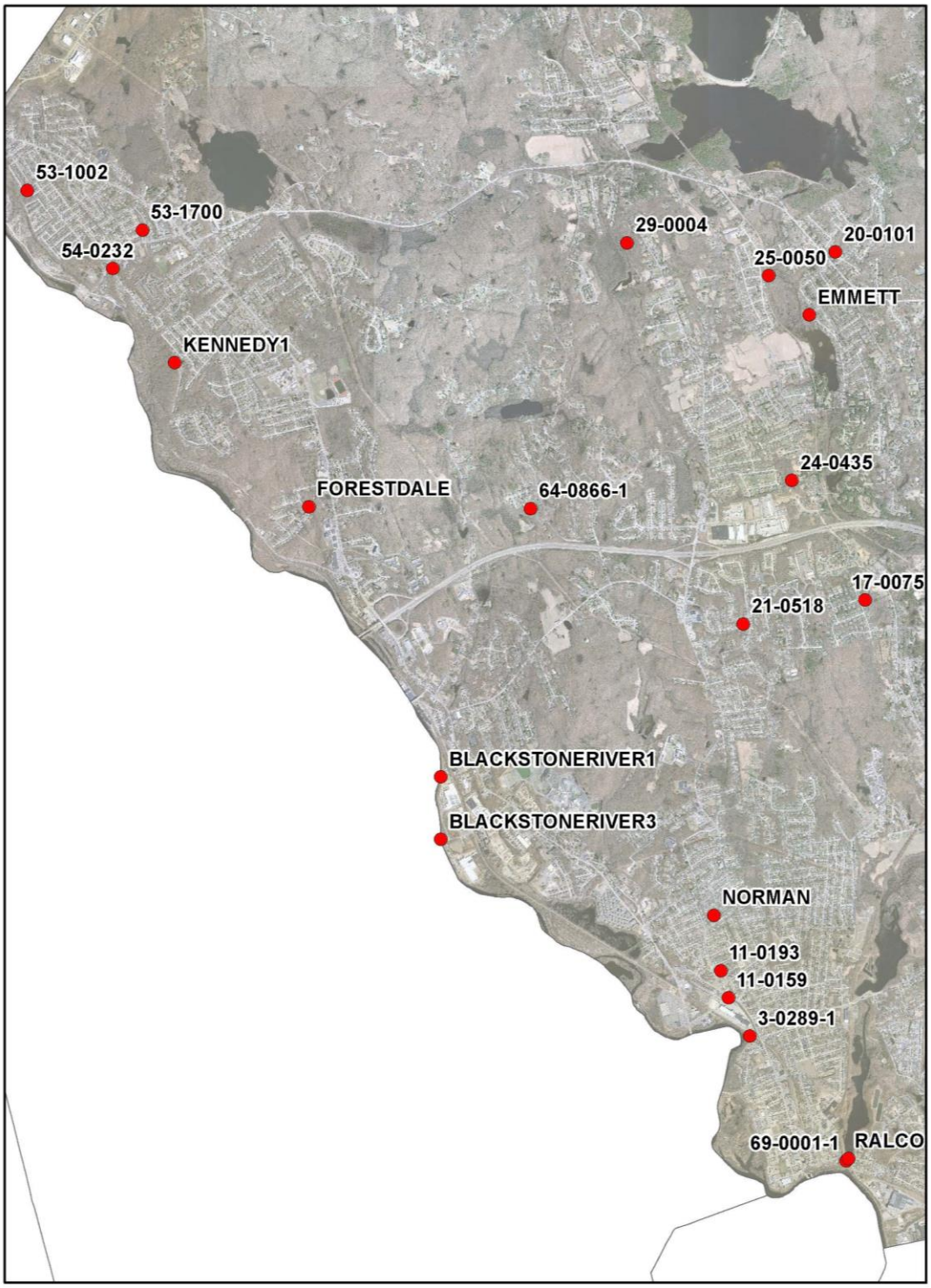
Detect and address illicit discharges

The ordinance includes a provision for the detection and reporting of hazardous and non-hazardous spills. Spills and/or illicit connections may be reported to the DPW Director at any time. The Director will investigate such reports and take appropriate measures to remedy the problem. Standard Operating Procedures (SOPs) for such illicit connections are detailed in the attached IDDE Plan.

As part of compliance with the Consent Agreement, a dry weather survey of all storm water outfalls was performed in order to detect any potential illicit discharges. A total of 21 outfalls were observed to convey flow during the dry weather survey. On September 11 and 12, 2017, flow from these 21 outfalls was sampled and sent for analysis to ESS Laboratory in Cranston, RI. Water temperature, pH, and conductivity were measured in the field by Pare. ESS Laboratory tested the samples for fecal coliform, coliphage, surfactants, chlorine, and ammonia.

Sampling results were sent to RIDEM on November 6, 2017. The Town awaits a response from RIDEM regarding the next steps for illicit discharge investigations. A map of sampled outfalls and sampling results are provided below.

Sampled Storm Water Outfalls



Outfall Flow Sampling Results

Outfall	Odor?	Algae?	Sheen?	Stressed Vegetation?	Coloration/ Staining?	Sedimentation?	Scouring?
11-0159	N	Some green algae at end of pipe	N	N	N	N	N
11-0193	N	N	N	N	N	N	N
17-0075	N	N	N	N	N	N	N
20-0101	N	N	N	N	N	Sediment deposits directly downstream of outfall	N
21-0518	N	N	N	N	N	N	N
24-0435	N	N	N	N	N	N	N
25-0050	Y	N	N	N	Orange stains from iron bacteria	N	N
29-0004	N	N	N	N	N	Sediment deposits directly downstream of outfall	N
3-0289-1	N	N	N	N	Cloudy water	N	N
53-1002	N	N	N	N	N	N	N
53-1700	N	N	N	N	N	N	N
54-0232	N	N	N	N	N	N	N
64-0866-1	N	N	N	N	N	N	N
69-0001-1	Y	Y	Y	N	Orange stains from iron bacteria	N	N
BLACKSTONERIVER1	Y	N	N	N	N	Sediment deposits directly downstream of outfall	N
BLACKSTONERIVER3	N	N	N	N	N	N	N
EMMETT	N	N	N	N	Dark stains on concrete pipe	N	N
FORESTDALE	N	Algae on rocks beneath outfall	N	N	N	N	N
KENNEDY1	N	Algae on rocks beneath outfall	N	N	Dark stains on concrete pipe	N	Yes, discharges to deep pool with eroded banks
NORMAN	N	N	N	N	N	Sediment deposits directly downstream of outfall	N
RALCO	Y	N	Y	N	Orange stains from iron bacteria	N	N

Outfall	Coliphage (PFU/100 ml)	Enterococcus (CFU/100 ml)	Fecal (CFU/100 ml)	Ammonia (mg/l)	Surfactants (mg/l)	Chlorine (mg/l)	pH	Temp (C)	Conductivity (µS/cm)
11-0159	<1	**160**	**2700**	**2.15 (0.10)**	0.03 (0.004)	ND (0.02)	7.05	18.0	671
11-0193	<1	**1800**	**4300**	ND (0.10)	ND (0.004)	ND (0.02)	7.31	18.4	665
17-0075	<1	30	68	ND (0.10)	0.01 (0.004)	ND (0.02)	6.36	18.2	1250
20-0101	<1	30	84	ND (0.10)	0.01 (0.004)	ND (0.02)	7.1	17.5	1240
21-0518	<1	**560**	**520**	0.18 (0.10)	0.02 (0.004)	ND (0.02)	6.54	18.4	837
24-0435	<1	**100**	230	0.14 (0.10)	0.03 (0.004)	ND (0.02)	7.57	19.6	870
25-0050	<1	40	3	0.30 (0.10)	0.01 (0.004)	ND (0.02)	5.8	18.2	905
29-0004	<1	13	120	ND (0.10)	0.005 (0.004)	ND (0.02)	7.26	19.5	617
3-0289-1	<1	<1	**1000**	0.19 (0.10)	0.06 (0.004)	ND (0.02)	6.9	16.4	760
53-1002	<1	**500**	**560**	ND (0.10)	0.02 (0.004)	ND (0.02)	6.42	19.4	1100
53-1700	20	8	10	ND (0.10)	0.02 (0.004)	ND (0.02)	7.4	17.2	1880
54-0232	<1	33	50	ND (0.10)	0.02 (0.004)	ND (0.02)	6.83	15.8	665
64-0866-1	<1	<1	12	ND (0.10)	0.004 (0.004)	**0.07 (0.02)**	7.35	20.3	795
69-0001-1	<1	24	180	**1.14 (0.10)**	0.006 (0.004)	ND (0.02)	6.7	17.6	460
BLACKSTONERIVER1	<1	TNTC	TNTC	**19.3 (0.10)**	0.11 (0.004)	ND (0.02)	7.38	19.1	582
BLACKSTONERIVER3	<1	<1	<1	ND (0.10)	0.07 (0.004)	**0.09 (0.02)**	7.34	21.5	480
EMMETT	<1	14	100	ND (0.10)	0.009 (0.004)	ND (0.02)	**4.6**	18.7	1280
FORESTDALE	<1	**360**	240	ND (0.10)	0.005 (0.004)	ND (0.02)	7.18	18.9	865
KENNEDY1	<1	10	1	ND (0.10)	0.04 (0.004)	ND (0.02)	7.3	17.1	1385
NORMAN	<1	**350**	**1100**	ND (0.10)	0.04 (0.004)	ND (0.02)	7.56	18.6	740
RALCO	<1	<1	<1	0.24 (0.10)	0.006 (0.004)	ND (0.02)	6.5	17.9	515

***Exceeds IDDE threshold**

High priority outfall in accordance with RIDEM IDDE Plan Requirements C (1)

The DPW will continue coordination with RIDEM to identify areas of concern and procedures to address illicit connections and discharges.

Some of these areas of concern include:

Combined Sewer Overflows (CSOs)-Cross connections between the sanitary and storm system may still exist. Originally the mill villages in Cumberland had CSOs, but these are believed to have been separated years ago. There are places in the villages of Ashton and Berkeley where these may still pose a problem.

On-Site Wastewater Treatment Systems (OWTS) (Septic Systems)-There is no septic system review program or pump out ordinance. The Town relies on RIDEM. Black and gray water is sometimes discharged into the storm system, possibly when septic systems are not functioning. When these cases are brought to the Town's attention, the DPW will investigate. The Drinking Water Protection Plan suggests establishing a maintenance and inspection program within designated Wastewater Management Districts. The Plan also suggests that the Town include performance standards for nitrogen in its Water Resource Protection Ordinance.

Currently, there are half dozen projects on the list for sewer extensions, but projects are on hold for now. The Town is wary of the sudden growth that comes with new extensions. Sewer lines are extended to resolve existing septic problems, but often become an avenue for growth. There are some sewered areas where people are still on septic. Mandatory hook-up provisions are not currently enforced. (See Appendix D for the mandatory hook-up language within the Code.)

Pet waste-The ordinance prohibiting pet waste appears under Cumberland Code, Chapter 40, Section 78, which deals with sanitary sewers. Most in Town are not aware that there is an ordinance on the books. This may have to do with its location within the Code.

Auto wastes-Residents can dispose of oil for free at the Town Highway Garage. For disposal of radiator fluids, residents must use the Eco-Depot.

Auto washing-Under Zoning Regulations Article 6, Section11(f), wastewater from auto washing at service stations shall be properly drained on-site with no runoff onto public right-of-way. The language is not explicit about draining to the sanitary or storm system. Charity car washes are held at schools and at banks in the warmer seasons and use biodegradable soaps. Waste wash water typically drains to the nearest catch basin.

*Household hazardous wa*stes- Improper disposal of household toxics (motor oil, paint, lawn care products) is a concern in Cumberland. Residents take waste to the Eco-Depot, which holds disposal events annually in every town in RI.

Pesticide/herbicide/fertilizer use- The Drinking Water Protection Plan makes mention several times of herbicides as potential sources of drinking water

contamination, particularly at orchards near Sneech Pond, and power line and gas lines right-of-ways in wellhead protection areas.

In addition to the sources mentioned above, other likely contributors include: drainage that follows the gravel beds laid out for the sewer system; graywater or black water tie-ins, leaking sanitary sewers, individual residential car washing, spills from roadway accidents, and ongoing drip page from vehicles.

Educational outreach about the problem of illicit discharges and implications:

In 2001, Cumberland distributed to all residents a tri-fold flyer that describes the oil recycling depot at the Town Highway Garage and the state household hazardous waste program at the Eco-Depot in Johnston. These tri-fold flyers are now distributed to all new residents when they receive their recycling containers.

An ongoing recycling effort, coordinated by the DPW, has been focused on maintaining full curbside recycling for multi-family homes in Cumberland. In schools and municipal offices, there is recycling of cardboard and office paper.

Proposed BMPs

Plan to continually detect and address illicit discharges:

The recently approved IDDE ordinance has provided the framework for detection and elimination of illicit discharges. The DPW will continually inspect storm water structures for illicit connections on an annual basis. The Highway Department already conducts inspections and cleaning of catch basins and manholes throughout the year. During these inspections, Highway Department staff check for illicit connections. Now that all outfalls in town have been GPS located, the DPW can conduct dry weather inspections to trace the source of illicit connections via smoke or dye tests, as described in the IDDE Plan.

Educational outreach about the problem of illicit discharges and implications:

In July 2017, a notice of public hearing regarding the IDDE ordinance was published in the Valley Breeze. This hearing allowed residents to voice their opinions about the ordinance and educate them about illicit discharges.

The DPW will provide storm water information to the public on its page on the town website. Literature detailing how residents can become part of the solution to illicit discharges and connections will also be provided in addition to the public education program outlined in Chapter III A/B.

Measurable Goals/Deliverables

The goals/deliverables that will measure Cumberland's success with detecting and eliminating illicit discharges are as follows:

1. Continually address illicit discharges and connections
2. Provide illicit discharge and connection education materials for the public.

Implementation Schedule

BMP	Year 1	Year 2	Year 3	Year 4	Year 5
Continually address illicit discharges and connections	Continue as practice				
Provide public education materials regarding illicit discharges	Provide literature on website				

Chapter III D

Construction Site Storm Water Runoff Control

The Town of Cumberland is required to:

- Have an ordinance or other regulatory mechanism requiring the implementation of proper erosion and sediment controls, and controls for other wastes, on applicable construction sites;
- Have procedures for site plan review of construction plans that consider potential water quality impacts;
- Have procedures for site inspection and enforcement of control measures;
- Have sanctions to ensure compliance (established in the ordinance or other regulatory mechanism);
- Establish procedures for the receipt and consideration of information submitted by the public; and
- Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

The Town also intends to:

- Minimize the potential for turbidity in discharges to surface water supplies, including Abbott Run, Sneech Pond, and Happy Hollow Pond

State of Rhode Island's Existing Programs:

The Rhode Island Coastal Nonpoint Pollution Control Program was one of the first in the nation to be jointly approved by the Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA).

Volume I of the Program documentation prepared by an interagency partnership of the RI Department of Environmental Management, Coastal Resources Management Council and Department of Administration Division of Planning (July, 1995) includes a description of state programs that implement the measures of construction site erosion and sediment control and construction site chemical control.[1] These programs are listed as follows:

- Rhode Island Coastal Resources Management Program (not applicable in Cumberland)
- RIDEM, Division of Freshwater Wetlands Rules and Regulations

[1] *RIDEM Office of Environmental Coordination et. al., Rhode Island Coastal Nonpoint Pollution Control Program, July 1995, Chapter 6.*

- RIDEM Division of Water Resources, Water Quality Regulations and Water Quality Certification Program
- State Enabling Acts Relating to Land Use and Planning
- State Guide Plan
- Rhode Island Department of Transportation, Rules and Regulations Concerning Permission for use of State Highway Rights-of-Way

Cumberland's Existing Programs:

SWMPP Requirement for Construction Site Storm Water Runoff Control	Cumberland's Program(s)
Regulatory mechanism to control: sediment	Cumberland Ordinance Chapter 20, Article III
Solid & sanitary wastes	Cumberland Ordinance Chapter 32
Oil & grease	Cumberland Ordinance Chapter 40
Site plan review procedures include potential water quality impact	Ordinance Chapter 20, Section 62 (sediment); Chapter 30, Article III; Subdivision Regulations
Procedures for site inspection and enforcement	Ordinance Chapter 20, Sections 71, 107, 108
Have sanctions to ensure compliance	Ordinance Chapter 20, Sections 66 & 108; Chapter 34, Section 57
Establish procedures for the receipt and consideration of information submitted by the public	Informal procedures - inspection in response to all calls Record-keeping by each Department

Regulatory Mechanism

Chapter 20 of the Cumberland Ordinances includes an erosion and sediment control ordinance *(Article Ill). Chapter 20,Article III, Division 2 Determination of Applicability, Section 86 Required* , states that it shall be unlawful for any person to disturb any existing vegetation, grade and contour of land in a manner which may increase the potential for soil erosion without first applying for a determination of applicability from the Building Official; after determination of applicability, the owner or applicant has 60 days to submit an erosion and sediment control plan for approval by the Building Official.

The plan shall be consistent with the current RI Soil Erosion and Sediment Control Handbook *(Chapter 20 Section 103).*

Land Development and Subdivision Regulations, Section 5-I states that "a project impact statement may be required by the board…for the purpose of protecting the safety, convenience, and welfare of the inhabitants of the town, and to protect, preserve and maintain the quality of surface and subsurface waters and other natural resources deemed to be of irreplaceable value upon which residents of the Town of Cumberland and others depend, and to determine those conditions tending to adversely affect the environment of the town." The impact statement is to include statements from the Town departments and the Pawtucket Water Supply Board. The applicant must prove to the Planning Board's satisfaction that the proposal will not adversely affect the source of water supply for the Town.

Town Ordinances *Chapter 34 Streets and Sidewalks, Article II Construction, Division 3 Standards, Section 84 Erosion control* requires the permittee to take whatever precautions are required to ensure that runoff will not create erosion and siltation problems during street construction.

Site Plan Review/Site Inspection & Enforcement

The DPW and Building Department are responsible for site plan review, as well as site inspection and enforcement. Procedures for referral to the State of non-compliant construction site operators are already in place.

The threat of sediment as a major water pollutant as noted in *Chapter 20 Land Disturbing Activities, Article III Soil Erosion and Sedimentation Control, Section 62 Findings and purpose. Chapter 20 Article III Division 3 Plans, Section 103 Contents* specifies the content of storm water management and erosion control plans. *Section 106 Review* sets deadlines for review and names reviewing authorities. An in-house design review team consisting of the Town Planner, Public Works Director and Building Official looks at all applications.

This review is documented by use of a sign-off sheet that accompanies every building permit application. *Section 105 Fee schedule for applications* states that the Town Council establishes the fee for site plan review.

The Technical Review Commission reviews proposals for commercial, industrial and multi-family (greater that 6 units) development. Criteria for the review (including drainage) are established in *Section 103 Criteria;* additional guidelines can be established by the Commission through *Section 106 Design review procedures.*

Subdivision proposals are reviewed by staff and the Planning Board. Preliminary plans are to include a sediment control plan and identification of storm water controls. Reviews are to "promote the protection of the existing natural and built environment and the mitigation of all significant negative impacts of any proposed development on the existing environment" *[Section 1-C General purpose of land development and subdivision review rules and regulations, (3)]*.

Under *Section 3-F Required findings*, applicants must demonstrate that there will not be any significant environmental impacts from the work.

Major project proposals may also be distributed to the Recreation Commission, adjacent communities, state and federal agencies for comment *[Land Development and Subdivision Regulations, 5-G (1)(a)]*. The Conservation Commission reviews subdivision proposals.

Inspection and Penalties

Chapter 20 Section 71 provides for periodic inspections by the Building Official, who shall approve an inspection and construction control schedule and maintain a permanent file of all inspections. According to *Section 107Approval*, the Building Official is to be notified at least 72 hours in advance of one's intent to begin clearing and construction work described in the erosion and sediment control plan. *Section* 66 establishes performance bonds, which can be waived by the Building Official except when land-disturbing activities are to take place within 100 feet of a waterbody, within an identified hazard district, or on slopes in excess of 10%. *Section 108* discusses the process in cases of noncompliance (written notice setting forth the corrections required and time limit for completion), and consequences of failure to comply (performance bond subject to notice of default). A final inspection is made and a summary report prepared upon notification of completion *[Section 71(b)(1)]*.

Under the streets and sidewalks ordinance *(Chapter 34)*, the Director of Public Works may refuse to issue subsequent permits until prior work is completed to the satisfaction of the department. A part-time Zoning and Enforcement Officer has recently been hired and assists the building official with building/site duties.

There are general penalty provisions for infractions of the Zoning Ordinance (see *Chapter 1 Section 4).* Each day is considered a separate offense. The Town has recently established a Municipal Court, which will enhance the ability to pursue violations.

Information Submitted by the Public

Proposals for major land development and major subdivision are required to have a public information meeting and a public hearing.

During construction, a drive-by site inspection is conducted by the Building Official and/or Engineer in response to every call made. Calls are received by the Mayor's Office and are redirected to appropriate departments. The DPW monitors incoming complaints as received by telephone, e-mail, citizens complaint forms, or via the town website "Cumberland 311" and "SeeClickFix" reporting system.

Proposed BMPs and Measurable Goals

Regulatory Mechanism

Cumberland Ordinances generally address controls of sanitary wastes, solid wastes/construction debris, concrete truck washout and dust. Presently, single-family home sites are developed with portable sanitary waste structures or dumpsters for

construction debris. No discharge of concrete truck washout to a wetland or to the street is allowed, but rather to a natural or excavated depression on-site that is clearly marked on the plans. Construction site operators are required to submit (and implement) a Storm Water Pollution Prevention Plan consistent with RIDEM RIPDES General Permit for Storm Water Discharge Associated with Construction Activity.

Present erosion and sediment control ordinances are enforced in conjunction with RIPDES Phase II requirements for land disturbance of areas greater than one acre in size. Thus, a RIPDES permit, with a copy of the approved plan, is a condition for approval of the Town's permit. The same is the case for proposals on sites of less than one acre but subject to the regulations of the Freshwater Wetlands Act. In either of these situations, the Town normally accepts State approval as evidence of meeting the Town's requirements, but reserves the option to conduct its own site plan review for proposals within water supply watersheds or other sensitive areas (to be listed). Sites of less than one acre and not subject to Freshwater Wetlands Regulations continue to be subject to the current ordinance, revised as noted above. References are made to the RI Storm Water Design and Installation Standards Manual, and the RI Erosion & Sediment Control Handbook.

The DPW regularly coordinates with developers regarding land disturbance activities and relevant town ordinances. Developers are also informed of water supplies or watershed areas associated with the Cumberland Water Department and the Pawtucket Water Supply Board.

Cumberland does not currently have an ordinance that specifically addresses water resource protection. Therefore, the Model Water Resource Protection Ordinance from Cumberland's Drinking Water Protection Plan (1999) may be considered for adoption.

As a practice, the DPW requires new developments to provide onsite storm water management for roof drains. However, this requirement has yet to be incorporated into the existing subdivision regulations. As such, the Town will revise the regulations to include a provision for onsite roof drain storm water management. The subdivision regulations will also be revised to address pretreatment measures of storm water prior to immediate direct discharge to watercourses or other water bodies.

Measurable Goals/Deliverables

There are 3 deliverables that will measure Cumberland's success with controlling construction site storm water runoff. These are:

1. The model Water Resource Protection Ordinance is considered for adoption.
2. Subdivision regulations are revised to include onsite storm water management for roof drains.
3. Subdivision or other land development regulations are revised to address pretreatment measures of storm water prior to immediate direct discharge to watercourses or other water bodies.

Implementation Schedule

BMP	Year 1	Year 2	Year 3	Year 4	Year 5
The model Water Resource Protection Ordinance is considered for adoption	Adopt new ordinance				
Subdivision regulations are revised to include onsite storm water management for roof drains		Regulation revisions			
Subdivision or other land development regulations are revised to address pretreatment measures of storm water prior to immediate direct discharge to watercourses or other water bodies.		Regulation revisions			

Chapter III E

Post-Construction Storm Water Management in New Development/Redevelopment

The Town of Cumberland is required to:

- Develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs);
- Have an ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls to the extent allowable under State or local law;
- Ensure adequate long-term operation and maintenance of controls;
- Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

The Town also intends to:

- Work with residents on BMP maintenance;
- Investigate additional conservation development strategies;

State of Rhode Island Existing Programs:

The same State programs listed in the Construction Site Runoff Control Chapter also implement measures related to post-construction storm water management. RIDEM also provides a Watershed Coordinator for the Blackstone River Watershed, who works with local groups, watershed councils, universities, local, state and federal agencies and organizations to develop a collaborative action plan to sustain the watershed's unique environment. The 2004 Blackstone River Watershed Action Plan's strategies include identifying opportunities to abate pollution, increasing public awareness, protecting and restoring riparian buffers and wetlands and providing assistance to municipalities on storm water issues and growth management.

Existing Regional Programs:

The Blackstone River Watershed Council has recently been designated as a watershed council by the RI Rivers Council. The Watershed Council is a young but strong community-based organization working to revitalize the environment, historical and economic resources of the watershed. Their current focus, aside from obtaining consistent funding sources, is on watershed outreach efforts.

The efforts of the Blackstone River Watershed Council and others are enhanced by the designation by Congress of the River Valley as a National Corridor in 1986. The National Park Service, two state governments, dozens of local municipalities, businesses, nonprofit historical and environmental organizations, educational institutions, many private citizens, and a unifying commission all work together in partnerships to protect the Valley's special identity and prepare for its future.

The Pawtucket Water Supply Board (PWSB) provides water to Pawtucket, Central Falls, and a part of Cumberland. Additionally, the PWSB sells water wholesale to Cumberland Water Department for distribution throughout the Town. PWSB's water resources consist of surface and groundwater within the Abbott Run watershed, which lies on the east side of Cumberland and extends into the Massachusetts Towns of Wrentham, Plainville, North Attleboro and Attleboro. PWSB owns about 10% of the Abbott Run watershed. Along with land acquisition, PWSB's watershed protection strategies include education and outreach.

Cumberland's Existing Programs:

SWMPP Requirement for Post-Construction Runoff Management	Cumberland's Program(s)
BMP Strategies – Non-Structural	Cumberland Ordinance Chapter 17, Section 6; Chapter 30 Section 102; Subdivision Regulations, Sections 1 & 9; Zoning Articles 6 & 8; Comprehensive Plan Chapter V; Drinking Water Protection Plan; Land acquisition programs
BMP Strategies – Structural	Cumberland Ordinance Chapter 20 Article II; Subdivision Regulations Section 9
Regulatory Mechanism for Post-Construction Runoff Control	Cumberland Ordinance Chapter 20 Sections 36 & 104
Assurance of Long Term Operation & Maintenance	Chapter 20 Sections 38 & 39

BMP Strategies – Non-Structural

Cumberland's Comprehensive Plan includes the following Natural Resources Goal: to preserve and protect "natural resource systems, sensitive water resources, and natural habitat" for future generations.

According to Cumberland's *Subdivision Regulations Section 1 General 1.19 Procedures – Required findings*, all administrative, minor and major subdivision applications shall be found to address a number of standards, including "(3) There will be no significant negative environmental impacts from the proposed development as shown on the final plan, with all required conditions of approval." *Section 9 Supplemental Regulations -Environmental Controls* of the *Subdivision Regulations* specifically notes the need to protect water supply and minimize flood hazards. The Planning Board may vote to require an environmental impact statement "to properly determine the effects of a land development project or subdivision upon the town." This is nearly always required for proposals in the watershed protection areas.

Open space design is encouraged and cluster subdivisions are allowed under the Town's Zoning Ordinances (Cumberland *Zoning Article* 6 *Special Zones Section 2 Planned development overlay district* & *Section 3 Agricultural/residential cluster development).* Use of pervious materials for parking areas within 200 feet of the Blackstone River or other water bodies or wetlands is encouraged *(Article 8 Off-Street Parking and Loading Zoning Section 12.5 Parking Requirements (f)Construction requirements).*

Ordinance *Chapter 30 Planning and Development Article III Design Review Section 102 Purpose of design review process* notes that the design/site review process is to evaluate the impacts of development on natural as well as man-made environments. *Chapter 17 Flood Damage Prevention* notes there can be no outdoor storage of materials in any special flood hazard area which is likely to cause damage to property, create potential fire hazard or pollute waters during flood periods. Construction or development lying wholly or partly in special flood hazard areas (Zone A of the FEMA maps) are to set all buildings back at least the average of adjacent setbacks, or a minimum of 30 feet from the flood hazard area.

The recent updating of the Town's 2017 Water Supply Management Plan (WSMP) included discussions of water quality protection and emergency management measures such as potential hazardous spill locations. The previous 2007 WSMP provided an update of the 2003 Cumberland, Lincoln and Pawtucket Source Water Assessment Plan (SWAP) for the Town. The SWAP was developed in accordance with guidelines and specific details for source water mapping relative to land use changes within wellhead protection areas, surface watersheds, and potential pollution sources identified within the wellhead protection areas and surface watersheds. The Cumberland Water Department is currently in the process of reviewing the 2007 SWAP to determine the necessary updates and revisions that may be required.

The Town of Cumberland has been successful in using State funding sources such as Water Resources Board and Open Space and Recreation grants coupled with local open space acquisition funds to acquire land in sensitive watersheds. The Pawtucket Water Supply

Board owns property directly bordering a number of its water supply reservoirs. A Cumberland Land Trust has been established to preserve open space in the Town.

BMP Strategies - Structural

Cumberland Ordinance *Chapter 20 Land Disturbing Activities* includes a holding pond ordinance *(Article II). Section 32 Scope* states that when a landowner or developer has demonstrated to the town that property cannot be developed without an aboveground holding pond [by meeting the criteria in *Chapter 20 Section 104 Performance principles (4)],* the pond shall be subject to the provisions of *Article II,* which are primarily design specifications. *Subdivision Regulations Section 9 Supplemental Regulations - Environmental Controls 9.2 Environmental review* includes the statement, "The board will give consideration to the simplicity, reliability and feasibility of any control measures proposed and the degree of threat which may result if the control measures fail."

To date, the following structural BMPs have been used in Town:

- Wet pond
- Dry extended detention pond
- Infiltration basin
- Infiltration trench (galley)
- Grassed swale
- Rapid sand filter
- Swirl separator

Regulatory Mechanism

Ordinance *Chapter 20 Land Disturbing Activities Article III Soil Erosion and Sedimentation Control Division 3 Plans Section 104 Performance principles* lays out performance principles for erosion and sediment control plans; *20-104 (4)* states that post-development runoff rates shall not exceed predevelopment rates. *Chapter 20 Article II Holding Ponds Section 36 Penalty* states that any person who builds or alters any holding pond in violation of any approved detailed statement or plan is subject to punishment in accordance with *Section 1-4.*

Assurance of Long-Term Operation & Maintenance

Structural BMPs in a subdivision are located on a privately-owned lot, and the owner is responsible for maintaining, repairing, and replacing the structure as needed *(Chapter 20 Land Disturbing Activities Article II Holding Ponds Section 38 Specifications* & *Section 39 Liability).* Public Works currently does not have the staff to inspect and enforce maintenance, but does periodically monitor the drainage conditions of the existing facilities.

Proposed BMPs and Measurable Goals

The DPW has periodically performed reviews of the Town's development ordinances and subdivision regulations including the holding pond ordinances and water quality protection measures that apply to all land disturbance within the Blackstone River as well as drinking water watersheds. Special attention is given to encourage reductions of impervious cover. Where appropriate, references such as the Rhode Island Storm Water Design and Installation Standards Manual are cited rather than specifying standards in the ordinances. Many of the specific suggestions for revision are included in the Town's Drinking Water Protection Plan.

The Town's policy of private ownership of detention (holding) ponds should be revisited. Responsibility for operation and maintenance can be burdensome for a homeowner, and current enforcement of maintenance is challenging. Strong consideration of the formation of homeowners' associations is recommended to achieve equitable maintenance responsibilities. Selective inspections are recommended for structures in critical resource areas.

BMP Strategies

The Town continues to consider revisions to the holding pond ordinance specifications (*Chapter 20 Section 38 Specifications)* and the subdivision regulations to establish storm water performance standards for quantity and quality control in conformance with Rhode Island's Storm Water Design and Installation Manual.

Regulatory Mechanism

The Town will review its ordinances and regulations in a holistic manner and revise as necessary to provide clear, concise language that provides protection of all water resources from the impacts of storm water runoff. Procedures will be included for: a) coordination of local and State post-construction storm water management in new and redevelopment permitting and referrals for enforcement actions; b) preliminary coordination meetings with representatives of construction projects, to be held prior to the development of any engineering design work; c) referral of new discharges of storm water associated with industrial activity.

Assurance of Long-Term Operation & Maintenance

The Town will re-evaluate its policy on holding pond ownership. The Planning Department will develop a list of existing structures and prioritize them for inspection and enforcement based on their potential impact on critical water resources. As discussed in previous chapters, Town staff will continue to be required to hold certifications/training regarding BMP inspection and maintenance. All new BMPs on developments greater than 1 acre will be inspected, as part of the final inspection. The Town will assure that training is available to homeowners on BMP inspection and maintenance, and onsite source reduction. Procedures for tracking O&M and enforcement will be developed.

Measurable Goals/Deliverables

There are 5 goals that will measure Cumberland's success with post-construction runoff control over the next five years. These are:

1. The policy on ownership of holding ponds is re-evaluated.
2. Staff is required to hold certifications/training in site plan review, inspection and maintenance.
3. Procedures are developed for tracking and enforcing operation and maintenance of Best Management Practices.
4. Training opportunities are provided to homeowners and commercial developers on inspecting and maintaining structures, and onsite source reduction.
5. Strong consideration of the formation of homeowners' associations is recommended to achieve equitable maintenance responsibilities.

Implementation Schedule

BMP	Year 1	Year 2	Year 3	Year 4	Year 5
The policy on ownership of holding ponds is re-evaluated	Incorporate new policy in ordinances				
Staff certifications/training	Continue to implement	Continue to implement	Continue to implement	Continue to implement	Continue to implement
Procedures are developed for tracking and enforcing O&M of BMPs			Adopt procedures		
Training opportunities are provided to homeowners and commercial developers			Offer 4 hours of training		
Strong consideration of the formation of homeowners' associations	Draft ordinance revisions to include homeowners' associations	Revise ordinance(s) as necessary			

Chapter III F

Pollution Prevention/Good Housekeeping for Municipal Operations

The Town of Cumberland is required to:

- Identify all operations such as activities and facilities that have a point source or the potential for a point source discharge of pollutants to the storm system or waters of the state;
- Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the storm system (includes both facilities, and operation and maintenance activities);
- Develop inspection procedures and schedules for long-term operation and maintenance of structural and non-structural controls within the storm system;
- Include employee training on operation and maintenance of BMPs, and how to incorporate good housekeeping/pollution prevention techniques into municipal operations;
- Implement a site specific SWMPP developed for each facility that discharges storm water associated with industrial activity.
- Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

State of Rhode Island Existing Programs

There is at least one state program that relates specifically to pollution prevention in municipal operations.

Rhode Island's Statewide Planning Program houses the Technology Transfer Center, which publishes quarterly newsletter for Department of Public Works (DPW) employees throughout the state. The newsletter has covered such topics as spill prevention and use of alternative materials in past issues. The Center also offers regular training sessions for municipal employees. In the past two years, the center has held 45 workshops that involved a total of 4,000 participants. The Center devoted one of these sessions entirely to Phase II, and they focused another workshop on storm water regulations. A representative of the Technology Transfer Center has indicated that they are not offering any trainings specific to Phase II and particularly Good Housekeeping for Municipal Practices. Collaboration, however, does seem possible.

Cumberland's Existing Programs

SWMPP Requirement for Pollution Prevention for Municipal Operations	Cumberland's Program(s)
Activities and facilities that have a point source or the potential for a point source discharge of pollutants to the storm system or waters of the state	Does not apply; no such operations in Cumberland.
Operation and maintenance program to prevent or reduce pollutant runoff from municipal operations into the storm system	Not covered, though some practices to prevent or reduce pollutant runoff are in place. Not yet a comprehensive concerted effort.
Inspection procedures and schedules for long-term operation and maintenance of structural and non-structural controls within the storm system	Catch basins are cleaned twice each year.
Employee training on operations and maintenance of BMPs, and how to incorporate pollution prevention/good housekeeping techniques into municipal operations.	Employees are educated regarding storm water and BMPs as part of standard job training
Site specific SWMPPs for each facility that discharges storm water associated with industrial activity	Does not apply; no such operations in Cumberland.
Appropriate best management practices (BMPs) and measurable goals for this minimum control measure.	See last 2 pages of this chapter.

<u>Operation and maintenance program to prevent or reduce pollutant runoff from municipal operations into the storm sewer system:</u>

There are 8 municipal practices identified as impacting storm water runoff (See Appendix H). A number of proposed practiced from the 2003 SWMPP have since been implemented. Following are descriptions of current practices.

> *Construction:* The Town does not frequently undertake construction activities. When it does, the Town is subject to all of the same regulations as any other construction project in Cumberland.

Snow removal: Snow is plowed to the sides of parking lots and streets and left to melt on-site. There is no pick up and removal of snow to another location.

Stabilization of roadsides: Road repaving projects do not disturb the adjacent ground of the roadway. Occasionally, the Town will undertake projects to reestablish vegetation or placement of rip-rap on unstable areas.

Paving: Paving projects are contracted out on a two-year basis by the Town's Engineering Department. Contract specifications adhere to guidelines established by the American Asphalt Association. This includes direction against paving in the rain since it is difficult to get a good seal. Paving operations are typically overlay operations with no disturbance to shoulders or roadsides.

Road deicing: Cumberland uses a 1:1 ratio of sand to salt to deice roads. The ratio of salt has increased since the first iteration of this plan. The decrease in sand has lessened the strain on sediment in catch basins and therefore require less maintenance.

Sanders are all adjusted in November to service specific neighborhoods throughout the snow and ice season. That is, the spreaders are tuned for applying more or less sand/salt, depending on the size of roads in a specific neighborhood. All 8 sanders are new vehicles.

For salt storage, there is one indoor facility at the Town Highway Garage, and another at Tucker Field on Mendon Road.

Road sweeping: Town parking lots and the 300 miles of local and secondary streets are swept annually using a wet process. Sweeping begins in late April (after Easter), and continues for three months until completion. The Town also sweeps paved areas on school properties. Sidewalks are swept in April, including sidewalks on state roads. There are no records and logs kept of this activity. Sweepings are recycled for use as asphalt.

Through the Mayor's 5-year Community Appearance Initiative, the Town recently acquired a street vacuum, affectionately known as the "Cat in the Hat Machine." The machine is used to remove garbage from streets, sidewalks, and public spaces. It runs on a daily basis from April to November, weather permitting.

Animal waste: The Town has placed signs around Cumberland reminding residents to pick up their animals' waste. However, many signed have been vandalized or illegally removed. The town also provides dog waste bags at the back gate of the Monastery for residents to use.

Tucker Field, the School's main recreation facility, has signs prohibiting dogs. Goose droppings, however, are a problem at this location. Geese congregate on the grass near the banks of an isolated pond on the property.

Spill prevention and control: The Town Highway Garage stores 4,000 gallons of diesel fuel in an above ground tank, and 6,000 gallons of regular fuel in an above ground tank. Several measures are utilized to prevent spills; these include an alarm

system and triple wall protection on the above ground tanks. The Highway Garage crew does preventive maintenance on tank valves and pumps. Spill kits are available and kept on fueling trucks and emergency vehicles.

Fuel is delivered to the tanks of the Highway Garage by an outside vendor who is responsible for preventing spills during transfer operations. There is currently no protocol laid out for fuel delivery in the contract with this vendor.

Vehicle maintenance: Fleet vehicles at the Highway Department consist of 21 trucks. Vehicles are inspected for leaks and maintained every 3,000 miles when they come in for service. Maintenance is conducted inside the garage.

The interior of the Highway Garage is cleaned by regular power washing. Any waste that washes off the floors and equipment goes into floor drains that connect to the sanitary sewer system. There are no oil separators.

The Highway Garage has a storage tank for recycling spent oil that is used to power a waste oil heater. Residents can also dispose of oil here.

School buses are contracted by the Durham School Services, formerly the Durham Bus Company. The Cumberland School Department presently has seven (7) vehicles, including four (4) vans, two (2) pick-up trucks, and a food service truck. All are scheduled for maintenance at the usual periodic mileage intervals, which includes fluid checks and leakage inspection.

The Water Department has 10 vehicles including pick-up trucks, a van, and 2 back hoes. Maintenance is done at the Town Highway Garage or contracted out. Water Department crew do oil changes of their own vehicles at their garage at Sneech Pond.

Rescue has 4 vehicles that are maintained off site by a contractor. The Department does do oil changes off site. There is no spill prevention or response plan. The department does not know whether the drains lead to the sanitary or storm sewer system.

The Police Department has 19 automobiles and 2 motorcycles. All maintenance, washing, and fueling is done off site. (The 4 Fire Districts operate independently and do not fall under the Town of Cumberland' s purview.)

Vehicle washing: Most Town vehicles, including those from the Water Department, are washed outside the Town Highway Garage. Waste water flows off the site into a catch basin at the bottom of Blackstone Street. It is not possible to wash on gravel or grass because the entire apron around the garage is asphalt.

Several other vehicles are washed at the Monastery, a Town-owned park that includes the public library and some garage facilities. Sanders are washed on a gravel road at the Monastery after each sanding operation. And all school vehicles are also washed at the Monastery. Wash water flows into a grassy area and dissipated into the ground.

From May to September, the High School allows the use of its property for numerous charity car washes. Waste wash water flows into nearby catch basins. All vehicles are washed with biodegradable soaps.

The 4 Rescue vehicles are washed on-site at the Mendon Road station. Wash water drains off to a grassy area and soaks into the ground.

Vehicle Fueling: The only fueling takes place at the Highway Garage.

Pesticide/ herbicide/fertilizer use: The Town uses 1,400 pounds of fertilizer on 23 ballfields. The Town also uses 50 gallons of Round Up to make 500 gallons to treat roadsides, and the 12 miles of sidewalks (to kill weeds growing between the cracks).

Cumberland schools use 20 gallons of Roundup to eradicate poison ivy, and about 20 pounds of fertilizer once/year on Tucker Field. Remaining school grounds are fertilized by leaving grass clippings in place.

The Youth Soccer Program uses a total of 4,034 pounds of fertilizer per year on its 4 fields (field at Cumberland Hill Elementary School, Tucker Field, Jr. Field at high school, and Diamond Hill Park.

Mixed into some of these fertilizer applications are crab grass preventer, grub preventer, and weed control chemicals.

At the cemeteries there is no pesticide, herbicide or fertilizer use. Cutting grass is the only lawn care activity.

Catch basin cleaning and inspection: Standard inspection procedures have been established for catch basin inspection. Catch basins are cleaned twice annually as needed, but some require additional cleaning following nearby construction activities or water main flushes. Highway staff are aware of these areas that require additional cleaning and address them as needed.

The Town has developed a cleaning sheet to be filled out for each catch basin cleaning that includes an inspection section that can be used to help detect potential illicit discharge problems, and determine whether more frequent or less cleanings are necessary.

Inspection procedures and schedules for long-term operation and maintenance activities for structural and non-structural controls within the storm system:

The Town's estimated 2,400 catch basins are cleaned twice each year with a clamshell device between April and September. The Highway Department begins its cleaning effort at one end of town and works its way to the other end of Town. The Highway Department maintain a record log of all catch basin cleanings and inspections. This log book is kept in the clamshell vehicle used to clean catch basins. A copy of data recorded in the log book for catch basins inspected during the 2017 dry weather survey will be provided as a supplement to this SWMPP.

Manholes are routinely inspected and cleaned as part of the catch basin program. In general, there are not many manholes in Cumberland's storm system.

The schools' 25 catch basins are not currently included in the Town's twice annual cleaning program.

The Town does not own or maintain any swales or detention basins, and does not currently inspect basins maintained by others.

Employee training on operations and maintenance of BMPs, and how to incorporate pollution prevention/good housekeeping techniques into operations:

Current education for town employees comes from the Technology Transfer Center, and occasional safety trainings by the Rhode Island Interlocal Trust and Beacon Insurance, both of whom insure the Town of Cumberland.

Faculty in the schools' science departments have all been to safety training. They have Standard Operating Procedures in place and regular inspections by the Occupational Safety and Health Administration (OSHA).

Procedures for the proper disposal of waste removed from separate storm sewers:

Floatables and dredge contributions to the system are minimized through regular street and sidewalk cleanings with the street vacuum.

Floatables and dredge material that do make it into the system are separated from catch basin material and put into a dumpster. Remaining waste material from catch basin cleanings is hauled to a local asphalt plant and quarry for recycling.

Consent Agreement BMPs

In lieu of a penalty for non-compliance, RIDEM required the DPW to purchase a drainage camera system and mini excavator. These were purchased in 2017 and will henceforth be implemented in regular maintenance of storm water structures. The mini excavator will be used to access areas that are not easily reachable in order to preform work relating to storm water structures and facilities. The mini excavator will also be used to remove debris from wetlands and outfalls. The camera system will be used to check the condition of drainage pipes.

Proposed BMPS

Operation and maintenance program to prevent or reduce pollutant runoff from municipal operations into the storm sewer system:

From the municipal operations reviewed by the Steering Committee, members found practices to be adequate within 4 of these areas. Several improvements in practices are recommended for 7 areas. The Committee also discussed possible improvements in another additional area (pesticide/herbicide/fertilizer use), but had no specific recommendations.

Construction: There are two recommendations that come from the RIPDES General Permit.

Ensure that new flow management projects undertaken by the Town are assessed for potential water quality impacts and existing projects are assessed for incorporation of additional water quality protection devices or practices.

Develop procedures for implementing proper erosion and sediment and water quality controls for all construction projects undertaken by the operator including roadway re-paving and flood control projects. The plan must identify all planned major capital improvements and opportunities to improve storm water quality management for municipal new development and re-development.

Stabilization of roadsides: There is one recommendation that comes from the RIPDES General Permit.

Establish procedures to minimize erosion of road shoulders and roadside ditches by requiring stabilization of those areas. Some recommended methods may include rip rap or gravel, to reduce the velocity of the storm water runoff, or planting of grass, shrubs or trees.

Road deicing: Steering Committee members recommend:

Continuing land protection efforts at Sneech Pond, one of the Town's main drinking water supplies, using federal, state, and local sources of funding.

Road sweeping: There are three recommendations for improving road sweeping practices:

Create a record keeping system to document all sweeping activities.

Identify areas of Town that require more frequent sweeping based on complaints, the high potential for sediment accumulation, and catch basin inspection and cleaning.

Increase overtime funding to run the sweeper on two shifts instead of one so that sweeping gets completed earlier in the season. Also pursue acquisition of a new sweeper if funds are available to further reduce the overall time frame for annual street sweeping.

Spill prevention and control: Two improvements are critical to developing spill prevention and control practices within the Town of Cumberland:

Develop a spill prevention and control plan, and train all employees accordingly.

Develop a specific protocol for fuel deliveries to the Highway Garage in conjunction with fuel suppliers. Make the protocol part of future contracts.

Vehicle maintenance: To prevent impacts to storm water from vehicle maintenance practices, the Steering Committee identified 2 improvements:

Perform brief inspections of vehicles for leaks before each trip. This should be implemented in all Departments that rely on the use of Town or School vehicles.

Conduct dye tests on Rescue Department drains to determine point of discharge. Follow up with a response if necessary.

Landscaping and lawn care: Town landscape and lawn care practices are said to have been developed over time. The need to eradicate plants along roadways is an imperative for safe road use. The chemical eradication of poison ivy has averted the past problems of Town roadway crews developing severe rashes.

The Town has purchased 2 flail mowers, which help in the mechanical removal of unwanted vegetation and reduce the use of chemical removal.

Measurable Goals/Deliverables

There are 4 goals/deliverables that will measure Cumberland's success with pollution prevention and good housekeeping for municipal operations over the next 5 years.

1. Development of a record keeping system for all sweeping activities.
2. Development of a spill prevention and control plan. This will include a specific protocol for fuel deliveries to the Highway Garage.
3. Improved vehicle maintenance practices with brief inspections for leaks before each trip with all Town vehicles.
4. Development of Standard Operating Procedures that prevent impacts to storm water quality.

Implementation Schedule

BMP	Year 1	Year 2	Year 3	Year 4	Year 5
Development of a record keeping system for all sweeping activities	Develop	Implement			
Development of a spill prevention and control plan. This will include a specific protocol for fuel deliveries to the Highway Garage.	Develop plan, protocol	Implement			
Improved vehicle maintenance practices with brief inspections for leaks before each trip with all Town vehicles.	Implement	Continue as practice			
Development of Standard Operating Procedures that prevent impacts to storm water quality.	Research and develop	Implement	Continue as practice		

CHAPTER IV
ADDITIONAL ELEMENTS OF THE SWMPP

Chapter IV A

Storm Water Abatement Opportunities

The Town of Cumberland has not been in a financial position to pursue a storm water abatement program. The Town proposed a project for "319" funding to address concerns at the Martin Street outfall, but was unsuccessful in obtaining funding.

Within the Town, a partnership involving Pawtucket Water Supply Board, Northern RI Conservation District, USDA Natural Resources Conservation Service and RIDEM was successful in the design and installation of created wetlands on Curren Brook, which empties into Robin Hollow Pond. The created wetlands (with sediment forebay) treat for sediment, nutrients and pathogens.

A Source Water Assessment for Cumberland, Lincoln, and Pawtucket was completed by RI Health and URI Cooperative Extension in April 2003. Storm water abatement opportunities such as limiting impervious surfaces are identified in the Assessment. The Town's Drinking Water Protection Plan identified the Abbott Run and Sneech Pond watersheds as areas of concern, but does not identify site-specific abatement opportunities. Several large parcels of land have been purchased for open space protection in these watersheds. The Source Water Assessment identifies pollution prevention methods for these areas of concern. For Sneech Pond, in particular, pesticide and herbicide management on the nearby apple orchard and electrical transmission line easement could alleviate the pollutant load in the stormwater contributing to the Pond.

A number of waterbodies in Town are on RIDEM's 2014 303(d) list, and several TMDLs have been developed to date. The map on page 42 shows the location of those waterbodies. The table below lists the waterbodies, the cause for impairment, and priority ranking as of October 5, 2017 (based on the 303(d) list):

Waterbody ID	Name	Cause/Impairment	TMDL Schedule
RI0001003L-02	Valley Falls Pond	Aquatic Macroinvertebrate Bioassessments, Lead, Dissolved Oxygen, Fecal Coliform	2024-2026
RI0001003R-01A	Blackstone River	Benthic-Macroinvertebrate Bioassessments, Eurasian Water Milfoil, Myriophyllum spicatum, Dissolved Oxygen, Phosphorus, Mercury and PCB in Fish Tissue	2024-2028
RI0001006R-01A	Abbott Run Brook North & Tributaries	Cadmium	2026
RI0001006R-01B	Abbott Run Brook South & Tributaries	Cadmium	2026

The following water bodies have approved TMDLs:

Waterbody ID	Name	Cause/Impairment	TMDL Approval Date
RI0001003R-01A	Blackstone River	Cadmium, Lead, Enterococcus, Fecal Coliform	4/22/2013

Once a TMDL is approved for any of these waterbodies, the Town will determine the land areas contributing to identified discharges, confer with RIDOT as to ownership of the discharges, and comply with the provisions of the General Permit, Section IV.D.

In addition, several water bodies in Cumberland have been identified by RIDEM as "special resource protection waters." These water bodies are currently of high quality but are at risk from a variety of pollution sources, including storm water. The DPW will pay particular attention to MS4 structures in the vicinity of these water bodies in order to protect them. These water bodies (as they appear in the 2016-2036 Cumberland Comprehensive Plan) are as follows:

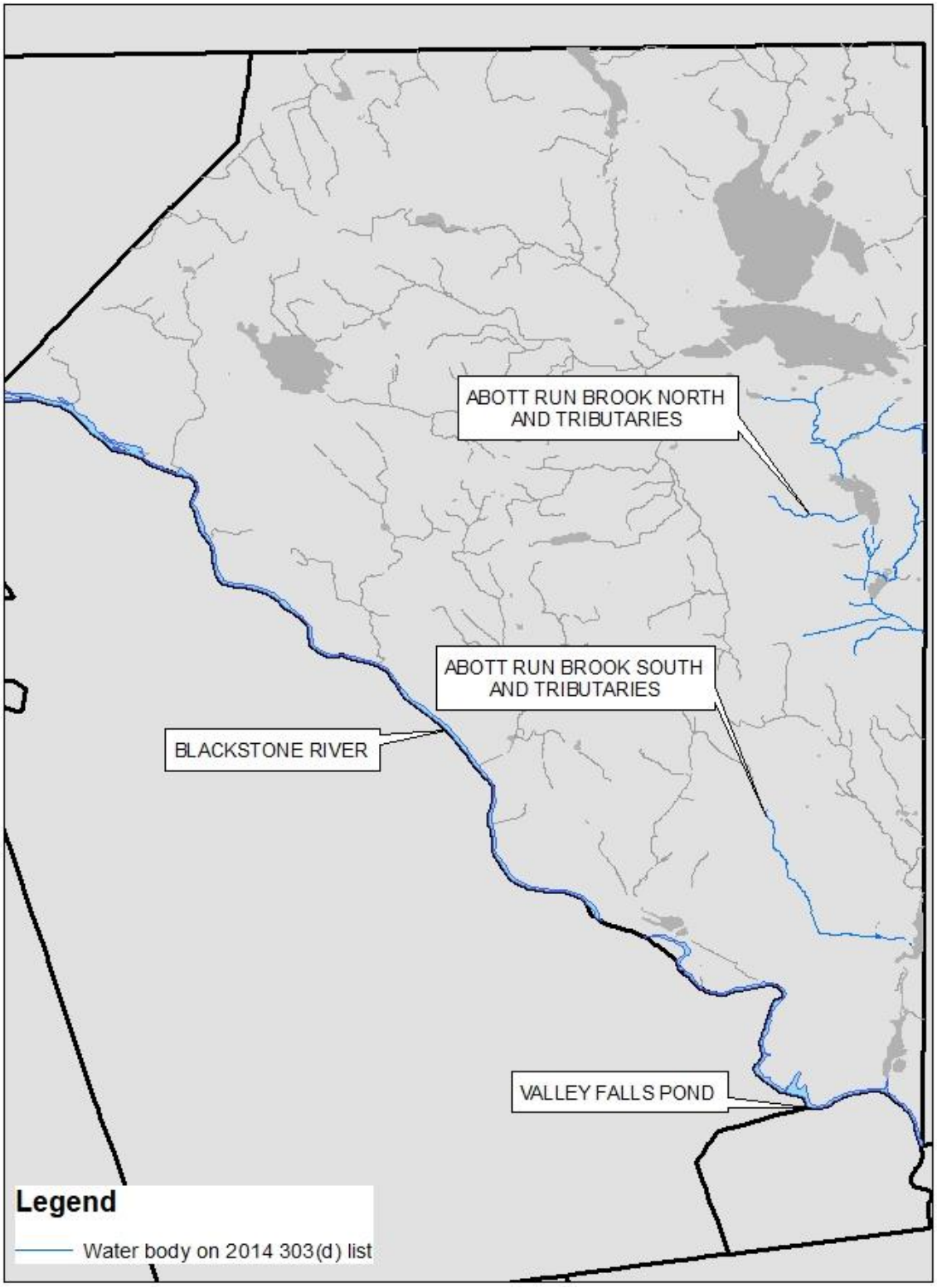
- Reservoirs: Diamond Hill and Pawtucket (Arnold Mills)
- Ponds: Happy, Robin Hollow, Sneech, and Valley Falls
- Brooks: Abbott Run, Ash Swamp, Crookfall, East Sneech, and Longbrook

At its December 17, 2002 meeting, the Storm Water Management Program Plan Steering Committee identified the following as important water resources and concerns:

- Flood plain protection from development (i.e. Manville Hill Rd., Berkeley area)
- Sneech Pond protection from runoff and potential septic system overflow
- Pound Road Pond & streams - runoff from lawns carrying fertilizers
- Tributaries with unidentified storm pipes going into the Blackstone River
- Martin Street runoff into Blackstone River
- Abbott Run River -protection from encroachment and runoff
- Millers River water quality improvements.

Please refer to the IDDE Plan for further information regarding protection of these resources and abatement of illicit discharges.

Cumberland Water Bodies on 2014 303(d) List



Chapter IV B

Storm Water Source Reduction and Advanced Management

Cumberland is divided into 3 very distinct areas: the older, industrial sector of Town along the Blackstone River; the older residential and commercial areas, consisting of a number of villages scattered throughout the town; and the more rural and newer residential area to the north. Defining a comprehensive vision for the Town has, as a result, been difficult.

The 1991 Comprehensive Plan does demonstrate a strong desire to control growth and protect the Town's precious water resources. The Comprehensive Plan includes open space recommendations that have since been incorporated into the Town Code of Ordinances (for cluster development), and in continued land protection efforts (through grants and town-controlled open space funding).

> Open space design is encouraged and cluster subdivisions are allowed under the Town's Zoning Ordinances (Cumberland Ordinance *Appendix B Zoning Article* 6 *Special Zones Section 2 Planned development overlay district* & *Section 3 Agricultural/ residential cluster development).*
>
> The Town of Cumberland has been successful in using State funding sources such as Water Resources Board and Open Space and Recreation grants coupled with local open space acquisition funds to acquire land in sensitive watersheds. The Pawtucket Water Supply Board owns property directly bordering a number of its water supply reservoirs. A Cumberland Land Trust has been established to preserve open space in the Town.

In addition, the Code of Ordinances includes an item to reduce the amount of imperviousness. It recommends that parking areas within 200 feet of the Blackstone River or other water bodies or wetlands be made of pervious materials *(Article 8 Off-Street Parking and Loading Zoning Section 1 Parking Requirements (f) Construction requirements).*

Infill development is an important priority for Cumberland. The Town is active in supporting the efforts of Valley Affordable Housing (VHA), a non-profit organization that is affiliated with the Cumberland Housing Authority. VHA has been working to purchase and rehabilitate old mill buildings for low and moderate-income housing. It has completed several projects in Lonsdale Mill Village, and is pursuing additional projects in Ashton and Berkeley villages. The Town's Community Development Block Grant program supports these efforts with streetscape and other improvements in VHA project areas.

With initiative coming from the Mayor's office, Cumberland is giving renewed attention to growth management issues, many of which relate directly to source reduction of storm water. Last Spring, the Town organized a Growth Management Committee that is taking an in-depth look at several issues.

Cap on residential building permits-Following an analysis of the number of building permits issued annually and the capacity of the school system to absorb additional students, the Committee recommended and established an annual cap of 100 residential building permits. The cap, which went into effect last May, will be in place for at least one year in order to provide time for the Committee to make a full analysis of growth management strategies available to the Town.

Managing the development review process of low-to-moderate income housing-Cumberland has traditionally relied on non-profit organizations to provide low to moderate income housing for its residents. While Town residents and officials agree that low-to-moderate income housing is good for Cumberland, the state act relating to such housing projects mandates a less rigorous development review process. The degree of fiscal/infrastructural and environmental impact analysis is greatly reduced. The Growth Management Committee is working to determine how the development review process can be managed to better address the many fiscal/infrastructural and environmental concerns that arise with such projects.

In the near future, the Committee will look at the potential for introducing impact fees (on new development) and/or conveyance fees (for all real estate transactions) as a way to provide the Town with resources for better managing growth and the attendant impacts of development (both new and old).

Chapter IV C

State Revolving Fund (SRF) Facilities Planning

Appendix H includes a copy of the sections of the Comprehensive Plan that best provide the requested information. Other requested information is provided below.

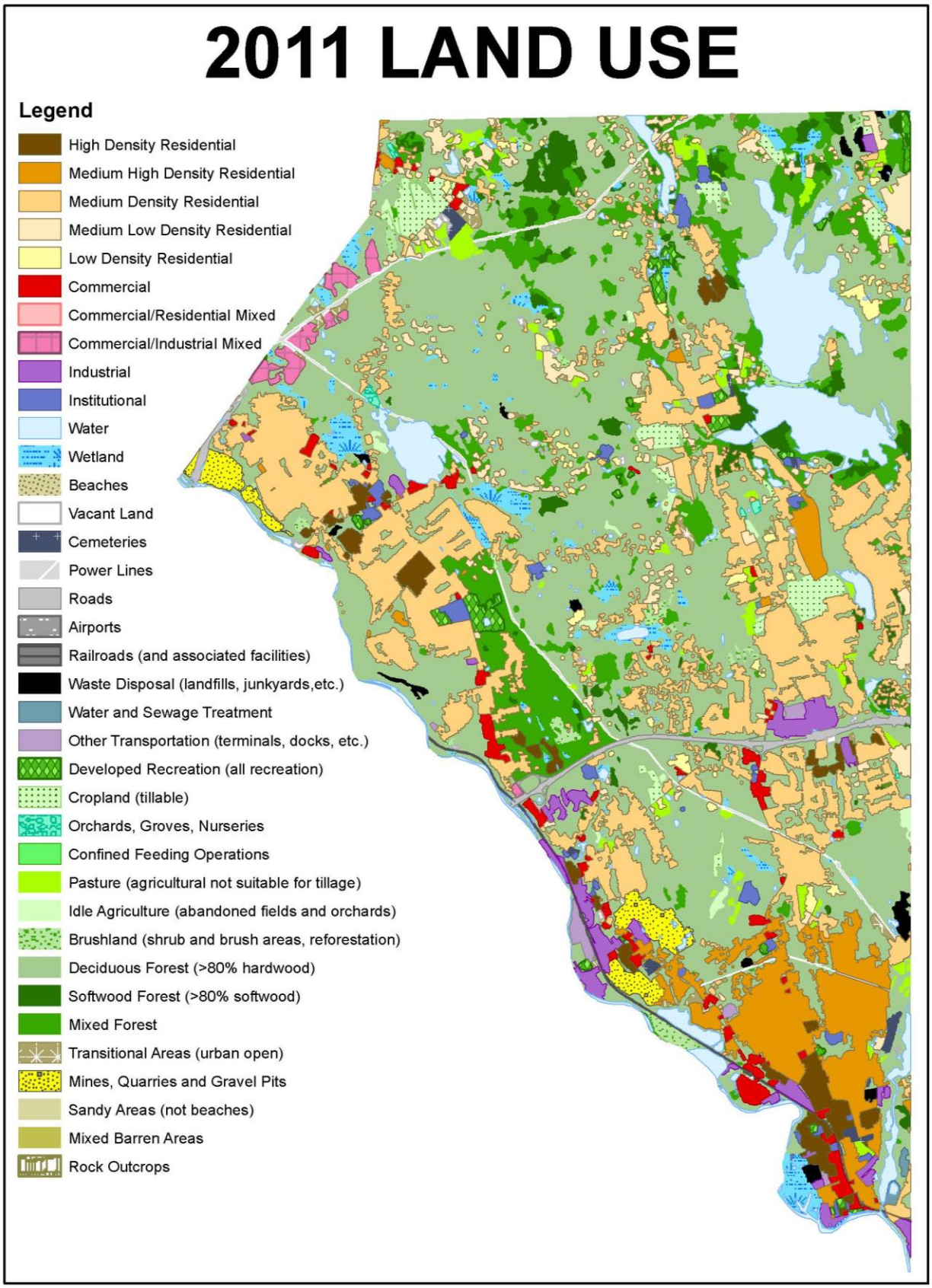
Land Use for The Town of Cumberland

The Land Use and Land Cover dataset from RIGIS was derived using 2011 orthophotography.

According to this data, the Town's 18,078-acre land mass contains the following (in acres):

Land Use	Area (acres)
Brushland	139
Cemeteries	51
Commercial	244
Commercial/Industrial Mixed	112
Cropland	273
Deciduous Forest	7608
Developed Recreation	140
High Density Residential	306
Idle Agriculture	60
Industrial	263
Institutional	141
Low Density Residential	153
Medium Density Residential	3034
Medium High Density Residential	865
Medium Low Density Residential	463
Mines, Quarries and Gravel Pits	196
Mixed Forest	1383
Orchards, Groves, Nurseries	17
Other Transportation (terminals, docks, etc.)	45
Pasture	222
Power Lines	131
Railroads (and associated facilities)	27
Roads (	104
Softwood Forest	426
Transitional Areas	79
Vacant Land	28
Waste Disposal (landfills, junkyards, etc.)	81
Water	1137
Water and Sewage Treatment	15
Wetland	336

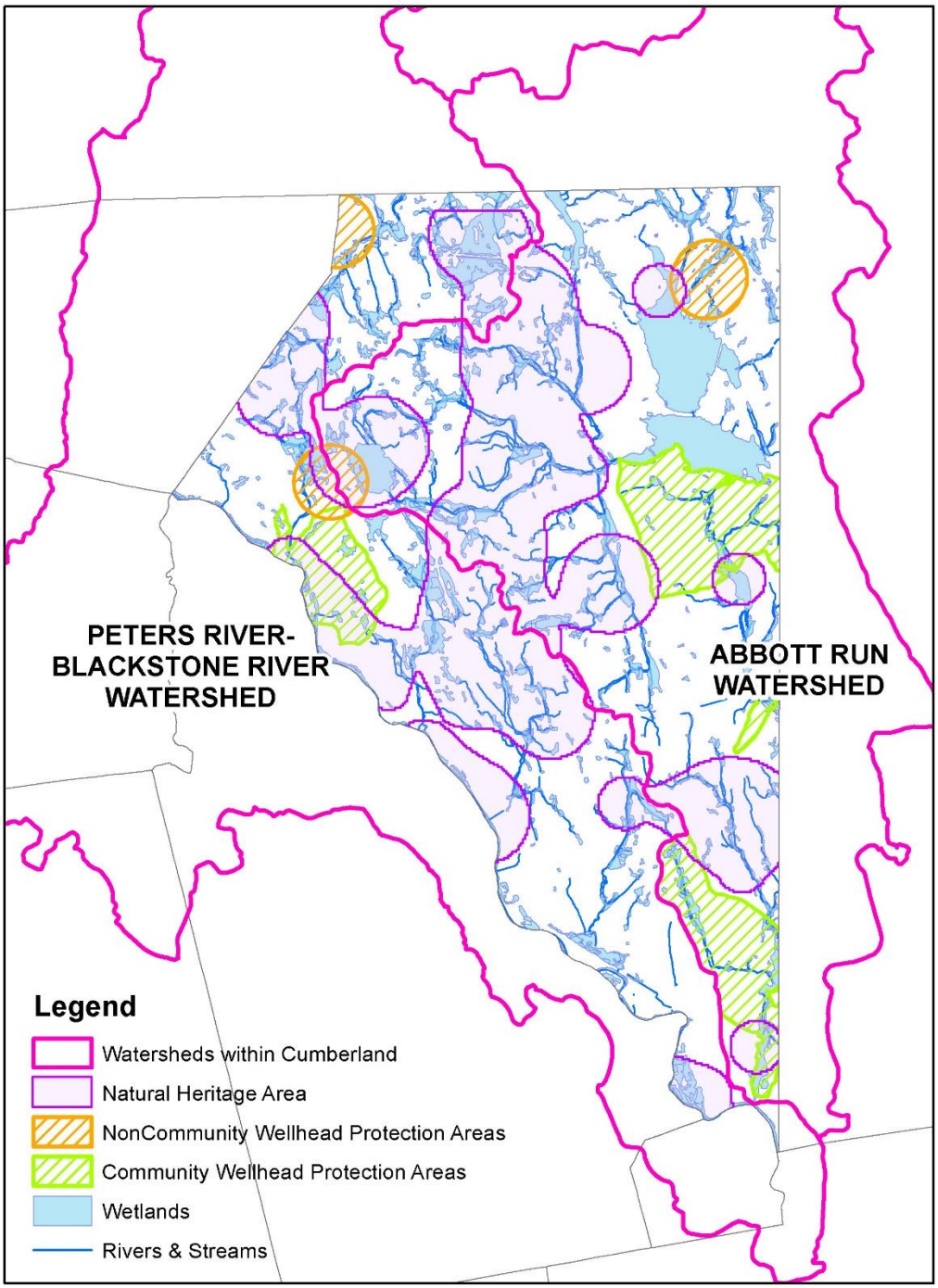
2011 LAND USE



The dominant use of Cumberland's developed lands is residential. A Build-Out Analysis was performed for the Comprehensive Plan and can be found in Appendix I.

Natural Resources Map

The following map was prepared using RIGIS information.



Financing

As noted in the Introduction, the Town of Cumberland is concerned about financing the Storm Water Management Program. The Town is not in a position at this point to consider raising taxes or to consider the feasibility of establishing a storm water utility.

The Town will depend heavily on volunteers to coordinate and fund outreach and education programs. Permit fees can be increased to some extent to help cover some of the additional staff time devoted to site plan reviews and inspections. Some of the measurable goals are a change in procedures, requiring little additional staff time. Many activities, however, will require additional staff times, which will most likely mean that, without outside sources of funding, other activities will be set aside so existing staff can address the Storm Water Program. The large capital costs will require grants and/or bonds.

Chapter IV D

Evaluation and Assessment Reporting

Program Evaluation

1. The Town of Cumberland will annually evaluate the compliance of the SWMPP with the conditions of the general permit.

2. The Town of Cumberland annually will evaluate the appropriateness of the selected BMPs and efforts towards achieving the Measurable Goals in its SWMPP. Cumberland's SWMPP may be changed in accordance with the following provisions:
   a. Changes adding (but not subtracting or replacing) components, controls or requirements to the SWMPP will be made as needed upon written notification to RIDEM.
   b. Changes replacing an ineffective or infeasible six minimum control measure BMP, specifically identified in the SWMPP, with an alternative BMP may be requested at any time. Unless denied, changes proposed in accordance with the criteria below shall be deemed approved and may be implemented sixty (60) days from submittal of the request.
   c. Modification requests will include the following information:
      - Analysis of why the BMP is ineffective or not feasible (e.g., cost prohibitive).
      - Expectations on the effectiveness of the replacement BMP.
      - Analysis of how the replacement BMP is expected to achieve the goals of the BMP to be replaced.

   d. Change requests or notifications will be in writing and signed in accordance with the signatory requirements of Part V. of the general permit.

3. The Town of Cumberland will make any changes requested by the Director of RIDEM provided that they are in writing and set forth the time schedule for Cumberland to develop the changes and amend the SWMPP and offer the opportunity to propose alternative program changes to meet the objective of the requested modification.

Record Keeping

1. The Town of Cumberland will keep all records required by the general permit for a period of five years.
2. Records will be submitted only when specifically requested by the Director of RIDEM or if required as a condition of the general permit.
3. The Town of Cumberland will make the records relating to the general permit

available to the public, including the SWMPP. The public may view the records during normal business hours. The Town of Cumberland may charge a reasonable fee for copying requests.

Reporting

1. The Town of Cumberland will submit an annual report for each year after the permit is issued by March 10th. The reports will contain information regarding activities of the previous calendar year. Reports will be submitted to RIDEM and permittees of identified interconnected MS4s. Reports to RIDEM will be submitted at the following address:

R.I. Department of Environmental Management
Office of Water Resources
RIPDES Program
235 Promenade Street
Providence, RI 02908

2. The following information will be contained in Cumberland's annual report:
   a. A self-assessment review of compliance with the permit conditions.
   b. Assessment of the appropriateness of the selected BMPs.
   c. Assessment of the progress towards achieving the measurable goals.
   d. Assessment of the progress towards meeting the requirements for the control of storm water identified in an approved TMDL.
   e. Summary of results of any information that has been collected and analyzed. This includes any type of data.
   f. Discussion of activities to be carried out during the next reporting cycle.
   g. A discussion of any proposed changes in identified BMPs or measurable goals.
   h. Date of annual notice and copy of public notice.
   i. Summary of public comments received in the public comment period of the draft annual report and planned responses or changes to the program.
   j. Planned municipal construction projects and opportunities to incorporate water quality BMPs, low impact development as well as activities to promote infiltration and recharge.
   k. Newly identified physical interconnections with other small MS4s.
   l. Coordination of activities planned with physically interconnected MS4s.
   m. Summary of the extent of the MS4 system mapped, actions taken to detect and address illicit discharges including: the number of illicit discharges detected, illicit discharge violations issued, and violations that have been resolved. Number and summary of all enforcement actions referred to RIDEM.
   n. Summary of the number of site inspections conducted for erosion and sediment controls, inspections that have resulted in an enforcement action,

and violations that have been resolved. Number and summary of all enforcement actions referred to RIDEM.

o. Summary of the number of site inspections conducted for proper installation of post construction structural BMPs, inspections that have resulted in an enforcement action, and violations that have been resolved. Number and summary of all enforcement actions referred to RIDEM.

p. Summary of the number of site inspections conducted for proper operation and maintenance of post construction structural BMPs, inspections that have resulted in an enforcement action, and violations that have been resolved.

q. Reference of any reliance on another entity for achieving any measurable goal.

CHAPTER V
APPENDICES

Appendices

A. Cumberland Existing and Proposed Programs and Materials for Public Outreach, Participation, and Education
B. SWMPP Outreach Plan
C. Cumberland Resources. Strengths, Partners
D. Cumberland Ordinances Referenced in SWMPP (to save paper, please use the following link to access the most up-to-date ordinances: https://www.ecode360.com/CU3602)
E. Illicit Discharge Detection and Elimination (IDDE) Ordinance
F. Illicit Discharge Detection and Elimination (IDDE) Plan
G. Model Water Resource Protection Ordinance
H. Town Operations and Activities with Associated Potential Pollutants
I. 2016 Town of Cumberland Comprehensive Plan (to save paper, please use the following link: https://www.cumberlandri.org/sites/cumberlandri/files/uploads/cumberlandcompplan2016_-_final_posted_to_ri_division_of_planning.pdf)

APPENDIX A

Cumberland Existing and Proposed Programs and Materials for Public Outreach, Participation, and Education

Sponsoring Organization	Program/Material Name & Description	Existing or Proposed	Audience	Content	Benefits for Cumberland?
Town	Cumberland Fest (annual)	Proposed	B	Big message: Specific messages:	Venue for booth
Town	Valley Breeze	Proposed	B, C	Big message: A, B, C Specific messages: continuous updates on storm water	Get readership #s
Town/State	Water Quality Stewardship Program	Proposed	A	Big message: Specific messages: certify expertise in water resource management	
Town	Ed packet for all town organizations	Proposed	A	Big message: Specific messages:	
BV Tourism	"Keep America Beautiful"	Existing	B, A	Big message: C Specific messages:	trash and solid waste; community planning; teach large segments of community; already multi-town planning
SRICD/Town	Cumberland Citizen Action Committee for Storm water	Proposed	A, B, C, D	Big message: A, B, C	SRICD

Audiences:	Big message codes:
A = Decision-makers (government & civic leaders) B = Residents C = Businesses D = Teachers/Students/Schools	A = Why care about storm water? B = Reducing volume of storm water C = Reducing pollution in storm water

Sponsoring Organization	Program/Material Name & Description	Existing or Proposed	Audience	Content	Benefits for Cumberland?
Cumberland HS (School>Career Coord)	Community Service (15 hrs)	Proposed	D	Big message: A, B, C Specific messages: student involvement	HS teaches: Bio-environment (Nutrient, Biomes; Chem+water analysis)
Cumberland Elem.	Posters	Proposed	B, D	Big message: Specific messages:	
Cumberland MS	Trips/mentor elem. students	Proposed	D	Big message: Specific messages:	
BRWC/HC	Storm Drain Stenciling	Proposed	B	Big message: C Specific messages: No dumping – flows to River	Public education; subsequent impact on water quality; opens the door for citizen monitoring
BRWC/HC, Friends of Blackstone	Blackstone River Cleanup	E	A, B, C, D	Big message: Specific messages: (group & ind.)	On-going clean-up; major Earth Day cleanup
Cumberland Water Department	Water Supply Management Plan	E	B	Big message: A, C Specific messages:	
Cumberland Planning Department., DEM	Comprehensive Plan	E	B	Big message: C Specific messages:	
Town/Boy Scouts	Soil & Water Conservation Badge; volunteers	Proposed	B	Big message: A, B, C Specific messages:	Represents 1,000 children, 650 families; educate children and families; large volunteer force
John H. Chaffee BRV National Heritage Corridor (BRVNHC)	"Storm Drain Detectives: Tracing Just What Ends Up in YOUR River"	E	D	Big message: A, B, C Specific messages: storm water testing	Videotape to train students to conduct storm water testing

Audiences:	Big message codes:
A = Decision-makers (government & civic leaders) B = Residents C = Businesses D = Teachers/Students/Schools	A = Why care about storm water? B = Reducing volume of storm water C = Reducing pollution in storm water

APPENDIX B

Cumberland Storm Water Management Protection Plan (SWMPP) OUTREACH PLAN

GOAL: To maximize public participation in the development of the SWMPP while meeting program deadlines.

Public outreach concerning storm water in Cumberland began with a 2002 meeting with officials from the Departments of Public Works and Planning wherein an agreement on the breadth of participation necessary to insure public voice and ownership in the planning process was reached. Members for the Steering Committee were solicited through a press release in local newspapers and coordination with Town staff. The SRICD was an integral part of the formation of the Steering Committee and organization of the 2003 SWMPP.

The Steering Committee prepared the SWMPP with input from the public through various outreach programs. Going forward, the DPW will coordinate all public outreach and participation identified in Appendix A.

Following the completion of the SWMPP and annual MS4 report, the DPW will coordinate a press release and will add both reports to the town website for public input and education.

APPENDIX C

Cumberland Resources, Strengths, Partners

As identified by the Storm Water Management Program Plan Steering Committee

December 17, 2002

- **EPA**
- **DEM**
- **Blackstone Valley National Heritage**
- **Garden Club (President of Land Trust)**
- **Pawtucket Water Supply Board**
- **DOT**
- **Narragansett Bay Commission**
- **URI Master Gardeners (now maintain gardens at Monastery)**
- **RI Tree Council (graduates) -restoration**
- **Youth groups**
- **Friends of the Blackstone**
- **Chamber of Commerce**
- **Knights of Columbus**
- **Cumberland Business Association**
- **Cumberland students - community service requirement**
- **Juvenile board**
- **Media**
- **Public access television**
- **Senior Citizens**
- **RI Rivers Council (Blackstone Valley Watershed Council)**
- **Audubon Society of RI**

APPENDIX D

Cumberland Ordinances Referenced in SWMPP

(to save paper, please use the following link to access the most up-to-date ordinances: https://www.ecode360.com/CU3602)

APPENDIX E

Illicit Discharge Detection and Elimination Ordinance

#17-15

AN ORDINANCE **RELATING TO THE DETECTION AND ELIMINATION OF ILLICIT STORMWATER DISCHARGE**

The Town of Cumberland Ordains:-

Section 1. Chapter 14 of the Town of Cumberland Code of Ordinances entitled "Environment" is hereby amended by adding thereto the following Article:

ARTICLE V. STORMWATER

Sec. 14-121. Purpose

Increased and contaminated storm water runoff is a major cause of impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater; contamination of drinking water supplies; alteration or destruction of aquatic and wildlife habitat; and flooding. Regulation of illicit connections and discharges to the municipal storm drain system is necessary for the protection of the town's water bodies and groundwater, and to safeguard the public health, safety, welfare and the environment.

The objectives of this ordinance are:

1. to prevent (or reduce to the maximum extent practicable) pollutants entering town's municipally owned separate storm sewer system;
2. to prohibit illicit connections and unauthorized discharges to the MS4;
3. to require the removal of all such illicit connections and discharges;
4. to comply with state law and federal statutes and regulations relating to storm water discharges; and
5. to set forth the legal authority and procedures to carry out all inspection, monitoring and enforcement activities necessary to ensure compliance with this ordinance.

Sec. 14-122. Authority

This ordinance is promulgated pursuant to the Rhode Island Department of Environmental Management's ("DEM") *General Permit Rhode Island Pollutant Discharge Elimination System Storm Water Discharge from Small Municipal Separate Storm Sewer Systems and from Industrial Activity at Eligible Facilities Operated by Regulated Small MS4s* and in accordance with the provisions of Sec. 45-6-1 of the General Laws of the State of Rhode Island.

Sec. 14-123. Definitions

Allowable Non-Storm Water Discharges- Discharges not comprised of storm water are allowed under the MS4 General Permit but are limited to the following, provided these are not significant contributors of pollutants to the MS4: discharges which result from the washdown of vehicles at retail dealers selling new and used automobiles where no detergents are used and individual residential car washing; external building washdown where no detergents are used; the use of water to control dust; fire fighting activities; fire hydrant flushings; natural springs; uncontaminated groundwater; dechlorinated pool discharges; air conditioning condensate; lawn watering; potable water sources including waterline flushings; irrigation drainage; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents are not used; discharges from foundation or footing drains where flows are not contaminated with process materials such as solvents, or contaminated by contact with soils where spills or leaks of toxic or hazardous materials have occurred; uncontaminated utility vault dewatering; dechlorinated water line

testing water; hydrostatic test water that does not contain any treatment chemicals and is not contaminated with process chemicals.

Authorized Enforcement Agency- Employees or designees of the Director of Public Works of the Town of Cumberland.

Best Management Practices (BMPs)- Schedules of activities, prohibitions of practices, general good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters, or storm water conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act (CWA)- The federal Water Pollution Control Act (33 U.S.C. § 1251 *et seq.*), and any subsequent amendments thereto.

Construction Activity- Activities subject to RIPDES Construction Permits. As of March 2003, RIPDES Storm Water Phase II permits are required for construction projects resulting in land disturbance of 1 acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Discharger- Any person, who causes, allows, permits, or is otherwise responsible for a discharge, including, without limitation, any operator of a construction site or industrial facility.

Hazardous Material- Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illicit Connection- An illicit connection is defined as either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Illicit Discharge- Any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a RIPDES permit (other than the RIPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.

Municipal Separate Storm Sewer System (MS4)- A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a city or town or the State district association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial

wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the CWA that discharges to waters of the State;

(ii) Designed or used for collecting or conveying storm water;

(iii) Which is not a combined sewer; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined in the Department of Environmental Management Office of Water Resources Regulations for the Rhode Island Pollutant Discharge Elimination System.

Non-Storm Water Discharge- Any discharge that is not composed entirely of storm water.

Operator- The party or parties that either individually or taken together have the day-to-day operational control over the facility activities and the ability to make modifications to such activities..

Owner- The party or parties that either individually or taken together has legal title to any premise.

Person- Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

Pollutants- Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Storm Water- Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Unauthorized Discharge- A discharge of storm water not authorized by a RIPDES permit, or an allowable storm water discharge found to be a significant contributor of pollutants to the MS4.

Watercourse- A natural or man-made surface drainage channel or body of water (including a lake or pond) through which a water flow occurs, either continuously or intermittently.

Waters of the State- Surface and ground waters within the boundaries of the State of Rhode Island and subject to its jurisdiction.

Sec. 14-124. Discharge Prohibitions

Prohibition of Unauthorized Discharges

No person shall discharge or caused to be discharged into the municipal separate storm sewer system or watercourses any pollutant or non-storm water discharge unless such a non-storm water discharge is outlined in Part I.B.3 of the MS4 General Permit. The allowable non-storm water discharges (described below) are permitted if deemed not to be a significant contributor of pollutants to the municipal separate storm sewer system.

Allowable non-storm water discharges:

1. discharges which result from the washdown of vehicles at retail dealers selling new and used automobiles where no detergents are used and individual residential car washing;
2. external building washdown where no detergents are used;
3. the use of water to control dust;
4. fire fighting activities;
5. fire hydrant flushings;
6. natural springs;
7. uncontaminated groundwater; dechlorinated pool discharges;
8. air conditioning condensate;
9. lawn watering; potable water sources including waterline flushings;
10. irrigation drainage;
11. pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents are not used;
12. discharges from foundation or footing drains where flows are not contaminated with process materials such as solvents, or contaminated by contact with soils where spills or leaks of toxic or hazardous materials have occurred;
13. uncontaminated utility vault dewatering; dechlorinated water line testing water;
14. hydrostatic test water that does not contain any treatment chemicals and is not contaminated with process chemicals.

Prohibition of Illicit Connections

The construction, use, maintenance or continued existence of illicit connections to the municipal separate storm sewer system is prohibited. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

A person is considered to be in violation of this ordinance if the person connects a line conveying sewage to the MS4, or allows such a connection to continue and must provide corrective action.

Sec. 14-125. Suspension of MS4 Access

Suspension due to Illicit Discharges in Emergency Situations.

The Director of Public Works may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened non-storm water discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the State. If the violator fails to comply with a suspension order issued in an emergency, the authorized enforcement agency may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the State, or to minimize danger to persons.

Suspension due to the Detection of Illicit Discharge.

Any person discharging to the MS4 in violation of this ordinance may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The authorized enforcement agency will notify a violator of the proposed termination of its MS4 access. The violator may petition the authorized enforcement agency for reconsideration and a hearing. A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this Section, without the prior approval of the authorized enforcement agency.

Entry to Perform Duties Under this Ordinance.

To the extent permitted by State law, or if authorized by the owner or other party in control of the property, the authorized enforcement agency, its agents, officers, and employees may enter upon

privately owned property for the purpose of performing their duties under this ordinance and may make or cause to be made such examinations, surveys or sampling as the authorized enforcement agency deems reasonably necessary.

Sec. 14- 126. Industrial and Construction Activity Discharge

Any person subject to an industrial or construction activity RIPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the authorized enforcement agency prior to the allowing of discharges to the MS4.

Sec. 14-127. Inspections and Monitoring

The authorized enforcement agency shall be permitted, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the dischargers premise(s) where a regulated activity is conducted, or where records must be kept as required under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept as required under the conditions of the permit;
3. Inspect at reasonable times any equipment, practices, or operations regulated or required under this permit; and
4. Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA or R.I. law.

Sec. 14-128. Requirement to Prevent, Control and Reduce Storm Water Pollutants

In an attempt to prevent, control, and reduce storm water pollutants any person engaged in activities or operations, or owning facilities or property which will or may result in pollutants entering storm water, the storm sewer system or waters of the State shall implement Best Management Practices to the extent they are technologically achievable to prevent and reduce such pollutants. The owner or operator of a commercial or industrial establishment shall provide reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses. Facilities to prevent accidental discharge of prohibited materials or other wastes shall be provided and maintained at the owner or operator's expense.

Sec. 14-129. Watercourse Protection

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property reasonably free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse. The owner or lessee shall not remove healthy bank vegetation beyond that actually necessary for maintenance, nor remove said vegetation in such a manner as to increase the vulnerability of the watercourse to erosion. The property owner or lessee shall be responsible for maintaining and stabilizing that portion of the watercourse that is within their property lines in order to protect against erosion and degradation of the watercourse originating or contributed from their property. Nothing in this section shall preclude any owner/lessee from compliance with relevant provisions of the Rhode Island Freshwater Wetlands Act, R.I.G.L. 2-1-18, *et seq.*or other applicable laws or regulations.

Sec. 14-130. Notification of Spills

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or

suspected release of materials which are resulting or may result in unauthorized discharges or pollutants discharging into storm water, the storm drain system, or waters of the State from said facility, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of a hazardous material said person shall immediately notify emergency response officials of the occurrence via emergency dispatch services (911). In the event of a release of non-hazardous materials, said person shall notify the authorized enforcement agency no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the authorized enforcement agency within **5** business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years. Nothing in this section shall preclude any owner/lessee from compliance with relevant provisions of the Rhode Island Clean Water Act, R.I.G.L. 46-12-1, et seq.or other applicable laws or regulations.

Sec. 14-131. Enforcement

A. Notice of Violation

Whenever the authorized enforcement agency finds that any person has violated a prohibition or failed to meet a requirement of this Ordinance, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

1. The performance of monitoring, analyses, and reporting;
2. The elimination of illicit connections or discharges;
3. That violating discharges, practices, or operations shall cease and desist;
4. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property; and
5. Payment of a fine to cover administrative and remediation costs; and
6. The implementation of source control or treatment BMPs.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

Sec. 14-132. Appeal of Notice of Violation

Any person receiving a Notice of Violation may appeal the determination of the authorized enforcement agency. The notice of appeal must be filed with the Municipal Court of the Town of Cumberland within **14** days from the date of the receipt of the Notice of Violation. The notice of appeal shall be in writing and contain a detailed basis upon which the appeal was taken. Jurisdiction of said Court is conferred by Sec. 11-15 (a) of the Town of Cumberland Code of Ordinances.

Sec. 14-133. Settlements of Appeal of Notice of Violation

In lieu of enforcement proceedings, penalties, and remedies authorized by this Ordinance, the authorized enforcement agency may enter into a negotiated settlement to resolve the appeal of the Notice of Violation. Such settlement may impose upon a violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

Sec. 14-134. Enforcement Measures After Appeal

If no timely appeal of a Notice of Violation has been taken and the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or, in the event of an appeal, within

30 days of the decision of the municipal authority upholding the decision of the authorized enforcement agency, then representatives of the authorized enforcement agency shall undertake all necessary actions, including requesting injunctive relief through the Municipal Court or Superior Court, to enter upon the subject private property and take any and all measures necessary to abate the violation and/or restore the property

Sec. 14-135. Administrative Orders

The authorized enforcement agency is authorized to issue the following administrative orders at any time they deem such action appropriate to secure timely and effective compliance with this Ordinance or a discharge permit or order issued pursuant to this Ordinance, whether or not any previous notifications of violation have been provided to the user.

A. Cease and Desist Order: The authorized enforcement agency may issue an order to cease and desist a violation or an action or inaction which threatens a violation and to direct the user to comply forthwith or to take such appropriate remedial or preventive action as may be needed to properly address the violation or threatened violation, including halting operations and terminating the discharge.

B. Compliance Order: The authorized enforcement agency may issue an order requiring a user to provide within a specified period of time, such treatment, pretreatment or discharge control facilities or related appurtenances as are necessary to correct a violation or to prevent a threatened violation. A compliance order may also direct that a user provide improved operation and maintenance of existing discharge facilities conduct additional self-monitoring or submit appropriate reports or management plans.

C. Show Cause Order: The authorized enforcement agency may issue an order to show cause why a proposed enforcement action should not be taken. Notice shall be served on the user specifying the time and place for a meeting, the proposed enforcement action and the reasons for such action, and a request that the user show cause why the proposed enforcement action should not be taken. Whether or not a duly notified user appears as noticed, additional enforcement action may be initiated.

D. Consent Order: The authorized enforcement agency may enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with a user. Such orders shall include specific actions to be taken by the user and specific time frames to correct a violation or to remove the threat of a violation.

Sec. 14-136. Cost of Abatement of the Violation

Within 30 days after abatement of the violation, by or under the direction of the authorized enforcement agency, the owner of the property will be notified by the enforcement agency or municipality of the cost of abatement, including administrative costs. If the amount due is not paid within a timely manner as determined by the enforcement agency or municipality, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment. Any person violating any of the provisions of this section shall become liable to the town by reason of such violation. The liability shall be paid in not more than 12 equal payments. Interest at the rate of 12 percent per annum shall be assessed on the balance beginning on the 60th day following discovery of the violation.

Sec. 14-137. Injunctive Relief

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Ordinance. If a person has violated or continues to violate the provisions of this

ordinance, the authorized enforcement agency may petition for a temporary, preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

Sec. 14-138. Violations Deemed a Public Nuisance

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this Ordinance is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

Sec. 14-139. Criminal Prosecution

Any person that has violated or continues to violate this Ordinance shall be liable to criminal prosecution to the fullest extent of the law, and shall be subject to a criminal penalty of five hundred dollars ($500.00) per violation per day and/or imprisonment for a period of time not to exceed thirty 30 days. The authorized enforcement agency may recover all attorneys' fees, court costs and other expenses associated with enforcement of this Ordinance, including sampling and monitoring expenses.

Sec. 14-140. Remedies Not Exclusive

The remedies listed in this ordinance are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the authorized enforcement agency to seek cumulative remedies.

Section 2. This Ordinance shall take effect immediately upon its passage and all ordinances or provisions of Ordinances which are inconsistent herewith are hereby repealed.

EXPLANATION

This ordinance would regulate illicit connections and discharges into the Town of Cumberland municipal storm drain system.

6/23/17
Solicitor

ON A MOTION BY COUNCILOR DWYER, SECONDED BY COUNCILOR METIVIER AND UNANIMOUSLY VOTED TO APPROVE BY A ROLL CALL VOTE. VOTE 7/0.

Date Adopted: July 19, 2017

William S. Murray, Mayor

A True Copy, ATTEST:

Peter J. Bradley, President

Sandra M. Giovanelli, Town Clerk

Town of Cumberland
Fiscal Note

Proponent: Finance Department **Date: 06/23/17**

Description of Ordinance, Rule, or Resolution:
An Ordinance relating to the Detection and elimination of Illicit Stormwater Discharge.

Cost(s) of:
There are no costs associated with this Ordinance, although the Finance Department wanted to make aware a previous Resolution in regards to purchasing equipment in lieu of DEM assessing a fine on the Town for compliance with the State's MS4 program. The Town budgeted to purchase equipment in regards to the MS4 consent agreement. One item to be purchased is a camera system that will allow the Public Works department to identify illicit discharges.

Are said Costs/Revenue budgeted? If so, describe. If not, where shall the appropriation originate?
The purchase of equipment costs associated is budgeted for in the FY2018 Town of Cumberland Budget.

Effect on the Tax Rate of the Town:
There shall be no further effect on the tax rate.

Source(s) of Data:
Finance Department

Bid Information:
N/A

Proponent Signature: _____
Jason Parmelee
Finance Director
June 23, 2017

TOWN OF CUMBERLAND
NOTICE OF PUBLIC HEARING

Notice is hereby given that the Town Council of the Town of Cumberland, pursuant to the provisions of Article IV, Section 409 of the Home Rule Charter of the Town of Cumberland will consider for adoption the following ordinances entitled:

1. **#17-15 – An ordinance relating to the Detection and Elimination of Illicit Stormwater Discharge**

Notice is further given that said Ordinance will be considered at a public hearing of said Town Council at the Cumberland Town Hall, Council Chambers, 45 Broad Street, Cumberland, Rhode Island on **Wednesday, July 19, 2017 at 7:30 p.m.**, at which time and place all persons may be heard.

INDIVIDUALS REQUESTING INTERPRETER SERVICES FOR THE HEARING IMPAIRED MUST NOTIFY THE TOWN CLERK AT 728-2400, EXT. 138, 48 HOURS IN ADVANCE OF HEARING DATE.

PER ORDER CUMBERLAND
TOWN COUNCIL
Sandra M. Giovanelli, Town Clerk

Chamber's Business Before Hours at Red DWG Library July 19

PAWTUCKET – The Northern Rhode Island Chamber of Commerce will host Business Before Hours on Wednesday, July 19, from 8 to 9:15 a.m. at Red DWG Library, LLC, a coworking space community, at 413 Central Ave., Suite 300.

Start the day making new connections over coffee and celebrate Women's Entrepreneur Week. Tickets are $5 for members, $25 for non-members. Visit www.nrichamber.com or call 401-334-1000.

Soil testing Saturday

CUMBERLAND – University of Rhode Island master gardeners will hold a lecture and soil testing on Saturday, July 15, at the Monastery gazebo behind the Cumberland Public Library, 1464 Diamond Hill Road. Soil testing is from 9 to 11 a.m. and Karen Vincent will give a talk near the gazebo at 10 a.m. on "Pollinator Plants for the Backyard Garden." Call Terri Melvin at 401-658-3342.

BREEZE PHOTO BY TOM WARD

MIKE AREL of Old River Road, Manville, adds waterproofing spray to the canvas atop his new Stingray boat. Arel is the owner of Clean Cutts Landscaping.

TOWN OF CUMBERLAND, RHODE ISLAND
Planning Board

Town Hall - 45 Broad Street, Cumberland, Rhode Island 02864. (401) 728-2400

Notice of Informational Meeting

Notice is hereby given that the Cumberland Planning Board will hold an ***Informational Meeting*** on ***Wednesday, July 26, 2017 at 7:00 p.m.***, in Cumberland Town Hall, Town Council Chambers, 45 Broad Street, Cumberland, Rhode Island 02864.

The purpose of the hearing is to consider the filing of a request for a ***Major Land Development – Amended Master Plan*** owned by ***Waterman Homestead LLC***, and located at 80 Bear Hill Road, being also described as ***Assessor's Plat 21 Lot 500***. The public is encouraged to attend, and offer comment and/or testimony.

A copy of the proposal will be available on the Town's website, **www.cumberlandri.org**, by Friday July 21, 2017 or in the Planning Department during normal business hours. Individuals requesting interpreter services for the hearing impaired must notify the Town Clerk's Office at 401-728-2400, 48 hours in advance.

TOWN OF CUMBERLAND
TAX ASSESSOR'S OFFICE
REQUEST FOR PROPOSALS
FOR THE FLYOVER OF ALL PROPERTY LOCATED WITHIN THE CORPORATE LIMITS OF CUMBERLAND, RHODE ISLAND AND GIS FEATURE EXTRACTION
BID # 2017-0725-11

Sealed Bids clearly marked "THE FLYOVER OF ALL PROPERTY LOCATED WITHIN THE CORPORATE LIMITS OF CUMBERLAND, RHODE ISLAND AND GIS FEATURE EXTRACTION" will be received at the Town of Cumberland Finance Department, Cumberland Town Hall, 45 Broad Street, Cumberland, RI 02864 until July 25, 2017 at 10 a.m. and then bids will be publicly opened and read aloud in Town Council Chambers (2rd Floor). Bid specifications will be available in the Finance Department and on the Town website www.cumberlandri.org.

All proposals should be submitted with (1) original and (4) copies.
The exterior of the envelope should be plainly marked to include:
Your Company Name and "RFP # 2017-0725-11 ,
FOR THE FLYOVER OF ALL PROPERTY LOCATED WITHIN THE CORPORATE LIMITS OF CUMBERLAND, RHODE ISLAND AND GIS FEATURE EXTRACTION"

The Town of Cumberland reserves the right to accept or reject, without prejudice, any and all bids to waive any irregularities therein, or to accept the proposal deemed to be in the best interest of the Town of Cumberland. The Town of Cumberland does not discriminate on the basis of age, race, religion, national origin, color or disability in accordance with applicable laws and regulations.

Individuals requesting interpreter service for the hearing impaired or other individuals requiring special accommodations must notify the Finance Department 72 hours in advance of this scheduled opening at 401-728-2400 or email jparmelee@cumberlandri.org.

For further information please call Kenneth Mallette, Jr. at 401-728-2400 ext. 149 or by email at kmallette@cumberlandri.org.

Jason Parmelee- Finance Director
Town of Cumberland

OFFICER

From Page 3

keep in touch with elderly folks in town to make sure they're receiving help they need.

"We want to see people get on the right path," Loveless said.

When officers reach out to the community and familiarize themselves with its residents, "You learn more. People are comfortable around you. They talk to you," she said.

Some shifts involve arrests, Loveless said, but other days she takes on other roles and acts as a counselor, plumber, or basketball teammate.

Sometimes, she said, she's simply there for someone who needs a person to talk to and ask for advice.

Before she became an officer in Cumberland, Loveless explained, she worked for Tides Family Services, an agency that works with at-risk youth.

She served there from May 2005 until March 2009, when she started her role with the Cumberland Police Department.

While working for Tides, she'd visit homes multiple times a day, and was the supervisor of the programs in Pawtucket, Central Falls and parts of Cumberland, she said, that aimed to provide outreach and counseling to at-risk youth.

"They're great kids. They've had a rough life," Loveless said, thinking back to her experience working for the program.

She still keeps in touch with children she worked with during her time at Tides, she said, and seeing them become successful in their adult lives is fulfilling.

Her mission, she said, like most police officers, is to protect and serve. It's a privilege, she said, to do that in Cumberland.

"We try as much as we can to be proactive, interact with the community," she said.

Loveless also includes the animals in the neighborhood – she's got a stash of Milk-Bone dog treats in her cruiser.

"I love my job," she said.

"It's fun. Every day I go to work, and it's something completely different."

Town of Cumberland Routing Sheet for Legislation to Appear Before the Cumberland Town Council

☐Ordinance ☐Resolution Relating to the Detection and Elimination of Illicit Stormwater Discharge

Author of Legislation: Christopher Alger. Assistant Town Solicitor

Department: Legal

(1) This legislation has been approved, and the language is acceptable for publication by _____

RECEIVED
JUN 23 2017 11:40pm
SOLICITOR'S OFFICE

Signed: _____ Date and Time: _____

Please send an electronic copy of this legislation to Ruth Bascombe-Legal Assistant, Solicitor's Office when complete: **rbascombe@cumberlandri.org.**

(2) This legislation and all attached information, specifically all proposed funding sources, has been approved by Jason Pamelee of the Town Finance Department, certifying that all financial notes and other financial documentation has been attached.

☐ Check if no Fiscal Note is required.

Signed: _____ Date and Time: 6/23/17 3:35pm

(3) This legislation has been approved by William S Murray of the Mayor's Office.

Signed: _____ Date and Time: 6-26-17 9AM
Mayor William Murray

(4) This legislation has been accepted for placement on the Town Council Agenda for the meeting to be held on June 29, 2017 by S. Giovanelli of the Town Clerk's Office. This authorization confirms that all four copies of the necessary document, including a copy in an electronic format, has been attached and signed by the designated department and has been received prior to the designated 3:30 p.m. deadline.

The Town Clerk's Office will issue a Legislation number.

Signed: S. Giovanelli Date and Time: 6/23/17 3:05pm

This routing sheet must be completed in the order detailed above to ensure complete and timely acceptance for the next scheduled Town Council Meeting.

**Should a given piece of legislation prove to be extremely time sensitive, the Mayor's signature and only the Mayor's signature below authorizes said legislation to be exempt from the necessary route described above.*

_____
William Murray, Mayor

APPENDIX F

Illicit Discharge Detection and Elimination Plan

Town of Cumberland RI

Illicit Discharge Detection and Elimination Plan

November 2017

Table of Contents

Introduction

In the State of Rhode Island, the Rhode Island Department of Environmental Management (RIDEM) implements the US Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) program. As a measure to reduce storm water related pollution in the waters of the State, the Rhode Island Pollutant Discharge Elimination System (RIPDES) regulations were amended to include EPA's NPDES Phase II requirements. Phase II requires storm water discharges to waters of the State from small municipal separate storm sewer systems (MS4s) located within urbanized areas or designated by the permitting authority, to obtain a RIPDES storm water permit. The Town of Cumberland (the Town) is regulated as a small MS4 under the RIPDES program and is required to comply with permitting regulations.

The RIPDES General Permit for small MS4s requires municipalities to develop and implement a Storm Water Management Program Plan (SWMPP), which must address the six minimum control measures outlined in the permit. One of these control measures pertains to illicit discharge detection and elimination. As a condition of the permit, the operator of the MS4 (the Department of Public Works) "must develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, into the system." The DPW shall be the sole responsible party in implementing and maintaining this IDDE Plan.

As required by the RIPDES General Permit, and by the Consent Agreement between the Town and RIDEM, this Illicit Discharge Detection and Elimination (IDDE) Plan addresses the following:

- Procedures to identify and remedy priority areas of illicit discharge investigation;
- Standard Operating Procedures (SOPs) to trace and eliminate illicit discharges;
- SOPs to complete required dry weather surveys of MS4 Outfalls;
- IDDE responsibilities of town staff.

IDDE Ordinance: An IDDE ordinance was developed and adopted by the Town on July 19, 2017. The ordinance specifically prohibits the illicit connection and/or discharge to the MS4. The Director of the DPW is granted authorization to suspend or terminate MS4 discharge access to any person in violation of the ordinance.

The ordinance also requires the implementation of Best Management Practices (BMPs) to the extent achievable for activities on properties which "will or may result in pollutants entering storm water, the storm sewer system, or waters of the State." A copy of the ordinance is provided as an Appendix to this IDDE Plan.

Dry Weather Sampling: As part of compliance with the Consent Agreement, a dry weather survey of all storm water outfalls was performed in order to detect any potential illicit discharges. A total of 21 outfalls were observed to convey flow during the dry weather survey. On September 11 and 12, 2017, flow from these 21 outfalls was sampled and sent for analysis to ESS Laboratory in Cranston, RI. Water temperature, pH, and conductivity were measured in the field by Pare. ESS Laboratory tested the samples for fecal coliform, coliphage, surfactants, chlorine, and ammonia.

I. **Definitions** (as provided in Cumberland's IDDE Ordinance):

Allowable Non-Storm Water Discharges- Discharges not comprised of storm water are allowed under the MS4 General Permit but are limited to the following, provided these are not significant contributors of pollutants to the MS4:

- discharges which result from the washdown of vehicles at retail dealers selling new and used automobiles where no detergents are used and individual residential car washing;
- external building washdown where no detergents are used;
- the use of water to control dust;
- firefighting activities;
- fire hydrant flushings;
- natural springs;
- uncontaminated groundwater;
- dechlorinated pool discharges;
- air conditioning condensate;
- lawn watering;
- potable water sources including waterline flushings;
- irrigation drainage;
- pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents are not used;
- discharges from foundation or footing drains where flows are not contaminated with process materials such as solvents, or contaminated by contact with soils where spills or leaks of toxic or hazardous materials have occurred;
- uncontaminated utility vault dewatering;
- dechlorinated water line testing water; and
- hydrostatic test water that does not contain any treatment chemicals and is not contaminated with process chemicals.

Authorized Enforcement Agency- Employees or designees of the Director of Public Works of the Town of Cumberland.

Best Management Practices (BMPs)- Schedules of activities, prohibitions of practices, general good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters, or storm water conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act (CWA)- The federal Water Pollution Control Act (33 U.S.C. § 1251 *et seq.)*, and any subsequent amendments thereto.

Construction Activity- Activities subject to RIPDES Construction Permits. As of March 2003, RIPDES Storm Water Phase II permits are required for construction projects resulting in land disturbance of 1 acre

or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Discharger- Any person, who causes, allows, permits, or is otherwise responsible for a discharge, including, without limitation, any operator of a construction site or industrial facility.

Hazardous Material- Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illicit Connection- An illicit connection is defined as either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Illicit Discharge- Any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a RIPDES permit (other than the RIPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.

Municipal Separate Storm Sewer System (MS4)- A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a city or town or the State district association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the Clean Water Act (CWA) that discharges to waters of the State;
(ii) Designed or used for collecting or conveying storm water;
(iii) Which is not a combined sewer; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined in the Department of Environmental Management Office of Water Resources Regulations for the Rhode Island Pollutant Discharge Elimination System.

Non-Storm Water Discharge- Any discharge that is not composed entirely of storm water.

Operator- The party or parties that either individually or taken together have the day-to-day operational control over the facility activities and the ability to make modifications to such activities.

Owner- The party or parties that either individually or taken together has legal title to any premise.

Person- Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

Pollutants- Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Storm Water- Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Unauthorized Discharge- A discharge of storm water not authorized by a RIPDES permit, or an allowable storm water discharge found to be a significant contributor of pollutants to the MS4.

Watercourse- A natural or man-made surface drainage channel or body of water (including a lake or pond) through which a water flow occurs, either continuously or intermittently.

Waters of the State- Surface and ground waters within the boundaries of the State of Rhode Island and subject to its jurisdiction.

II. IDDE Ranking Process

The DPW regularly inspects and cleans MS4 structures as standard practice. These inspections have allowed for DPW personnel to become familiar with problem areas within the storm water system. As such, a number of areas in town have been investigated for illicit discharges and connections based on this information alone. However, the main processes for ranking priority outfalls for investigation relies on information obtained from RIDEM studies such as the Blackstone River TMDL Report, information received from recurrent resident complaints, and results from outfall investigations and sampling.

As listed in the IDDE Plan Requirements document (Attachment C of the Consent Agreement between Cumberland and RIDEM), the following information dictates the priority ranking of outfalls:

1. *High Priority: Cumberland must classify as high priority any storm water infrastructure with known or suspected discharges based upon any of the following information:*
    a. *Storm water infrastructure with screening results that indicate sewer input or industrial discharges based on olfactory or visual evidence, including but not limited to olfactory or visual evidence or observations encountered during the dry weather surveys of outfalls and*

inspections of catch basins, and/or sampling results that exceed thresholds in Part B above[1], as follows:

i. *Bacteria **and** any of the other listed thresholds (with the exception of pH and conductivity) are exceeded; or*
ii. *Bacteria threshold is exceeded and pharmaceuticals have been detected in elevated concentrations or visual evidence of sewer or excessive odor have been observed; or*
iii. *Surfactants or ammonia thresholds are exceeded and chlorine has been detected; or*
iv. *Conductivity and pH thresholds are exceeded.*

b. *Citizen complaint of illicit discharge as appropriate;*
c. *Notification by the RIDEM, the EPA, or an interconnected MS4 of presence of suspect illicit discharge as evidenced by criteria listed in Part 1.a above;*
d. *Evidence of potential illicit discharges discovered as a result of other activities including but not limited to: mapping, construction, maintenance, and cleaning and repair of catch basins and manholes.*

Upon classification as high priority, Cumberland must initiate an IDDE investigation in accordance with the deadlines in Part E[2] of this Attachment.

2. *<u>Priorities for additional outfall and system screening</u>: Cumberland must classify as priority any outfalls or interconnections with previously identified dry weather flows where the results of the analysis cannot conclusively determine that the dry weather flow consisted only of storm water, or where one or more of the System Vulnerability Factors listed in Table 1 below exist within the catchment area. Where either of these conditions exist, Cumberland must conduct screening as follows:*
   a. *Re-visit outfalls and interconnections during dry weather conditions and sample at a minimum for the parameters listed in Part B above when a flow is observed; and*
   b. *Where flow is not observed during the dry weather re-visiting, Cumberland must inspect and sample the outfall and interconnections during wet weather conditions, for the parameters listed in Part B above.*

Table 1: System Vulnerability Factors
• *History of Sanitary Sewer Overflows (SSOs), including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages* • *Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs* • *Inadequate sanitary sewer level of service resulting in regular surcharging, customer back-ups, or frequent customer complaints* • *Common or twin-invert manholes serving storm and sanitary sewer alignments* • *Common trench construction serving both storm and sanitary sewer alignments* • *Crossings of storm and sanitary sewer alignments* • *Sanitary sewer alignments known or suspected to have been constructed with an underdrain system* • *Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary*

[1] Part B refers to a list of thresholds outlined herein in the QAPP
[2] Part E refers to deadlines listed herein in the QAPP

sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations

- *Areas formerly served by combined sewer systems*
- *Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas*
- *Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance)*
- *History of multiple RIDEM actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance)*

High Priority Outfalls:

These outfalls consist of 7 priority outfalls listed in the "Total Maximum Daily Load Analysis for Blackstone River Watershed, Pathogen and Trace Metals Impairments, Final Report, February 2013" (the TMDL). These outfalls were assigned priority status due to water quality data and their proximity to the Blackstone River.

Priorities for additional outfall and system screening:

The outfalls passing flow during the September 2017 dry weather survey that had IDDE threshold exceedances will require additional investigation to determine if threshold exceedances still exist, and if so, from where the illicit discharge originates.

To further understand why an outfall may be ranked as a priority, it is crucial to understand the connectivity of the storm water system. To visualize the connectivity of the storm water system and to maintain an inventory of MS4 structures in accordance with the RIPDES General Permit, the town contracted Pare Corporation to GPS locate these features and document associated attributes. A Global Positioning System (GPS) was used to locate all municipally-owned storm water outfalls during the summer of 2017. The following attributes were recorded for each outfall: Pipe size, shape, condition, material, issues, outfall name, and whether flow was observed during the dry weather survey. Additional visual observations were recorded as well. Outfall names were assigned based on the Assessor plat and lot on which they are located. Outfalls located within a road right-of-way were assigned the road names. For example, an outfall located on Assessor plat X, lot Y is named X-Y. An outfall located within the Main Street right-of-way is named MAIN.

GPS data were imported into ArcMap, where all associated attributes are stored in a file geodatabase. In addition, a photograph of each outfall was taken and integrated into the map's geodatabase.

Existing storm water structures, previously digitized by the DPW, were included in the map, and were further expanded upon based on record drawings and field observations. The following features are included in the storm system map:

- Outfalls
- Catch basins
- Manholes
- Pipes
- Outfall catchment areas
- Receiving waters
- Inlets/outlets and culverts

The map is anticipated to serve as a living document; new drainage structures will be digitized by the DPW in conjunction with their installation and connection to the system in the field.

Maintaining this database of the MS4 will allow the DPW to prioritize outfalls for further investigation, as described in further sections.

III. IDDE Investigation and Tracing Process

The Standard Operating Procedures (SOPs) for investigating potential illicit connections will be implemented by the DPW on a regular basis. An SOP provides step-by-step actions that are repeatable and easily followed. Cumberland shall adhere to these SOPs and incorporate them while performing routine catch basin cleaning, inspection, and repair. If DPW staff encounter any potential illicit connections or observe indicators of illicit connection (such as cloudy water, odors, or sewage debris), they shall immediately begin the SOP for illicit connection investigation.

The SOP for investigations includes three main steps: desktop analysis, dry weather survey, and source identification. These three measures provide efficient and concise procedures for identification of illicit connections and/or discharges into the Cumberland MS4.

<u>Standard Operating Procedure (SOP) for Investigations</u>

Desktop Analysis:

The DPW maintains the map of MS4 structures prepared by Pare. Following the identification of a potential illicit discharge, the DPW will review the existing drainage system in the subject area; this desktop analysis will include identification of existing pipes, manholes and catch basins within the contributing area to the outfall where an illicit discharge is presumed. The DPW will make note of any facilities in the vicinity or within the contributing area which may be the cause of the contamination. In addition, the DPW will review logged complaints by residents of issues pertaining to drainage structures within the contributing area.

Dry Weather Survey:

Following the desktop analysis of potential illicit discharges, the DPW will coordinate sampling of appropriate outfalls and areas of concern. As described in the General Permit, two dry weather surveys to screen for non-storm water flows must be completed; one between January 1st and April 30th, and the other between July 1st and October 31st. Both surveys follow the same sampling procedures. Dry weather survey and sampling occurs when there is less than 0.1 inches of rain in the preceding 72 hours and no significant snowmelt.

The parameters analyzed in these surveys (as established in the Consent Agreement) are as follows: bacteria (fecal coliform, coliphage, enterococcus), surfactants, ammonia, chlorine, pH, conductivity, and a number of visual parameters including odors, sheen, stressed vegetation, coloration/staining, algae growth, sedimentation, and scouring in the vicinity of the outfalls. Specific procedures for sampling are further detailed in the Quality Assurance Project Plan (QAPP).

Source Identification:

Identification of the source of contamination is dependent on the two previous SOPs for investigations: desktop analysis and dry weather surveys. Both of these SOPs will further narrow down the location of an illicit connection or discharge within the storm water system.

Prior to any investigation in the field, the DPW will notify all relevant parties which may include Police, Fire, RIDEM, and abutting property owners. The DPW will open drainage structures to inspect for illicit connections and implement smoke tests and dye tests to assist in source identification. The DPW recently acquired a camera system to check on the condition of drainage pipes. This camera system will also be implemented in source identification when a source cannot be identified by other means described above.

IV. IDDE Removal and Follow-Up

The DPW shall follow the following SOP for illicit discharge removal subsequent to the SOP for investigations.

<u>Standard Operating Procedure (SOP) for Removing Illicit Discharges</u>

Cumberland's IDDE Ordinance specifies that once an illicit connection has been identified, the DPW Director has the legal authority to suspend or terminate MS4 discharge access to the responsible party once a Notice of Violation has been provided to the violator. As stated in Section 14-131 of the ordinance, the person or persons responsible for the discharge are to be held accountable for said discharge and must terminate the discharge. The DPW may require the violator to complete one or more of the following:

1. *The performance of monitoring, analyses, and reporting;*
2. *The elimination of illicit connections or discharges;*
3. *That violating discharges, practices, or operations shall cease and desist;*

4. *The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;*
5. *Payment of a fine to cover administrative and remediation costs; and*
6. *The implementation of source control or treatment BMPs.*

In addition, "if abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed." If the violator fails to address the violation, "the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator."

The DPW will perform additional sampling following the removal of the illicit connection/discharge to ensure the storm water contamination has been fully addressed.

All IDDE investigations will be tracked and recorded through an Excel database. The DPW will continually manage and update the database with information relevant to the investigations which will include, but may not be limited to the following: Type of structure where contamination was identified (catch basin, manhole, outfall), structure ID (from GIS database), date contamination was identified, name of DPW staff who identified contamination, indicator of contamination/illicit discharge, method used to trace source of connection, property address of illicit connection, property owner information, date Notice of Violation was issued, date of discharge elimination, and means of discharge elimination and remediation.

V. Public Education and Outreach

Communication between town departments such as the DPW and residents of Cumberland is a key part of illicit discharge detection and elimination. Educating the public about stormwater and the harmful effects of illicit discharges into public waters brings awareness to the topic and can encourage a dialogue about how to eliminate these discharges. Once residents are aware of this issue, they can better inform the town of potential illicit discharges and connections in their neighborhoods.

Information regarding illicit discharges and the importance of functional stormwater systems is provided to the public through several programs identified in Appendix A of the Storm Water Management Program Plan (SWMPP).

The public can provide the Town with illicit discharge information and/or concerns through the following means:

- Installing and using the mobile application "Cumberland 311" which allows citizens a quick and easy reporting system;
- Visiting the Town of Cumberland website (www.cumberlandri.org); or
- Going to the SeeClickFix website (www.seeclickfix.com). Residents are able to report non-emergency concerns (including those that are storm water related) directly to the town through this portal. SeeClickFix is regularly checked by the town administration and reported issues are delegated to appropriate town departments.

APPENDIX A

IDDE ORDINANCE

APPENDIX B

IDDE QUALITY ASSURANCE PROJECT PLAN (QAPP)

The Cumberland DPW (or any entity the DPW contracts to perform the work) will perform sampling in accordance with the Standard Operating Procedures listed in Section III of this IDDE Plan.

This QAPP is modelled after the 2012 draft EPA New England Bacterial Source Tracking Protocol (provided to the Town as an attachment of the RIDEM Consent Agreement), and the 2016 RIDOT IDDE Plan.

Field investigation preparation

In preparation for field investigations, the DPW staff and/or their contractors who conduct the sampling investigations (the "Sampler") must perform several tasks. Investigation locations will already be identified via a desktop review as described in the IDDE Plan. Investigations can be dry weather surveys or wet weather surveys and are scheduled in accordance with the weather forecast.

Dry Weather Conditions = When there is less than 0.1 inches of rain in the preceding 72 hours and no significant snowmelt

Wet Weather Conditions = When there is a minimum of 0.25 inches of rain in the preceding 24-hours in the area of inspection. However, to facilitate sample planning and execution, precipitation events sufficient to produce flow in an outfall are also acceptable.

Preparation for Field Investigation: the day before sampling

1. Determine weather conditions to schedule field days:
   a. Go to www.wunderground.com
   b. Enter City, State or Zip Code into Search Box
   c. Scroll down to the HISTORY & ALMANAC detail box
   d. Click Monthly Calendar View (KPVD) This will provide a monthly view of daily weather conditions for the inspection area, including actual total precipitation for the day. If more information is required (i.e. time of precipitation), click on the specific day for detailed information.
2. Prepare a daily investigation schedule with the anticipated sampling locations, contact information of the Sampler(s), and expected departure and arrival times of the Sampler(s). Coordinate the sampling schedule with the lab (see below).
3. Review investigation sites and anticipate traffic control needs (e.g. safety cones, safe areas to park, etc.). Coordinate with the necessary traffic control to determine if their presence will be needed.
4. Contact the lab at least one day prior to a field sampling event (preferably 48 hours prior). The lab will prepare and supply the sampling bottles and the cooler a day or more before the field investigation. Provide the number of samples expected, the number of QA/QC sample bottles needed, and the sample IDs so the lab can prepare the sample labels. One out of 20 samples, with a minimum of one per day, should contain a blind duplicate (do not include the site or time of sample taken on this duplicate). The lab will also provide bottles for an equipment blank.

Preparation for Field Investigation: the day of sampling

1. Calibrate sampling equipment as noted in the Instrument Calibration section below.
2. Procure appropriate personal protective equipment (PPE) including high-visibility work vests, nitrile gloves for protection against chemical or bacteriological hazards, safety glasses and waders / boots.
3. Ensure appropriate field equipment is ready. In the morning before sampling begins, ice will need to be added to the cooler. Required field equipment is as follows:
    - PPE including work vests, gloves, safety glasses, and boots
    - Sampling bottles and labels as provided by laboratory
    - Ice-filled cooler
    - Chain of custody forms
    - Sampling locations map (with storm water feature IDs)
    - Camera or cellphone for sampling photos
    - Clipboard
    - Sharpie
    - HI 991300
    - QAPP
4. Contact the lab the morning of sampling to ensure they are prepared to accept samples.

Sampling procedures

Both dry and wet weather surveys follow the same sampling procedures as outlined in this section. An IDDE survey starts with a visual inspection of the area and if the outfall is producing flow, then sampling of the flow.

Upon arrival at a sampling site, the Sampler sets up safety equipment such as cones and hazard lights as appropriate near the sampling location and the vehicle. The Sampler parks their vehicle in a location and direction that is most amenable to the safety of the Sampler and that minimizes the disruption of traffic flow. The Sampler disposes of gloves safely after each sampling location to prevent the spread of potential contaminants.

Visual Analysis

The Sampler will perform a visual analysis of the discharge and surrounding area.

1. All outfalls have been previously GPS located and inspected for physical attributes. If any unusual physical attributes are identified, detail descriptions in a field note book.
2. Take photographs of the sampling location.
3. Examine the area around the outfall for visual signs of an illicit connection. Examine for odor, toilet paper, presence of white or gray filamentous bacterial growth, stained catch basins, grease, suds or soapy water, connection of other pipes into the system, etc.

Secure the Samples

Following the visual analysis, the Sampler performs field measurements and collects samples of the discharge flow.

The Sampler measures the parameters established within the Consent Decree:

- *Enterococcus*
- Coliphage
- Fecal coliform
- Surfactants
- Ammonia
- Chlorine
- Conductivity
- pH
- Temperature

The parameters to be analyzed at the Laboratory include fecal coliform, enterococcus, coliphage, surfactants, ammonia, and chlorine. Temperature, conductivity, and pH are measured directly in the field using the HI 991300. These parameters will be documented on the chain of custody forms.

One blind duplicate bacteria sample will be collected per sampling event or approximately one for every twenty bacteria samples. The other parameters will also be sampled in duplicate. These duplicates are useful in documenting the precision of the sampling process.

When possible, the Sampler collects water directly from the flowing discharge point. The table below provides a summary of all the parameters, their preservation requirements, holding times, and analysis methods used for testing.

Parameter	Preservation	Holding Time	Analysis Method
Enterococcus	Ice	6 hours to lab	Lab
Coliphage	Ice	6 hours to lab	Lab
Fecal coliform	Ice	6 hours to lab	Lab
Surfactants	None	48 hours*	Lab
Ammonia	None	28 days*	Lab
Chlorine	None	Immediate*	Lab
Conductivity	None	Immediate	HI 991300
pH	None	Immediate	HI 991300
Temperature	None	Immediate	HI 991300

*Holding times are as noted in the 2012 EPA New England Bacterial Source Tracking Protocol. All samples are delivered to the lab within 6 hours

Bacteria

The Sampler collects the bacteria samples (Enterococcus, fecal coliform, and coliphage) first because it is among one of the most sensitive parameters and collecting it prior to the other samples minimizes the chance of sample contamination via disturbed sediment or surface scum.

1. Label the 500 ml sample bottle with the date, time, initials of the Sampler, the parameters to be analyzed, and ID of the sampled storm water feature (identified in the GIS map).
2. Collect water sample for bacteria at the discharge point, with care to not disturb sediment materials or collect surface debris/scum as best possible. In cases where laboratory sample bottles are too large to be fully submersed in the stream, use a smaller sterilized bottle to transfer the sample into the larger sterilized container.

3. If collecting samples by hand, hold the bottle at the base or along the side. When ready to take the sample, take the cap off the sample bottle. Hold the cap in your other hand. Do not touch the inside of the bottle or cap. Do not put the cap on the ground. The bottle is sterile and only the effluent from the discharge point should touch the inside of the bottle.
4. Fill the sample bottle until the sample reaches between an inch to an inch-and-a-half of the top of the sample bottle.
5. Place the sample in a plastic bag and then within the cooler on ice to maintain a temperature of 4°C. Bacteria samples should not be held longer than six hours before transferring them to the laboratory.
6. If the station has been flagged for duplicate bacteria samples, collect another bacteria sample using the same process.
7. Fill out Chain of Custody and submit to the laboratory with the samples. The Sampler will keep a copy of the form for the DPW's records.

Surfactants

The Sampler collects one water sample in a new, separate 1 L bottle to be tested for surfactants. As with all samples, care should be taken to not disturb the sediment and/or collect surface debris.

1. Label the sample bottle with the date, time, initials of the Sampler, the parameters to be analyzed, and ID of the sampled storm water feature (identified in the GIS map).
2. Collect single water sample at the discharge point.
3. If collecting samples by hand, hold the bottle at the base or along the side. When ready to take the sample, take the cap off the sample bottle. Hold the cap in your other hand. Do not touch the inside of the bottle or cap. Do not put the cap on the ground. The bottle is sterile and only the effluent from the discharge point should touch the inside of the bottle.
4. Fill the sample bottle until the sample reaches between an inch to an inch-and-a-half of the top of the sample bottle.
5. Place the sample in a plastic bag and then within the cooler on ice to maintain a temperature of 4°C. Samples should not be held longer than six hours before transferring them to the laboratory.
6. Fill out Chain of Custody and submit to the laboratory with the samples. The Sampler will keep a copy of the form for the DPW's records.

Ammonia

The Sampler collects one water sample in a separate 500 ml bottle pre-filled with hydrochloric acid (used as preservation) to be tested for ammonia. As with all samples, care should be taken to not disturb the sediment and/or collect surface debris. Follow the same procedures 1-8 for surfactants listed above.

Total Chlorine

The Sampler collects two water sample in new, separate 500 ml bottles to be tested for total chlorine. As with all samples, care should be taken to not disturb the sediment and/or collect surface debris. Follow the same procedures 1-8 for surfactants listed above.

Temperature, Conductivity, and pH

The Sampler will use a portable HI 991300 (from Hanna Instruments) to measure the temperature, conductivity, and pH from the flow samples.

1. Calibrate or confirm recent calibration of the meter.
2. Follow the manufacturer's instructions to measure the temperature, conductivity, and pH directly in a specimen cup. The probe should gently swirled during the reading. Take the reading when it stabilizes.
3. Document the pH, conductivity, and temperature readings on the Chain of Custody form.

INSTRUMENT OPERATION

pH and Temperature Measurement:

- Before taking any measurement make sure the meter has been calibrated.
- If the probe has been left dry, soak in a storage or pH 7 solution for at least one hour to reactivate it.
- Select the pH mode with the SET/HOLD button.
- Submerge the probe in the sample to be tested while stirring it gently. Wait until the stability indicator on the top left of the LCD disappears. The pH value automatically compensated for temperature is shown on the primary LCD, while the secondary LCD shows the sample temperature.
- If measurements are taken in different samples successively, rinse the probe tip thoroughly with water and then with some of the next sample to be measured.

Conductivity Measurement:

- Place the probe in the sample to be tested. Use plastic beakers or containers to minimize any electromagnetic interference.
- Select EC mode with the SET/HOLD button.
- Tap the probe lightly on the bottom of the container to remove air bubbles that may be trapped inside the tip.
- Wait for a few minutes for the temperature sensor to reach thermal equilibrium (i.e. until the stability indicator on the top left of the LCD disappears).
- The meter will show the EC value automatically compensated for temperature, and the temperature of the sample.

INSTRUMENT CALIBRATION

pH Calibration:

- While in pH measurement mode, press and hold the MODE button until "CAL" is displayed on the lower LCD.
- Release the button. The LCD will display "pH 7.01 USE" (or "pH 6.86 USE", if you have selected the NIST buffer set).

- For a single point pH calibration, place the probe in any buffer from the selected buffer set (eg. pH 4.01 or pH 7.01 or pH 10.01). The meter will automatically recognize the buffer value. If using pH 7.01 (or pH 6.86 from the NIST buffer set), after recognition of the buffer press MODE to return to the pH measurement mode.
- For a two point pH calibration, place the probe in pH 7.01 (or pH 6.86, if you have selected the NIST buffer set). The meter will recognize the buffer value and then display "pH 4.01 USE".
- Place the probe in the second buffer (pH 4.01 or 10.01, or, if using NIST, pH 4.01 or 9.18). When the second buffer is recognized, the LCD will display "OK" for 1 second and the meter will return to normal measurement mode.
- To Clear Previous Calibrations, press the MODE button after entering the calibration mode. The lower LCD will display "ESC" for 1 second and the meter will return to normal measurement mode. The "CAL" tag on the LCD will disappear and the meter will be reset to the default calibration.

EC Calibration:

- While in the EC measurement mode, press and hold the MODE button until "CAL" is displayed on the lower LCD.
- Release the button and immerse the probe in the HI 7031 calibration solution ("µS 1413 USE").
- Once the calibration has been automatically performed, the LCD will display "OK" for 1 second and return to normal measurement mode.

Chain of custody

DPW chain of custody procedures follow the Laboratory standard operating procedures, and the DPW and company contracted to perform sampling maintains copies of the Submission Form/ Chain of Custody forms.

Data review and documentation

The DPW shall use the table below when reviewing the results of the storm water sampling to determine which parameter thresholds have been exceeded. All investigations and results shall be documented in the DPW's IDDE Excel database.

Parameter	**Threshold**	**Instrumentation**
Fecal coliform	>400 MPN/100 ml	Laboratory analysis
Coliphage	≥50 PFU/100 ml	Laboratory analysis
Enterococcus*	>61 CFU/100 ml	Laboratory analysis
Surfactants	≥0.25 mg/l	Laboratory analysis
Ammonia	≥0.5 mg/l	Laboratory analysis
Chlorine	>0.02 mg/l	Laboratory analysis
pH	<5 or >9	Field test
Conductivity	≥2,000 µS/cm	Field test

*For Class AA, A, B, B1, B(a), or B1(a) waters

(MNP=Most Probable Number; PFU=Plaque Forming Units; CFU=Colony Forming Units)

Deadlines

As listed in the IDDE Plan Requirements document:

1. Cumberland must initiate and assess an IDDE investigation within 60 days of identifying or being made aware of the presence of a potential illicit discharge into or from the MS4 based upon receiving any of the information listed above in the IDDE Ranking Process section of the IDDE Plan as criteria for high priority.
2. Investigations must be completed within 180 days of initiation by identifying a point of entry from a specific location or address that contributes wastewater or other illicit flow to the MS4 or documenting that an illicit discharge does not exist, unless not feasible. If an IDDE investigation is not completed within 180 days of initiation of the investigation, Cumberland must establish a schedule for completing the IDDE investigation as expeditiously as possible.
3. Identify and notify all parties responsible for any illicit discharge and the RIDEM within 30 calendar days of the date of verification of the source, and require immediate cessation of improper disposal practices in accordance with its legal authorities.
4. Illicit discharges to the MS4 shall be eliminated within 120 days of the date of verification. Where elimination of an illicit discharge within 120 days of its verification as an illicit discharge is not possible, take all reasonable and prudent measures to minimize the discharge of pollutants to and from its MS4 and establish an expeditious schedule for its elimination.
5. Complete dry weather and wet weather monitoring for the parameters identified in the sampling section above within 120 days of removal of the source after a verified illicit discharge to the MS4 has been eliminated to confirm that all illicit discharges have been eliminated.

APPENDIX G

Model Water Resource Protection Ordinance

A MODEL WATER RESOURCE PROTECTION ORDINANCE

This model water resource protection ordinance is intended to encourage Rhode Island cities and towns to protect their drinking water supplies from contamination due to the inappropriate use of land. This ordinance is designed to protect groundwater resources by identifying sensitive aquifer (or wellhead protection) areas and by establishing appropriate regulations within those areas. The ordinance incorporates both nitrogen management and stormwater control, two elements that are essential to groundwater protection.

This model ordinance as well as the model residential cluster development ordinance that follows also incorporate several definitions from other parts of Rhode Island's planning statutes; the sources of these definitions are indicated in brackets.

Outline of Ordinance

101-Purpose

1. It is the purpose of this ordinance to protect water resources in order to:

    a) Protect the public health. safety, and welfare of the residents of [name of local government) through the preservation of the (city or town]'s groundwater resources;

    b) identify uses that are prohibited or allowed only by special use permit within designated aquifer protection overlay districts;

    c) protect groundwater and surface water resources from nitrogen contamination and pollution from stormwater runoff,

    d) complement any soil erosion and sediment control ordinance that may have been previously enacted pursuant to the Rhode Island statutes (see R.I. Gen. Laws Chapter 46); and

    Rhode Island Gen. Laws §45@-5 contains a model soil erosion and sedimentation control ordinance. The ordinance described in this Chapter of this report, however, is significantly broader than the state model. While the state model focuses on minimizing soil erosion and controlling sedimentation from land development, the model ordinance in this report is instead designed to protect a community's groundwater from a variety of threats, including soil erosion and sedimentation control. As this model ordinance goes much further in protecting natural resources than the state model, it is recommended that communities that have adopted the state model also adopt this ordinance.

    e) protect other sensitive water resource areas, including those land areas that contribute recharge to private drinking water supply wells. runoff to a coastal or fresh water body, or other water resources considered susceptible to the inappropriate use of land.

102-Definitions

"As used in this" Ordinance. the following words and terms shall have the meanings specified herein:

1. "Aquifer Protection Overlay District" (APOD) means those land area(s) designated on a map adopted pursuant to. this ordinance that provide recharge to an existing or planned public drinking water supply well.
2. "Best management practices" mean any structural or nonstructural mechanism designed to minimize the impact of nonpoint source pollution on receiving waters or resources. including, but not limited to: detention ponds, construction or installation of vegetative swales and buffers. street cleaning, reduced road salting, installation of rock riprap. and public education programs.
3. "Development" means the construction. reconstruction conversion. structural alteration. relocation. or enlargement of any structure; any mine, excavation, landfill, or land disturbance: and/or any change in use. or alteration or extension of the use. of land. [Source: R.I. Gen. Laws. §45-24-31 (20).]
4. "Generic Substances" mean those substances listed in Exhibit A. attached hereto and incorporated herein,
5. "Lot" means either: (a) the basic development unit for determination of lot area, depth. and other dimensional variations; or (b) a parcel of land whose boundaries have been established by some legal instrument, such as a recorded deed or recorded map. and is recognized as a separate legal entity for purposes of transfer of title. [Source: R.I. Gen. Laws, §45-24-31 (38).]
6. "Nitrogen management" means the process of ensuring that nitrogen generated by land uses does not exceed established capacities of the resources receiving nitrogen inputs.

If not regulated, certain types and densities of development can generate- nitrogen levels that may exceed state and federal guidelines governing drinking water supplies as well as estuarine resources.

7. "Overlay district" means a district that is superimposed over one or more zoning districts or pans of districts and that imposes specified requirements that are in addition to those otherwise applicable for the underlying zone. [Source: R.I. Gen. Laws, §45-24-31(50).]

An overlay district is a type of district that lies on top of another, like a bedspread over a blanket. The blanket is the underlying zoning district, such as a single-family detached zone with 10,000-square-foot lots. With the APOD, that underlying zone does not change. instead, like the bedspread over the blanket. the APOD requirement is placed over portions of the underlying zone or zones. The boundaries of the overlay also do not have to correspond perfectly with the underlying zone. The overlay district may cover only part of a regular zone or may cover part of several underlying zones. A R of the provisions of the underlying zones remain the same, including use, density, and setbacks. What changes is that there is now a new and additional requirement established by the APOD to meet certain groundwater protection objectives.

8. "Stormwater management " means the process of ensuring that the magnitude and frequency of stormwater runoff does not increase the hazards associated with flooding and that water quality is not compromised by untreated stormwater flow.

If not properly managed, stormwater runoff can increase flood flows and can carry contaminants into groundwater and surface water systems, threatening receiving water quality.

9. "Subdivision" means the division or re-division of a lot, tract, or parcel of land into two or more Jots, tracts, or parcels. Any adjustment to existing lot lines of a recorded lot by any means - shall be considered a subdivision. The division of property for purposes of financing constitutes a subdivision. [Source: R.1. Gen. Laws. §45-23-32(51).]

103-Applicability

1. All developments located within a designated aquifer protection overlay district (A POD) designated pursuant to Section [104] below shall meet the requirements of this ordinance.

2. Where this ordinance is less strict or where this ordinance is silent as to a particular issue, then all developments shall instead conform to the requirements of the underlying zoning district(s) in which the developments are located.

104-Designation of APOD, Establishment of Map; Appeal of APOD Designation

1. An APOD, as designated herein, includes those areas that require water resource protection. such as wellhead protection areas, aquifer recharge areas. and watersheds to various fresh and coastal resources.

2. The boundaries of an APOD shall be based upon a delineation of aquifer materials and/or wellhead protection areas for public supply wells, as well as other hydrologic and/or hydrogeologic data and analysis completed by a groundwater hydrologist or other person who by education. training, and experience. is qualified in such regard.

3. The A POD boundaries shall be depicted on a reproducible map entitled "Aquifer Protection Overlay District, [City or Town of -]" that shall be incorporated herein by reference and shall be drawn to an appropriate scale.

The boundaries of the APOD must be determined prior to adopting this ordinance.

4. The APOD boundaries shall be considered to be superimposed over any other zoning district established by the zoning ordinance and shall be indicated as such on the zoning map.

5. Where the boundary line of the APOD divides a lot, the requirements established by this ordinance shall apply only to the portion of the lot that is located within the APOD.

6. Where the boundaries of the A POD ma p are in doubt or dispute. the burden of proof shall be upon the owner(s)/applicant(s) of/for the land in question to show where the boundaries should be located. While proof may be submitted by a professional hydrogeologist challenging the boundaries, the presumption is that the boundaries identified on the APOD map are accurate. An appeal of the A POD designation shall be as follows: *[insert procedures or provide reference to local zoning regulations.]*

105-Uses Prohibited Within APODs

1. The following uses and activities shall be prohibited within any A POD:

   a) landfills, public or private;

   b) manufacturing and production of paving, roofing, and other construction materials using petroleum-based coating and preserving materials;

   c) sewage treatment facilities, public or private, with on-site disposal of effluent, unless tertiary treated;

   d) airports. boat, truck. and bus terminals or stations;

   e) gasoline stations and automotive service stations;
   f) car washes;

   g) dry cleaning establishments;

   h) road salt stockpiles;

   i) dumping of snow from outside the APOD; and

j) [list other uses or activities that withdraw large volumes of groundwater for manufacturing or consumption. uses that generate large volumes of sewage. and uses that may generate large volumes of sewage that is then disposed of outside of the aquifer or watershed or that involve the manufacturing, storing, or disposing of toxic or hazardous materials.

This Section allows cities and towns to develop a list of prohibited uses and activities from within the APOD. Many communities in Rhode Island already have a comprehensive list of prohibited uses and activities within groundwater protection districts found in their zoning ordinances. These communities may wish to transfer that list into this ordinance and, once adopted. remove preexisting groundwater protection ordinances from the city or town code.

106-Uses Allowed Within APODs, Subject to Special Use Permit

1. The following uses and activities located within an A POD shall require a special use permit from the zoning board of review, in accordance with R.I. Gen. Laws. §45-24-42:

   a) any subdivision of land into 10 or more lots;

   b) the construction of 10 or more dwelling units. whether on one or more contiguous lots, tracts, or parcels, or whether contained within one or more structures;

   c) any nonresidential use of 40,000 square feet or greater in either lot size or gross floor area;

   d) any construction that renders an area 10,000 square feet or greater of impervious surface;

   e) retail/wholesale sales establishments that, at any time. store or handle Generic Substances for resale in their original unopened containers that exceed 30 gallons liquid or 25 pounds solid;

   f) office and commercial uses that, at any time, involve the storage or handling of Generic Substances in quantities that exceed 30 gallons liquid or 25 pounds solid;

   g) household uses that, at any time, involve the storage or handling-lg of Generic Substances in quantities that exceed 30 gallons liquid or 25 pounds solid; and,

   h) municipal uses that, at any time, involve the storage or handling of Generic Substances in quantities that exceed 30 gallons where said substance is a liquid or 25 pounds where said substance is a solid.

Section 106 establishes those uses and activities that will require a special use permit in order to be located within an APOD. The special use approval procedure gives the municipality the opportunity to carefully review the proposed use or activity to ensure its appropriateness within the APOD and to attach conditions, if necessary, to its approval. This fist is shown in brackets because it. is provided for illustrative purposes only and should be altered to reflect local conditions and needs.

107-General Exemptions

1. The following uses and activities shall be exempted from the requirements of Section [106] above and may be located within an APOD without a special use permit:

   a) Continuous Transit. The transportation of any Generic Substance provided that the transporting motor vehicle is in ·continuous transit;

   b) Vehicular and Lawn Maintenance Fuel and Lubricant Use. The use in a vehicle or lawn maintenance equipment of any Generic Substance solely as fuel or lubricant in that vehicle or equipment fuel tank;

c) Application of Pesticides. Herbicides. Fertilizers. Fungicides, and Rodenticides. The application of those Generic Substances used as pesticides, herbicides, fertilizers, fungicides, and rodenticides in recreation. agriculture. pest control, and aquatic weed control activities, provided that:

(1) the application is in strict conformity with the use requirements set forth in the U.S. EPA's substance registries and as indicated on the containers in which the substances are sold: and

(2) the commercial application of any of the pesticides, herbicides, fertilizers, fungicides. and rodenticides shall be noted in the records of the certified operator that shall be kept of the date and amount of these substances applied at each location and made available for inspection at reasonable times by the permit-granting authority.

d) Retail/Wholesale Sales Activities. Retail/wholesale sales establishments that store or handle Generic Substances for resale in their original unopened containers, provided that such establishments do not store or handle quantities of Generic Substances that exceed 30 gallons liquid or 25 pounds solid;

e) Office and Commercial Uses. Office and commercial use of Generic Substances below the aggregate sum not exceeding thirty (30) gallons where said substance is a liquid or twenty-five (25) pounds where said substance is a solid;

f) Construction Activities. The activities of constructing, repairing, or maintaining any building or structure on lands located within an APOD, provided that all contractors, subcontractors, laborers, material men, and their employees us those applicable Best Management Practices, as set forth in Exhibit B attached hereto and incorporated herein, when using, handling, storing, or producing a Generic Substance;

g) Household Use. The household use of Generic Substances below the aggregate sum not exceeding 30 gallons where said substance is a liquid or 25 pounds where said substance is a solid;

h) Municipal Use. The municipal use of Generic Substances in quantities not exceeding 30 gallons where said substance is a liquid or 25 pounds where said substance is a solid; and

i) Underground Storage of Oil(s). The underground storage of oil(s) used for heating fuel, provided that the container used for such storage shall be located within an enclosed structure that is sufficient to preclude leakage of oil to the external environment and to afford routine access for visual inspection (e.g., cement-floored basement) and shall be sheltered to prevent the intrusion of precipitation

These exemptions from a special use permit are also only a recommended listings Municipalities should tailor their own ordinance as appropriate.

108-Criteria for Special Use Approval; Design and Operating Guidelines

1. No special use permit shall be granted for a development identified in Section [106] above that does not or, after conditions are imposed. will not comply with the requirements of this ordinance. Therefore. as a condition of ranting a special use permit for uses and activities identified in Section [106] above, the permit-granting authority may require adherence to any or all of the following design and operation guidelines. where, in its opinion. such adherence would further the purposes of this ordinance.

Municipalities are encouraged to expand this Section to coincide with current "criteria for approval" sections within their zoning ordinances. For example, existing land-use regulations may already

contain specific prerequisites for approval and findings of fact that must be made prior to the issuance of a special use permit.

a) Containment of Regulated Substances. Leakproof trays under containers. floor curbing, or other containment systems to provide secondary liquid containment shall be installed. The containment shall be of adequate size to handle all spills, leaks, overflows, and precipitation until appropriate action can be taken. The specific design and selection of materials shall be sufficient to preclude any Generic Substance loss to the external environment. Containment systems shall be sheltered so that the intrusion of precipitation is effectively prevented. The owner/operator may choose to provide adequate and appropriate liquid collection methods rather than sheltering only after approval of the design by the permit-granting authority. These requirements shall apply to all areas of use, production, and handling, to all storage areas, to loading and off-loading areas. and to both above ground and underground storage areas.

b) Emergency Plan. An emergency plan shall be prepared and filed along with the special use permit application that indicates the procedures chat will be followed in the event of the spillage of a Generic Substance so as to control and collect all such spilled material in such a manner and prevent it from reaching any storm or sanitary drains or the groundwater.

c) Inspection. Each day of operation, a responsible person designated by the permittee who stores, hand les, uses, or produces the Generic Substances shall check for breakage or leakage of any container holding a Generic Substance. Electronic sensing devices may be employed as part of the inspection process, if approved by the permitting granting authority and provided that the sensing system is also checked daily for malfunctions. The manner of daily inspection shall not necessarily require the actual physical inspection of each container, provided that the location of the containers can be inspected to a degree which reasonably assures the permit- granting authority that breakage or leakage can be detected by the inspection. Monitoring records shall be kept daily and made available to the permit-granting authority on a quarterly basis.

d) Reporting of Spills. Any spill of a Generic Substance in excess of the nonaggregate quantity thresholds shall be reported by telephone to the Fire Department and [insert additional agency, as necessary] within one hour of discovery of the spill. Clean-up shall commence immediately upon discovery of the spill. A full written report that includes a description of the steps taken to contain and clean up the spill shall be submitted to the Fire Department and [insert additional agency, as necessary] within (15) days of discovery of the spill.

e) Monitoring of Regulated Substances in groundwater Monitoring Wells. If required by the permit-granting authority, groundwater, water monitoring well(s) shall be provided at the expense of the permitee in amanner, numbers and location approved by the permit-granting authority. Exception by the permit-granting authority to be adequate for this provision, they. shall be installed by a water well contractor. Samples shall be analyzed, and analytical reports that describe the quantity of any Generic Substances present in each monitoring well shall be prepared by a Rhode Island certified laboratory.

f) Expansions, Alterations and Modifications. The permit-granting authority shall be notified in writing prior to the expansion. alteration. or modification of a use or activity holding a special use permit- under this ordinance. Such expansion alteration or modification may result from increased square footage of production or storage capacity. or increased quantities of a Generic Subs1ance.or changes in types of Generic Substances beyond those square footages. quantities. and types upon which the permit was issued. Excluded from notification prior to alteration or modification are changes in types of Generic Substances used in a laboratory or laboratories designated as such in the currently valid perm it that do not exceed the nonaggregate limits and that are within the Generic Substances listed in the permit. The introduction of any new Generic Substance shall not prevent the revocation or revision of any existing special use permit- if, in the opinion of the permit-granting authority, such introduction

substantially or materially modifies, alters. or affects the conditions upon which the existing special use permit was granted or the ability 10 remain qualified as a General Exemption under Section [107] above. if applicable. or 10 continue to satisfy any conditions that have been imposed as part of a special use permit, if applicable.

This Section provides a list of important guidelines for both the permit-granting authority and the applicant to consider for developments located within an APOD. While these guidelines are directed at developments that will use any of the Generic Substances identified in Exhibit A, many are applicable to other types of developments that also require a special use perm it under this ordinance. For example, the permit-granting authority may wish to require the installation of monitoring wells and may establish a monitoring schedule for certain large-scale developments within an APOD, even those that may not use a Generic Substance.

109-Performance Standards: Nitrogen Management

1. Land uses and developments within APOD's that require a special use permit pursuant to Section [1 06] shall conform to the following performance standards for nitrogen management. These performance standards shall be considered as criteria for the grant of a special use permit, as required by RI Gen. Laws §45-24-42 (3).

Nitrogen can occur in several forms in water near its sources: organic nitrogen compounds, ammonium, nitrite, and nitrate. Generally, these are oxidized to nitrate by the time the water reaches a public drinking water supply well. Therefore, this ordinance assumes that all species of nitrogen have been converted to nitrate in the well water.

Nitrogen has been selected as an index for the protection of drinking water supplies in Rhode Island cities and towns for several reasons, each of which is directly linked to public health. Nitrate-nitrogen is a public drinking water contaminant that poses a health hazard. Studies by the US EPA's Office of Groundwater and Drinking Water have concluded, that nitrate, when ingested, can cause the potentially fatal condition of methemoglobinemia (blue baby syndrome) in very young infants. Excessive consumption of products containing high levels of nitrate has also been linked to cancer in adults. Finally, the presence of nitrogen in groundwater often serve as an indicator of the presence of wastewater with other more dangerous compounds such as viruses and halogenated hydrocarbons. that are known to cause illnesses in humans.

a) No land use or development regulated by this ordinance shall be allowed within an APOD where an active or planned public drinking water supply well, as identified in the [city or town]'s comprehensive plan, has concentrations of nitrogen in groundwater greater than 5 milligrams per liter (5 mg/1).

This subparagraph establishes a prohibition on new development within an A POD where a public drinking water supply well has nitrogen concentrations greater than 5 milligrams per liter. It is important to note that the federal-maximum contaminant level for nitrogen in drinking water is 10 mg/ 1. However, adoption of a more conservative value is recommended for several reasons. First, nitrogen is a conservative com pound in groundwater and, in most cases, does not react with anything after it enters the aquifer system. It does not decay, enter into processes which cause it to be precipitated or volatilized, enter into ion exchange, or become absorbed into aquifer materials. In addition, nitrogen is highly mobile, traveling along with, and at the same speed as, flowing groundwater. Therefore, sampling of nitrogen levels at public drinking water supply wells can be misleading. A sampling result of 8 mg/1 in January, for instance, may provide no indication that a subsequent test in July will result in a concentration over 10 mg/1. By choosing a more conservative planning standard, the com m unity will have more time to react to elevated (or elevating) nitrogen levels.

Note that subparagraphs (a) and (b) do not regulate land use or development specifically for the protection of coastal (estuarine) or other fresh water resources (e.g., lakes and ponds), Due to the unique carrying capacities of the state's coastal and fresh water systems, this ordinance should only be used to regulate

development, within watersheds to fresh or coastal systems if the threshold capacities (i.e., the assimilative capacities of the regulated fresh or coastal water resource) have been determined. Once determined, this ordinance can be used and the appropriate nutrient limitation can be established. This limitation can be established, as recommended in subsection a), at the downgradient property boundary or on a per-acre basis (e.g., no more than "x" pounds of nitrogen can be generated per 10 acres).

b) Any permissible land use or development within an APOD, not precluded by paragraph 1) above, shall not generate, at the downgradient property boundary, nitrogen levels greater than 5 mg/1. For the purposes of calculating nitrogen generation, the following standards shall be used:

(1) Nitrogen from dwelling units that use septic systems (assuming three persons per dwelling): 35 mg/1.

The mass of nitrogen entering groundwater after being discharged from a septic system is estimated at 5.85 pounds of nitrogen per person, per year. This contribution, when combined with an estimated water use of 55 gallons per day per person, multiplied by an average of three persons per dwelling, yields an average concentration from a dwelling at 35 mg/1 nitrogen per year.

(2) Nitrogen from lawn fertilizers: three pounds per 1,000 square feet (25% leached)

The mass of nitrogen entering groundwater from lawn and shrub fertilization is estimated at three pounds of nitrogen per 1,000 square feet of lawn area with an average lawn size of 5,000 square feet. Twenty-0five percent of the applied nitrogen is estimated to reach the water table (i.e., leach).

(3) Nitrogen from crops/pasture/farm animals: [insert value to be obtained from the LI. S. Natural Resources Conservation Service (NRCS)]

Agricultural activities can be significant source of nitrogen in groundwater. If a portion of an APOD is used to grow crops or raise farm animals, their respective nitrogen inputs should be obtained and calculated. Specific loading rates for nitrogen applications for various crops, as well as inputs from kept animals (e.g., dairy cattle, horses or fowl), should be obtained from the U.S. Natural Resources Conservation Service (NRCS).

(4) Nitrogen in background precipitation: 0.05 mg/1

Recharge from natural (undeveloped) land is assumed to be 18 inches per year (generalized throughout Rhode Island) and the recharge is assumed to have a concentration of 0.05 mg/1 of nitrogen.

(5) Other land uses as allowed by zoning: [insert literature values]

It is likely that some land uses and development proposals that contribute nitrogen to groundwater, no included in the listing above, may be proposed within an APOD (e.g., a golf course). Evaluation of nitrogen inputs front these uses should be evaluated based on existing literature, including work on file with the Narraganset Bay Project, the Rhode Island Department of Environmental Protection, and the U.S. EPA.

110 – Performance Standards: Stormwater Management

1. Land uses and developments within APODs that require a special use permit pursuant to Section [106] above, shall conform to the following performance standards for stormwater management. These performance standards shall be considered as the criteria for the grant of a special use permit as required by RI Gen. Laws §45-24-42 (3).

Stormwater is a leading cause of pollution to Rhode Island's groundwater and surface waters. The majority of shellfish area closures in the northeastern states, including Rhode Island, are linked to chronic and untreated stormwater discharges. Lake and coastal water eutrophication is enhanced by nutrient inputs from storm-water runoff. Drinking water supplies are threatened by a wide variety of contaminants present in storm water.

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Stormwater is generated as rainfall washes off the land surface and transports a variety of pollutants into receiving waters, including groundwater. Many pollutants are generated by sources beyond a local government's control, such as atmospheric deposition and emissions from automobiles. Other sources, however, including septic systems. domestic animals unmanaged parking areas. and liner accumulating along pavement surfaces, are contaminant inputs within the powers of local government control.

While at first glance stormwater management appears a complicated and overly technical task. The EPA and the Rhode Island Department of Environmental Protection have prepared numerous guidance documents on stormwater management, and many cities and towns in the state have ongoing stormwater management programs. In addition, professional engineers and site planners throughout the state are generally familiar with the principles of stormwater management, particularly with the requirements proposed in this ordinance.

(a) No development shall result in a direct discharge of untreated stormwater, either on or offsite.

Untreated stormwater is linked to the degradation of water quality. This ordinance requires that no regulated development or land-use discharge of stormwater occur without adequate treatment. Adequate treatment can be accomplished by any one or a com bination of well published "best management practices." These practices include, but are not limited to, the use of detention ponds. infiltration basins. infiltration trenches, vegetated buffers, erosion control. and sedimentation reduction.

(b) Post development discharge rates shall not be greater than predevelopment discharge rates.

It is accepted practice to ensure that Post development peak discharge rates from a developed site match or fall below predevelopment runoff conditions. This requirement may be met by ensuring that stormwater velocity and volume from post-development conditions do not exceed velocity and volume from predevelopment conditions.

(c) New development shall maximize recharge to groundwater.

This performance standard is designed to maintain recharge rates to groundwater through the use of best management practices. This requirement is particularly important where developments reach in large areas of impervious surfaces (e.g., large parking areas). Cities and towns are encouraged to supplement this performance standard with zoning regulations that restrict the percent of a lot that can be rendered impervious by structures and paving materials.

(d) New development shall be required to remove, onsite, no less than 80% of the annual total suspended solids generated from development runoff.

Total suspended solids are considered a key ingredient in sto9rmwater runoff, and, if removed, most often result in successful stormwater management. Total suspended solids can readily be removed through employment of best management practices, such as the use of sand and/or organic filters, wet ponds, constructed wetlands, and dry wells. (Source: Massachusetts

Department of Environmental Protection. Massachusetts Performance Standards and Guidelines for Stormwater Management (Boston, Mass.: The Department 1997))

(e) Best management practices shall be maintained for appropriate periods of time.

The success of stormwater management programs proffered by an applicant within an APOD, or required as a condition of special use permit approval, must be maintained for continued stormwater treatment. This performance standard is designed to ensure that proper covenants, deed restrictions, bonds, or other guarantees are in place coincident with the grant of a permit for development.

111-Preapplication Conference Requirement

1. Timing. As provided for in RI Gen. Laws 45-24-48, prior to the submission of an application for a special use permit under this ordinance, the applicant shall meet with the permit-granting authority at a public meeting to discuss the proposed development in general terms and establish the plan filing requirements. The permit-granting authority shall meet with an applicant within 21 days following a written request submission to the permit-granting authority and the [City or Town] clerk. If the permit-granting authority fails to meet with an applicant who has requested such a meeting within 21 days of said request and said meeting has not been postponed due to mutual agreement, the applicant may proceed with a special use permit application without need for a preapplication conference.

2. Filing Requirement. The purpose of the pre-application conference shall be to inform the permit granting authority as to the preliminary nature of the proposed project, and, as such, no fo9rmal filings are required for the conference. However, the applicant is encouraged to prepare sufficient preliminary site design or engineering drawings to inform the permit-granting authority of the scale and overall design of the proposed project.

The purpose of a pre-application conference is to give the permit-granting authority advance notice of an application for development within the APOD and remove some of the “pressure” that a Board may experience once a formal special use permit has been applied for. The conference is further designed to educate both the permit-granting authority and the applicant as to the project and the likely concerns it will raise. Since there is no formal filing requirements proposed in this model ordinance, cities and towns may articulate their own specific filing requirements, although it is recommended that these requirements be kept to a minimum for this pre-filing phase. Those cities and towns with site plan review or other local land-use regulations that require pre-application meetings or conferences may wish to substitute the process described in this section with their existing pre-application review regulations and are encouraged to combine the preapplication conference required by this ordinance with one that may also be required under another local regulation.

112-Special Use Permit Filing Requirements

1. Plan Filing Requirements. Unless determined by the permit-granting authority at the preapplication conference that some of the following requirements are not necessary to reach a decision on the merits of the special use permit application, the foll9oowing plans/items shall be submitted for development within an APOD.

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a) Nitrogen Management. The applicant shall provide an analysis of the impact of the proposed development demonstrating compliance with the requirements of Section 109(1)(b) as well as certification that the conditions identified in Section 109 (1)(a) do not exist as the most recent sampling data obtained by the municipality.

b) Stormwater Management. The applicant shall provide a narrative and, if relevant, a quantitative analysis of how the proposed project complies with the performance standa5rds for stormwater management set forth in Section [110]. The analysis shall be prepared by a professional engineering registered in the State of Rhode Island. The analysis shall set forth in detail best management practices designed to mitigate the impacts of stormwater runoff.

The plan filing requirements are intended to place an applicant for a special use permit within an APOD on notice as to what materials will be expected as part of the application. The requirements specified focus only on the two areas highlighted by this ordinance: stormwater and nitrogen management. Local governments should consider expanding this Section to encompass regulation of other areas of concern (e.g., toxic and hazardous materials).

113-Performance Guarantee

1. As generally provided for in RI Gen Laws §45-23-16, as a condition of granting a special use permit requiring the construction of structural best management practices or the use of best management practices utilizing plan or wetland materials, the permit-granting authority shall require that the construction or plan materials be secured by the following methods, which methods may be selected and from time to time varied by the applicant.

   a) By a proper bond or deposit of money or negotiable securities sufficient in the opinion of the permit-granting authority to secure performance of the construction and implementation f the best management practice(s) agreed to as part of the special use permit; and/or

   b) By a covenant executed and duly recorded by the owner of record, running with the land, whereby said best management practices are completed before such buildings or appurtenances thereto may be eligible for an occupancy as required by the [city or town]'s zoning ordinance.

2. If subparagraph (a) is selected by the applicant, in no event shall the [city or town] retain a bond or other funds for longer than 12 months following the implementation of the best management practice.

114-Release of Guarantee

1. Performance bonds, deposits, or covenants may be released in whole or from time to time in part when the work has been satisfactorily completed in the opinion of the permit-granting authority. The permit-granting authority shall release the interest of the [city or town] in such bond and shall return the bond or the deposit to the person who furnished the same and shall release the covenant by appropriate instrument that shall be suitable for recording.

2. Requests for all releases shall be by certified, return receipt letter to the permit-granting authority and shall outline that portion of the work to be released and shall be accompanied by a professional engineer's certification and that the work has been done in accordance with the requirements of the special use permit.

3. If the permit-granting authority, determines that said construction or other best management practice has not been completed to its satisfaction, it shall send a notice to such effect to the applicant by certified, retu4rn receipt letter. The notice shall state how the construction r best management practice fails to comply with the special use permit and that failure of the applicant to comply within 45 days after the receipt by the permit-granting authority of the applicant's request for release shall cause all obligations under the bond or covenant to cease and terminate by operation of law. In the event that said 45 days period expires without such specification, or without the release and return of the bond or release of the covenant, the [town or city] clerk shall issue a certificate to such effect suitable for recording.

Sections 113 and 114 are included due to the nature of some of the possible conditions linked to a special use permit approval. These include the construction f structures or the planting of wetlands vegetation. As a result, it is important that the permit-granting authority have a mechanism for ensuring that the structural requirements work and the wetland plants survive a growing season. These sections provide details for securing performance and releasing the performance guarantees. The requirements of these sections are in compliance with the general requirements of RI Gen. Laws §45-23-16.

115-Severability

1. If any provision of this ordinance is held invalid by the court of competent jurisdiction, the remainder of the ordinance shall not be affected thereby. The invalidity of any section or sections or parts of any section or sections of this ordinance shall not affect the validity of the remainder of the [city or town]'s zoning ordinance.

This Section is a generic severability clause. Severability clauses are intended to allow a court to strike or delete portions of a regulation that it determined to violate state or federal law. In addition, the severability clause provides limited insurance that a court will not strike down the entire ordinance should it find one or two offending sections.

EXHIBIT A
GENERIC SUBSTANCES LIST

Acid and basic cleaning solutions
Antifreeze and coolants
Arsenic and arsenic compounds
Bleaches, peroxides
Brake and transmission fluids
Brine solution
Casting and foundry chemicals
Caulking agents and sealants
Cleaning solvents
Corrosion and rust prevention solutions
Cutting fluids
Degreasing solvents
Disinfectants
Electroplating solutions
Explosives
Fertilizers
Fire extinguishing chemicals
Food processing wastes
Formaldehyde
Fuels and additives
Gasolines
Glues, adhesives, and resins
Greases
Hydraulic fluid
Indicators
Industrial and commercial janitorial supplies
Industrial sludges and still bottoms
Inks, printing and photocopying chemicals
Laboratory chemicals
Liquid storage batteries
Medical, pharmaceutical, dental, veterinary, and hospital solutions
Mercury and mercury compounds
Metals finishing solutions
Oils
Paints, primers, thinners, dyes, stains, wood preservatives, varnishing, and cleaning compounds
Painting solvents
PCBs
Pesticides and herbicides
Plastic resins, plasticizers and catalysts
Photo development chemicals
Poisons
Polishes
Pool chemicals in concentrated form
Processed dust and particulates
Radioactive sources
Reagents and standards
Refrigerants
Roofing chemicals and sealers
Sanitizers, disinfectants, bactericides, and algaecides
Soaps, detergents, and surfactants
Solders and fluxes
Stripping compounds

Tanning industry chemicals
Transformer and capacitor oils/fluids
Water and wastewater treatment chemicals

EXHIBIT B
"BEST MANAGEMENT PRACTICES"
FOR THE CONSTRUCTION INDUSTRY

A. The general contractor or, if none, the property owner, shall be responsible for ensuring that each contractor or subcontractor evaluates each site before construction is initiated to determine if any site conditions may pose particular problems for the handling of any Generic Substance. For instance, handling Generic Substances in the proximity of water bodies or wetlands may be improper.

B. If any Generic Substances are stored on the construction site during the construction process, they shall be stored in a location and manner that will minimize any possible risk of release to the environment. Any storage container of 55 gallons or 440 pounds or more containing Generic Substances shall have constructed below it an impervious containment system constructed of materials of sufficient thickness, density, and composition that will prevent the discharge to the land, groundwaters, or surface waters, of any pollutant that may emanate from said storage container or containers. Each containment system shall be able to contain 150% of the contents of all storage containers above the containment system.

C. Each contractor shall familiarize him/herself with the manufacturer's safety data sheet supplied with each material containing a Generic Substance and shall be familiar with procedures required to contain and clean up any releases of the Generic Substance. Any tools or equipment necessary to accomplish same shall be available in case of a release.

D. Upon completion of construction, all unused and waste Generic Substances and containment systems shall be removed from the construction site by the responsible contractor and shall be disposed of in a proper manner as prescribed by law.

APPENDIX H

Town Operations and Activities with Associated Potential Pollutants

Department/ Facility	Address	Operations and Activities										
		Construction	Snow Removal	Paving/ roadside stabilization	Road deicing	Road sweeping	Animal waste	Spill prevention, control	Vehicle maint.	Vehicle wash	Vehicle fuel	Pesticide Herbicide Fertilizer use
Highway Garage	37 Blackstone St	X	X	X	X	X		X	X	X	X	X
Monastery	1464 Diamond Hill Rd								X	X		X
Town Hall	45 Broad St							X				
Rescue	1512 Mendon Rd							X	X	X		X
Water Dept.	98 Nate Whipple Highway	X	X	X				X	X	X		
School Dept.	2600 Mendon Rd	X	X		X	X		X	X	X		X
Animal Control	44 Martin St						X			X		
Police Dept.	1380 Diamond Hill Rd							X	X	X		

APPENDIX I

2016 Town of Cumberland Comprehensive Plan

(to save paper, please use the following link:
https://www.cumberlandri.org/sites/cumberlandri/files/uploads/cumberlandcompplan2016_-_final_posted_to_ri_division_of_planning.pdf