Year 3 Annual Report
Massachusetts Small MS4 General Permit
Reporting Period: July 1, 2020-June 30, 2021

Please DO NOT attach any documents to this form. Instead, attach all requested documents to an email when submitting the form

Unless otherwise noted, all fields are required to be filled out. If a field is left blank, it will be assumed the requirement or task has not been completed. Please ONLY report on activities between July 1, 2020 and June 30, 2021 unless otherwise requested.

Part I: Contact Information

Name of Municipality or Organization: City of Fitchburg

EPA NPDES Permit Number: MAR041189

Primary MS4 Program Manager Contact Information

Name: Nicholas Erickson, PE Title: Civil Engineer

Street Address Line 1: Fitchburg DPW

Street Address Line 2: 301 Broad Street

City: Fitchburg State: MA Zip Code: 01420

Email: nerickson@fitchburgma.gov Phone Number: (978) 829-1905

Stormwater Management Program (SWMP) Information

SWMP Location (web address): https://www.fitchburgma.gov/463/Stormwater-Management-Program

Date SWMP was Last Updated: Sep 24, 2021

If the SWMP is not available on the web please provide the physical address:

Part II: Self-Assessment

First, in the box below, select the impairment(s) and/or TMDL(s) that are applicable to your MS4. Make sure you are referring to the most recent EPA approved Section 303(d) Impaired Waters List which can be found here: https://www.epa.gov/tmdl/region-1-impaired-waters-and-303d-lists-state

Impairment(s)

- [x] Bacteria/Pathogens
- [ ] Chloride
- [ ] Nitrogen
- [x] Phosphorus
- [ ] Solids/ Oil/ Grease (Hydrocarbons)/ Metals

TMDL(s)

In State:

- [ ] Assabet River Phosphorus
- [ ] Bacteria and Pathogen
- [ ] Cape Cod Nitrogen
- [ ] Charles River Watershed Phosphorus
- [ ] Lake and Pond Phosphorus

Out of State:

- [ ] Bacteria/Pathogens
- [ ] Metals
- [ ] Nitrogen
- [ ] Phosphorus

Clear Impairments and TMDLs

Next, check off all requirements below that have been completed. By checking each box you are certifying that you have completed that permit requirement fully. If you have not completed a requirement leave the box unchecked. Additional information will be requested in later sections.

Year 3 Requirements

- [x] Inspected and screened all outfalls/interconnections (excluding Problem and Excluded outfalls)
- [x] Updated outfall/interconnection priority ranking based on the information collected during the dry weather inspections as necessary
- [x] Post-construction bylaw, ordinance, or other regulatory mechanism was updated and adopted consistent with permit requirements

Optional: If you would like to describe progress made on any incomplete requirements listed above, provide any additional information, and/or if any of the above year 3 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

All outfalls and interconnections have been inspected during dry weather. There were a number of structures that were previously mapped as outfalls that upon field inspection do not appear to be MS4 outfalls. The City is continuing to confirm the types of structures.

Annual Requirements

- [x] Provided an opportunity for public participation in review and implementation of SWMP and complied with State Public Notice requirements
- [x] Kept records relating to the permit available for 5 years and made available to the public
- [x] The SSO inventory has been updated, including the status of mitigation and corrective measures implemented
  - ( ) This is not applicable because we do not have sanitary sewer
  - ( ) This is not applicable because we did not find any new SSOs

- (●) The updated SSO inventory is attached to the email submission
- ( ) The updated SSO inventory can be found at the following website:

  The SSO inventory can also be found on the City's Stormwater Webpage

- [x] Properly stored and disposed of catch basin cleanings and street sweepings so they did not discharge to receiving waters
- [x] Provided training to employees involved in IDDE program within the reporting period
- [x] All curbed roadways were swept at least once within the reporting period
- [x] Updated system map due in year 2 as necessary
- [x] Enclosed all road salt storage piles or facilities and implemented winter road maintenance procedures to minimize the use of road salt
- [x] Implemented SWPPPs for all permittee owned or operated maintenance garages, public works yards, transfer stations, and other waste handling facilities
- [x] Updated inventory of all permittee owned facilities as necessary
- [x] O&M programs for all permittee owned facilities have been completed and updated as necessary
- [x] Implemented all maintenance procedures for permittee owned facilities in accordance with O&M programs
- [x] Implemented program for MS4 infrastructure maintenance to reduce the discharge of pollutants
- [ ] Inspected all permittee owned treatment structures (excluding catch basins)

Optional: If you would like to describe progress made on any incomplete requirements listed above, provide any additional information, and/or if any of the above annual requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Bacteria/ Pathogens (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

Public Education and Outreach*

- [x] Annual message was distributed encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- [x] Permittee or its agents disseminated educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time
- [x] Provided information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria

* Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)

Optional: If you would like to describe progress made on any incomplete requirements listed above or provide any additional details, please use the box below:

The Pet Waste pamphlet and factsheet for septic system owners is posted on the City's Stormwater website.

Phosphorus (Combination of Impaired Waters Requirements and TMDL Requirements as Applicable)

Annual Requirements

Public Education and Outreach*

- [x] Distributed an annual message in the spring (April/May) encouraging the proper use and disposal of grass clippings and encouraging the proper use of slow-release and phosphorus-free fertilizers
- [x] Distributed an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate
- [x] Distributed an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter

* Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information)

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

- [x] Increased street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall)

Potential structural BMPs

- [ ] Any structural BMPs already existing or installed in the regulated area by the permittee or its agents was tracked and the phosphorus removal by the BMP was estimated consistent with Attachment 3 to Appendix F. The BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated phosphorus removed in mass per year by the BMP were documented.
  - ○ The BMP information is attached to the email submission
  - ○ The BMP information can be found at the following website:

Optional: If you would like to describe progress made on any incomplete requirements listed above or provide any additional details, please use the box below:

Structural BMPs have been identified and mapped. Due to Covid-19 funding for stormwater permit compliance was delayed and phosphorus calculations are anticipated to be completed in Year 4.

Optional: Use the box below to provide any additional information you would like to share as part of your self-assessment:

As part of the Massachusetts Vulnerability Preparedness Program, Fitchburg has received an Action Grant to design improvements to John Fitch Highway. Improvements include the design of green infrastructure and other stormwater BMP's to improve water quality in the receiving water body (Baker Brook) and reduce flooding, and other roadway work to improve traffic flow and facilitate improved pedestrian access. The City will estimate the phosphorus removal of these BMP's both during design and after they are constructed.

Lawn and Garden Care factsheet and Tips for Creating a Healthy Yard factsheet are posted on the City's Stormwater Webpage.

Due to Covid-19 and City staffing shortages, public education messages were distributed by website only.

The City completed the following for drainage infrastructure repairs, improvements, and maintenance:
- Fixed 10 sinkholes that were broken drain lines
- Installed new swale and culverts in Oak Hill Road
- Rebuilt culverts at Williams Road and McIntire Road
- Cleaned inlets for culverts before heavy rain events
- Rebuilts 40 catch basins
- Repaired one old/damaged paved waterway/catch basin feature and installed 5 new catch basins on Summer Street ahead of a sidewalk/paving project
- Began construction of a roughly $9 million dollar combined sewer separation project to eliminate a total of nearly one mile of combined sewers.
- Separated 18 (est.) combination manholes (drain and sanitary separated by a weir wall).
- Installed a 1000 LF riprap swale to control runoff and prevent erosion along Oak Hill Road and completed various catch basin and cross culvert replacements ahead of a paving project

Part III: Receiving Waters/Impaired Waters/TMDL

Have you made any changes to your lists of receiving waters, outfalls, or impairments since the NOI was submitted?

- ○ Yes
- ○ No

If yes, describe below, including any relevant impairments or TMDLs:

Part IV: Minimum Control Measures

Please fill out all of the metrics below. If applicable, include in the description who completed the task if completed by a third party.

MCM1: Public Education

Number of educational messages completed during this reporting period: 1

Below, report on the educational messages completed during this reporting period. For the measurable goal(s) please describe the method/measures used to assess the overall effectiveness of the educational program.

BMP: Fowl Water Campaign

Message Description and Distribution Method:

CMRSWC and Think Blue Massachusetts held the “Fowl Water” advertisement helps viewers visualize stormwater pollution from motor oil, pet waste, and trash become stormwater pollution.

Targeted Audience: Residents

Responsible Department/Parties: Engineering

Measurable Goal(s):

Impressions on social media. PDF with Fitchburg numbers is attached to the submission.

Message Date(s): May 17th - June 4th, 2021

Message Completed for: Appendix F Requirements ☐ Appendix H Requirements ☐

Was this message different than what was proposed in your NOI? Yes ◉ No ○

If yes, describe why the change was made:

Due to Covid-19 and City staffing shortages, public education messages were distributed by website and electronic methods only.

Add an Educational Message

MCM2: Public Participation

Describe the opportunity provided for public involvement in the development of the Stormwater Management Program (SWMP) during this reporting period:

Consistent with the City's approved NOI, the SWMP was posted to the City web page with the public encouraged to submit comments to DPW Engineering.

Was this opportunity different than what was proposed in your NOI? Yes ○ No ◉

Describe any other public involvement or participation opportunities conducted during this reporting period:

The City conducted a fourth consecutive year of its Rain Barrel Purchase Program. The City's DPW Engineering Division, DPW Wastewater Division, and Conservation Commission partnered with the 'Great American Rain Barrel Company' to facilitate a City-subsidized rain barrel purchase program. In the program's inaugural year, the City sold a total of 98 rain barrels. In the program's second and third year, the City sold a total of 44 rain barrels and 129 rain barrels, respectively. This past year the City sold 128 barrels, with barrels being picked up on June 12, 2021. This program continues to be a key development and networking tool to help grow 'green infrastructure' in the City into other forms that will serve to help attenuate and infiltrate stormwater runoff on private properties.

The City also actively pursued partnerships with several groups on various stormwater topics, including:

-Central MA Regional Stormwater Coalition (CMRSWC): Fitchburg is an active member, with its Civil Engineer sitting on the Steering Committee.

The redesign of John Fitch Highway will employ best practices, including nature-based solutions to reduce flooding (like rain gardens and tree planting) and Complete Streets elements (such as shared use paths and improved crosswalks) within the right of way to improve the Corridor and the city's climate resilience. The current project is developing a preliminary design focused on the roadway's right-of-way. A virtual public meeting was held on June 23rd, 2021 for design review and public feedback. Several public input sessions, an artwork challenge for the kids, and a business focus group has also been held for this project.

The stormwater budget was discussed at City council meetings during this reporting period, and also the need for a sustainable funding source instead of an annual budget appropriation or free cash appropriation.

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Sanitary Sewer Overflows (SSOs)

Check off the box below if the statement is true.

☐ This SSO section is NOT applicable because we DO NOT have sanitary sewer

Below, report on the number of SSOs identified in the MS4 system and removed during this reporting period.

Number of SSOs identified: 12

Number of SSOs removed: 12

MS4 System Mapping

Optional: Provide additional status information regarding your map:

Mapping is updated in an ongoing fashion as IDDE inspections are completed.

Screening of Outfalls/Interconnections

If conducted, please submit any outfall monitoring results from this reporting period. Outfall monitoring results should include the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening parameter results, and results from all analyses. Please also include the updated inventory and ranking of outfalls/interconnections based on monitoring results.

- ○ No outfalls were inspected
- ◉ The outfall screening data is attached to the email submission
- ○ The outfall screening data can be found at the following website:

Attached is the incpection table for inspections conducted in Year 3 period.

Below, report on the number of outfalls/interconnections screened during this reporting period.

Number of outfalls screened: 65

Below, report on the percent of outfalls/interconnections screened to date.

Percent of outfalls screened: 100

Optional: Provide additional information regarding your outfall/interconnection screening:

Due to COVID-19, City budgeting processes were delayed. Adequate funding was not appropriated for stormwater compliance assistance prior to January 2021 and therefore the City was unable to inspect all outfalls prior to June 30, 2021. Funding has been appropriated and the City has completed dry weather inspections of 100% of the MS4 outfalls and interconnections as of the date of this report. Outfall screening information and reprioritization are included for all outfalls inspected to date.

Catchment Investigations

If conducted, please submit all data collected during this reporting period as part of the dry and wet weather investigations. Also include the presence or absence of System Vulnerability Factors for each catchment.

- ○ No catchment investigations were conducted
- ◉ The catchment investigation data is attached to the email submission
- ○ The catchment investigation data can be found at the following website:

Below, report on the number of catchment investigations completed during this reporting period.

Number of catchment investigations completed this reporting period: 5

Below, report on the percent of catchments investigated to date.

Percent of total catchments investigated: 3

Optional: Provide any additional information for clarity regarding the catchment investigations below:

During the reporting period, the City worked with its stormwater consultant Arcadis to continue catchment area investigations. Progress has been made with investigations and supporting documentation can be found in the attached catchment areas. Investigation planning is also ongoing in an additional 5 catchments.

IDDE Progress

If illicit discharges were found, please submit a document describing work conducted over this reporting period, and cumulative to date, including location source; description of the discharge; method of discovery; date of discovery; and date of elimination, mitigation, or enforcement OR planned corrective measures and schedule of removal.

- (•) No illicit discharges were found
- ( ) The illicit discharge removal report is attached to the email submission
- ( ) The illicit discharge removal report can be found at the following website:

Below, report on the number of illicit discharges identified and removed, along with the volume of sewage removed during this reporting period.

Number of illicit discharges identified: 2

Number of illicit discharges removed: 2

Estimated volume of sewage removed: 0 gallons/day

Below, report on the total number of illicit discharges identified and removed to date. At a minimum, report on the number of illicit discharges identified and removed since the effective date of the permit (July 1, 2018).

Total number of illicit discharges identified: 13

Total number of illicit discharges removed: 13

Optional: Provide any additional information for clarity regarding illicit discharges identified, removed, or planned to be removed below:

An illicit connection was identified at 550-552 Oak Hill Road and it was removed by the City. 2. 1 known illicit connection was removed on Fairbanks Street. Approximately 18 combination manholes were separated (drain and sanitary separated by a weir wall). These illicits will be added to the Stormwater Webpage.

Employee Training

Describe the frequency and type of employee training conducted during this reporting period:

IDDE and Good Housekeeping/Pollution Prevention Training were held virtually on June 21, 2021. Several DPW employees and City Department heads attended this training.

MCM4: Construction Site Stormwater Runoff Control

Below, report on the construction site plan reviews, inspections, and enforcement actions completed during this reporting period.

Number of site plan reviews completed: 24

Number of inspections completed: 8

Number of enforcement actions taken: 0

Optional: Enter any additional information relevant to construction site plan reviews, inspections, and enforcement actions:

Remote nature of Planning Board meetings made reviews difficult and site visits/inspections were relatively limited.

MCM5: Post-Construction Stormwater Management in New Development and Redevelopment

As-built Drawings

Below, report on the number of as-built drawings received during this reporting period.

Number of as-built drawings received: 2

Optional: Enter any additional information relevant to the submission of as-built drawings:

Street Design and Parking Lots Report

Describe the status of the street design and parking lots assessment due in year 4 of the permit term, including any planned or completed changes to local regulations and guidelines:

Based on funding appropriated as of July 1, 2021 the reports and inventory work have begun. Creation of street design and parking lot assessments have begun; current rules and regulations for wetlands, planning, zoning, and stormwater management have been reviewed and recommendations have been compiled into a summary table and draft report.

Green Infrastructure Report

Describe the status of the green infrastructure report due in year 4 of the permit term, including the findings and progress towards making the practice allowable:

Based on funding appropriated as of July 1, 2021 the reports and inventory work have begun. Creation of green infrastructure report has begun; current rules and regulations for wetlands, planning, zoning, and stormwater management have been reviewed and recommendations have been compiled into a summary table and draft report.

Retrofit Properties Inventory

Describe the status of the inventory, due in year 4 of the permit term, of permittee-owned properties that could be modified or retrofitted with BMPs to mitigate impervious areas and report on any properties that have been modified or retrofitted:

Based on funding appropriated as of July 1, 2021 the reports and inventory work have begun. Creation of retrofit properties inventory has begun.

MCM6: Good Housekeeping

Catch Basin Cleaning

Below, report on the number of catch basins inspected and cleaned, along with the total volume of material removed from the catch basins during this reporting period.

Number of catch basins inspected: 4,500

Number of catch basins cleaned: 4,500

Total volume or mass of material removed from all catch basins: 20,000 tons

Below, report on the total number of catch basins in the MS4 system.

Total number of catch basins: 7,000

If applicable:

Report on the actions taken if a catch basin sump is more than 50% full during two consecutive routine inspections/cleaning events:

If a catch basin sump is found to be more than 50% full during two consecutive routine inspections/cleanings, the Superintendent of Streets is notified and he or she will re-prioritize the subject area to receive more frequent cleanings.

Street Sweeping

Report on street sweeping completed during this reporting period using one of the three metrics below.

- (●) Number of miles cleaned: 500
- ( ) Volume of material removed: [Select Units]
- ( ) Weight of material removed: 10,000 tons

Stormwater Pollution Prevention Plan (SWPPP)

Below, report on the number of site inspections for facilities that require a SWPPP completed during this reporting period.

Number of site inspections completed: 0

Describe any corrective actions taken at a facility with a SWPPP:

No corrective actions taken. Due to Covid-19 and staffing shortages at the DPW, SWPPP quarterly inspections were not completed this permit year.

Additional Information

Monitoring or Study Results

Results from any other stormwater or receiving water quality monitoring or studies conducted during the reporting period not otherwise mentioned above, where the data is being used to inform permit compliance or permit effectiveness must be attached.

- (•) Not applicable
- ( ) The results from additional reports or studies are attached to the email submission
- ( ) The results from additional reports or studies can be found at the following website(s):

If such monitoring or studies were conducted on your behalf or if monitoring or studies conducted by other entities were reported to you, a brief description of the type of information gathered or received shall be described below:

The City began a hydrologic and hydraulic study to determine the best way to reroute stormwater flows from an undersized drain line that discharges to Baker Brook on Lunenburg Street. The drain line is owned by MassDOT, who has no plans to address the issue.

The City also began a hydrologic and hydraulic study to build on the John Fitch Highway green infrastructure project and determine potential flood mitigation solutions within the upper reaches of the Baker Brook watershed.

Additional Information

Optional: Enter any additional information relevant to your stormwater management program implementation during the reporting period. Include any BMP modifications made by the MS4 if not already discussed above:

COVID-19 Impacts

Optional: If any of the above year 3 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Activities Planned for Next Reporting Period

Please confirm that your SWMP has been, or will be, updated to comply with all applicable permit requirements including but not limited to the year 4 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree ☒

- Develop a report assessing current street design and parking lot guidelines and other local requirements within the municipality that affect the creation of impervious cover
- Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist
- Identify a minimum of 5 permittee-owned properties that could potentially be modified or retrofitted with BMPs to reduce impervious areas

Annual Requirements

- Annual report submitted and available to the public
- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- Annual training to employees involved in IDDE program
- Update inventory of all known locations where SSOs have discharged to the MS4
- Continue public education and outreach program
- Update outfall and interconnection inventory and priority ranking and include data collected in connection with the dry weather screening and other relevant inspections conducted
- Implement IDDE program
- Review site plans of construction sites as part of the construction stormwater runoff control program
- Conduct site inspection of construction sites as necessary
- Inspect and maintain stormwater treatment structures
- Log catch basins cleaned or inspected
- Sweep all curbed streets at least annually
- Continue investigations of catchments associated with Problem Outfalls
- Implemented SWPPPs for all permittee owned or operated maintenance garages, public works yards, transfer stations, and other waste handling facilities
- Review inventory of all permittee owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment; update if necessary
- Review O&M programs for all permittee owned facilities; update if necessary
- Implement all maintenance procedures for permittee owned facilities in accordance with O&M programs
- Implement program for MS4 infrastructure maintenance to reduce the discharge of pollutants
- Enclose all road salt storage piles or facilities and implemented winter road maintenance procedures to minimize the use of road salt
- Review as-built drawings for new and redevelopment to ensure compliance with post construction

bylaws, regulations, or regulatory mechanism consistent with permit requirements
- Inspect all permittee owned treatment structures (excluding catch basins)

Provide any additional details on activities planned for permit year 4 below:

Part V: Certification of Small MS4 Annual Report 2021

40 CFR 144.32(d) 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: Stephen L. D'Natale Title: Mayor

Signature: Date: 9/28/2021

[Signatory may be a duly authorized representative]

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

Annual Report Submission

Please submit the form electronically via email to both EPA and MassDEP by clicking on one of the links below or using the email addresses listed below. Please ensure that all required attachments are included in the email and not attached to this PDF.

EPA: stormwater.reports@epa.gov MassDEP: laura.schifman@mass.gov

Paper Signature:

If you did not sign electronically above, you can print the signature page by clicking the button below.

Optional: If you did not sign electronically above, you may lock the form by clicking the "Lock Form" button below which will prompt you to save the locked version of the form. Save this locked version under a new file name.

City of Fitchburg, Massachusetts
Massachusetts MS4 General Permit
Year 3 Annual Report
Reporting Period: July 1, 2020 – June 30, 2021

Appendix A – Public Education Documents

ARCADIS

Central Massachusetts Regional Stormwater Coalition

Fiscal Year 2021 Educational Advertisement Campaign Report

On behalf of the members of the Central Massachusetts Regional Stormwater Coalition, Think Blue Massachusetts ran an educational advertising campaign from May 17th to June 4th, 2021. The “Fowl Water” advertisement helps viewers visualize stormwater pollution from motor oil, pet waste, and trash become stormwater pollution.

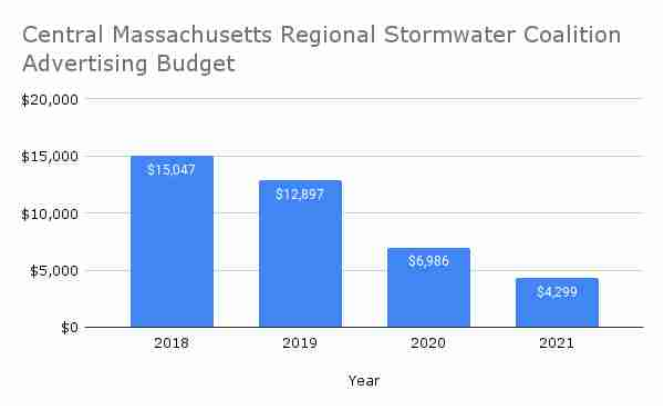
We selected Facebook and Instagram sponsored video and YouTube pre-roll advertisements because these channels offer superior “bang for the buck” to cable and broadcast television. They provide granular reporting that helps demonstrate what was accomplished.

This effort helps coalition members meet their requirements to “document in each annual report the messages for each audience; the method of distribution; the measures/methods used to assess the effectiveness of the messages, and the method/measures used to assess the overall effectiveness of the education program.”

View the ad at http://bit.ly/tbm-fowl-water

Advertising Budget

Our advertising budget for the campaign worked out to just less than 1 cent per resident. Campaign budgets have been falling year over year:



Post Campaign Survey Highlights

At the close of the advertising campaign, we surveyed Massachusetts residents in the areas where the campaign ran:

- 16% of residents surveyed recalled seeing the ads, down from 17% in 2020, but within the survey margin of error.
- Those who recall the ad are more likely to recognize that stormwater goes directly to local waterways (50%) than those who do not recall the ad (36%).
- Those who recall the ad are more likely to describe stormwater has having “major” or “some” impact on waterways (53%) than those who do not recall the ad (27%).

Full survey results are available at www.thinkbluemassachusetts.org

FY 2021 Campaign Performance

Facebook and Google provided us with aggregate information for the region served by the stormwater coalition. We have allocated the impressions among each city on a proportional basis, using U.S. Census estimates of the population of each municipality.

Your municipality can use these numbers as your measurable goal for MCM1 in your Year 3 annual report.

Town	Facebook/Instagram Impressions	YouTube Ad Impressions	Spanish Language Impressions	Total
Ashland	7,323	18,194	3,096	28,613
Auburn	6,683	16,603	2,826	26,112
Ayer	1906	4734	806	7445
Charlton	5,654	14,049	2,391	22,094
Dudley	4,872	12,105	2,060	19,037
Fitchburg	16,877	41,931	7,136	65,944
Framingham	30,187	75,000	12,764	117,951
Grafton	7,796	19,370	3,296	30,462
Holden	7,911	19,655	3,345	30,911
Hopedale	1402	3484	593	5480
Hopkinton	7,542	18,738	3,189	29,469
Leicester	4,704	11,686	1,989	18,379
Lunenburg	4,829	11,997	2,042	18,868
Marlborough	16,441	40,847	6,952	64,240
Millbury	5,724	14,222	2,420	22,366
Natick	14,956	37,159	6,324	58,439
Northborough	2,551	6,338	1,079	9,968
Northbridge	6,907	17,161	2,921	26,989
Oxford	2,519	6,260	1,065	9,844
Palmer	5,081	12,625	2,149	19,855
Paxton	2,015	5,006	852	7,873
Rutland	3,652	9,073	1,544	14,269
Shrewsbury	15,676	38,948	6,628	61,252
Southbridge	6,990	17,366	2,955	27,311
Southborough	4,198	10,430	1,775	16,403
Spencer	2,353	5,846	995	9,194
Sterling	3,381	8,400	1,430	13,211
Sturbridge	3,980	9,887	1,683	15,550
Uxbridge	5,819	14,457	2,460	22,736
West Bolyston	3,391	8,426	1,434	13,251
Westborough	7,922	19,682	3,350	30,954
	221,243	549,678	93,547	864,468

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Appendix B –Outfall Inspections and Re-ranking

ARCADIS

City of Fitchburg, Massachusetts
NPDES MS4 Compliance - Year 3 Annual Report
Illicit Discharge Detection and Elimination (IDDE) Program
Dry Weather Outfall Inspections (Reporting Period)

Rank Sorting Number	Outfall ID	Outfall Re-ranking	Outfall Located	Screening Status	Outfall Type	Inspection Date	Re-inspection Date	Weather	Temperature (°F)	Last Rain Event (Hours)	Rain Accumulation (in)	Closest Address / Location	Receiving Water	Contributing Land Use	Outfall Shape	Outfall Material	Outfall Dimensions (in)	Flow	Color	Odor	Floatables	Deposits/Stains	Clarity	Standing Water	Location of Standing Water	pH	Sample Temperature (°F)	Salinity (ppt)	Spec. Cond (mS/cm)	Ammonia (ppm)	Surfactants (ppm)	Total Chlorine (ppm)	E.Coli (Col/100mL)
4	C3105	Low Priority	Not Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	In the wood west of Appleton Circle on hillside	North Nashua River MA81-01	Residential	Circular/Pipe	High-Density Polyethylene	18	None-Dry		None													
4	C338	Low Priority	Not Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	Across from 91 Wallace Rd North West of Detention Pond	North Nashua River MA81-02	Residential	Circular/Pipe	CMP	12	Running	Colorless	None	None	None	Clear	No		7.33	68.3	0.2	0.399	0.10	0.15	0	23
4	C361	Low Priority	Located	Complete		July 7, 2020	November 6, 2020	Sunny	70	48	0.35	Westminster St Bridge over Phillips Brook	Phillips Brook	Commercial	Circular/Pipe	RCP	12	Running	Colorless	None	None	None	Clear	No		6.28	60.1	0.2	0.662	0.00	0.2	0	0
4	C362	Low Priority	Located	Complete		July 7, 2020	June 24, 2021	Sunny	75	24	0.13	Westminster St Bridge over Phillips Brook	Phillips Brook	Commercial	Circular/Pipe	RCP	24	Dry														
4	C363	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	Westminster St Bridge over Phillips Brook	Phillips Brook	Commercial	Circular/Pipe	RCP	12	None-Dry		None													
4	C375	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	Behind 179 Westminister St	North Nashua River MA81-01	Commercial	Circular/Pipe	VC	18	None-Dry		None													
4	C420	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	In brook behind 420 John Fitch Highway (Enterprise Bank)	Baker Brook	Commercial	Circular/Pipe	RCP	18	None-Dry		None													
4	C421	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	In brook behind 406 John Fitch Highway (Aarons)	Baker Brook	Commercial	Circular/Pipe	RCP	18	None-Dry		None													
4	C422	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	In brook behind 380 John Fitch Highway (Urgent Care)	Baker Brook	Commercial	Circular/Pipe	RCP	12	None-Dry		None													
4	C470	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	Across from 455 Milk St (Likely originates from manhole @ intersection of Hutchinson and Seneca)	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	DI	12	None-Wet		None													
4	C237	Low Priority	Located	Complete	MS4	July 8, 2020		Cloudy	72	72	0.35	In Detention Pond Behind 12 Macintosh Lane North End	Unnamed Trib to Townsend Road Pond		Circular/Pipe	RCP	6	None-Dry		None	None	Dirt/Sediment Buildup											
4	C239	Low Priority	Located	Complete	MS4	July 8, 2020	November 4, 2020	Cloudy	72	72	0.35	In Detention Pond Behind 12 Macintosh Lane South End	Unnamed Trib to Townsend Road Pond	Residential	Circular/Pipe	RCP	14	None-Dry		None	None	None											
4	C240	Low Priority	Located	Complete	Private	July 8, 2020		Cloudy	72	72	0.35	Behind 3 Macintosh Lane	Unnamed Trib to Townsend Road Pond	Residential	Circular/Pipe	HDPE	6	None-Dry		None													
4	C241	Low Priority	Located	Complete	MS4	July 8, 2020	November 4, 2020	Cloudy	72	72	0.35	In Detention Pond Behind 122 Macintosh Lane South End	Unnamed Trib to Townsend Road Pond	Residential	Circular/Pipe	RCP (fluted)	22-24	None-Wet		None	None	None											
4	C349	Low Priority	Located	Complete		July 8, 2020						Detention Pond Behind 208 Bishop Rd	North Nashua River MA81-01		Circular/Pipe	Stone	36 x 36	None-Dry		None	None	None											
4	C440	Low Priority	Located	Complete		July 8, 2020		Cloudy	72	72	0.35	Downstream of C438, on downstream face of Dam / Arden Mills Way	North Nashua River MA81-02		Box Culvert	RCP	36 x 36															
4	C460	Low Priority	Located	Complete	MS4	July 8, 2020		Cloudy	72	72	0.35	Between 106 and 132 Canton St	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	VC	8	None-Wet		None													
3	C601	Low Priority	Located	Complete	MS4	July 8, 2020		Cloudy	72	72	0.35	Stony Creek/ Next to 234 Wanoosnoc Rd	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	HDPE	8	None-Dry		None	None	None		No										
4	C613	Low Priority	Not Located	Complete		July 8, 2020	August 3, 2021	Sunny	75	48	0.04	Airport Blvd at Crawford St	Falulah Brook	Commercial	Circular/Pipe	Reinforced Conc	16	None-Dry						No									
4	Unmarked-4	Low Priority	Located	Complete	Private	July 8, 2020		Cloudy	72	72	0.35	Detention Pond Behind 208 Bishop Rd	North Nashua River MA81-02	Residential	Circular/Pipe	PVC	4	None-Dry		None													
4	C243	Excluded	Located	Complete	Culvert	July 21, 2020		Sunny	89	72	0.15	Under Driveway of 19 New West Townsend Rd	Unnamed Trib to Townsend Road Pond	Residential	Circular/Pipe	Reinforced Concrete Pipe	16	None-Dry															
4	C102	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	Behind 939 Rindge Road	Falulah Brook	Residential	Circular/Pipe	Reinforced Concrete Pipe	12	None-Dry		None	None	None											
4	C103	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	In woods behind pump building on Rindge Road	Falulah Brook			Ductile Iron		None-Dry		None	None	None											
4	C104	Low Priority	Located	Complete		July 30, 2020		Sunny	73	144	0.2	40ft upstream of C103																					
4	C108	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	South side of Stoneybrook Rd next to 3 36" R.C. culverts		Residential	Circular/Pipe	Reinforced Concrete Pipe (fluted)	16	None-Dry		None	Leaves	Dirt/Sediment Buildup											
4	C109	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	Behind pump station between 101 and 103 Stoneybrook Rd		Residential	Circular/Pipe	Reinforced Concrete Pipe (fluted)	30	None-Dry		None	none	Dirt/Sediment Buildup											
4	C110	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	In woods between 171 and 183 Stoneybrook Rd		Residential	Circular/Pipe	Reinforced Concrete Pipe	30	None-Dry		None	None	None											
4	C111	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	Intersection of Nijal Ct and Rindge Rd SE corner in side slope		Residential	Circular/Pipe	HDPE	24	None-Dry		None	None	None											
4	C112	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	Detention Pond at Nijal Ct		Residential	Circular/Pipe	HDPE	16	None-Dry		None	None	None											
4	C107	Low Priority	Located	Complete	MS4	August 11, 2020		Sunny	90	24	0.03	15ft from catch basin on east side of Rindge Rd between 1107 and 11633 Rindge Rd		Residential	Circular/Pipe	Reinforced Concrete Pipe	12	Running	Colorless	None	Algae	None	Clear	No		6.89	72.2	0	109.5	0.00	0.05	0	46
4	C113	Low Priority	Located	Complete	MS4	August 11, 2020		Sunny	90	24	0.03	Detention Pond at Nijal Ct		Residential	Circular/Pipe	HDPE	16	None-Wet	Colorless	None	None	None	Clear	Yes	Inside and Outside Outfall	6.36	80.3	0.3	602	0.10	0.2	0.05	3
4	C211	Low Priority	Located	Complete	MS4	August 11, 2020		Sunny	90	24	0.03	Inside culvert near intersection of Richardson Rd and Richardson Dr, inside Manhole	Falulah Brook MA81-63	Residential	Circular/Pipe	VC	12	None-Dry		None	Leaves	None											
4	C3129	Low Priority	Not Located	Complete	MS4	August 21, 2020		Sunny	86	24	0.03	Behind 249 Kimball St (covered in Dense Bamboo)	North Nashua River MA81-02		Circular/Pipe	VC	15	None-Dry		None	None	None											
3	C325	Low Priority	Located	Complete	MS4	August 21, 2020		Sunny	86	24	0.03	Kimball St bridge abutment	North Nashua River MA81-02	Commercial	Circular/Pipe	Reinforced Conc	24	Running		None	None	None		No		7.37	73.4	0	0.1179	0.05	0.15	0.5	0
3	C391	Low Priority	Located	Complete	MS4	August 21, 2020		Sunny	86	24	0.03	NE Corner of SW detention pond at Victoria Lane and Ropers Rd	BMP/Sawmill Pond	Residential	Fluted	Reinforced Conc	24	None-Dry		None	None	Sediment		Yes	Inside and Outside Outfall								
4	C394	Low Priority	Not Located	Complete	MS4	August 21, 2020		Sunny	86	24	0.03	East side of North Detention Pond at intersection of Victoria Lane and Ropers Rd	BMP/Sawmill Pond		Circular/Pipe	PVC	6	Trickle	Faint Yellow	None	None	None	Clear	No		7.28	73.6	0.2	0.4	0.10	0.05	0.5	11
3	C508	Low Priority	Located	Complete	MS4	August 21, 2020		Sunny	86	24	0.03	Bray Ave South Detention Pond	Sawmill Pond	Residential	Circular/Pipe	HDPE	15	None-Dry		None	None	None		No									
4	C345	Low Priority	Located	Complete		August 26, 2020	November 4, 2020	Sunny	76	48	0.04	South bank of Nashua River across from East side of 644 River St (Far behind 389 Fairmount St)	North Nashua River MA81-02		Circular/Pipe	RCP	12	None-Wet		None	None	None		Yes	Inside Outfall								
4	C353	Low Priority	Located	Complete	MS4	November 4, 2020						Across from 753 River St	North Nashua River MA81-01		Circular/Pipe	DI	12	None-Dry		None	None													
4	C365	Low Priority	located	Complete	MS4	November 5, 2020						Nextr to 62 Stickney Road	Unnamed Trib to Phillips Brook	Residential	Circular/Pipe			Trickle	Clear	None	None	None	Clear	No		7.23	52.3	0.3	723	0.00	0.3	0	15
4	C367	Low Priority	Located	Complete	MS4	November 5, 2020						Next to 535 Ashburnham Street	Unnamed Trib to Phillips Brook	Residential	Circular/Pipe			Trickle	Clear	None	None	None	Clear	No		6.41	52.1	0.2	527	0.10	0.2	0	16
4	C213	High Priority	Located	Complete	MS4	November 6, 2020						Fisher Road at Pearl Hill Road intersection	Unnamed Trib to Falulah Brook MA81-63	Residential	Circular/Pipe	VC	12	Running	Clear	None	none	None	Clear	No		7.38	59.5	0	0.1656	0.05	0.3	0.15	0
4	C332	Low Priority	Located	Complete		November 6, 2020		Cloudy	66	96	0.1	Underneath Oak Hill Rd Bridge North Side	North Nashua River MA81-02	Commercial	Circular/Pipe	VC	8	Trickle	Clear	None	None	None	Clear	No		6.31	61	0.3	603	0.00	0.2	0	0
4	C301	Low Priority	Located	Complete	MS4	January 19, 2021						Under River st Bridge at Intersection with Main St (by KC's Pub) North Side	North Nashua River MA81-02			Stone	24 x 36	None-Dry		None	none	None											
4	C302	Low Priority	Located	Complete	MS4	January 19, 2021						Under River st Bridge at Intersection with Main St (by KC's Pub) North Side	North Nashua River MA81-02		Circular/Pipe	DI	18	None-Dry		None	none	None											
4	C105	Low Priority	Located	Complete		June 24, 2021		Sunny	75	24	0.13	Behind Water Storage Tanks on Ringe Road																					
4	C106	Low Priority	Located	Complete		June 24, 2021		Sunny	75	24	0.13	Behind Water Storage Tanks on Ringe Road																					
4	C304	Low Priority	Not Located	Complete								KC' Pub, Upstream of C303 North Side of River	North Nashua River MA81-02	Commercial	Circular/Pipe	VC	12																
4	C342	Low Priority	Not Located	Complete								Upstream of brook that enters Nashua next to Railroad bridge at Southern intersection of Wallace and River	North Nashua River MA81-02		Circular/Pipe	RCP	12																
4	C431	Low Priority	Located	Complete	MS4							In Swale at end of Ray Ave and 100 John Fitch Highway						None-Wet	Clear	None			Yes	Inside Outfall									
4	C449	Low Priority	Located	Complete	Upland							CHANGE LOCATION	North Nashua River MA81-02		Circular/Pipe	RCP	6			None													
4	C458	Low Priority		Complete								Riverfront Park off Boulder Dr, within bridge abutment on upstream West side	North Nashua River MA81-02		Circular/Pipe	VC	6			None													
4	C459	Excluded	Not Located	Complete	MS4							Riverfront Park off Boulder Dr. Couple hundred ft East of steel / wood bridge	North Nashua River MA81-02	Commercial	Circular/Pipe	RCP	48																
3	C543	Low Priority	Located	Complete								Just Outside Detention Pond Behind 32 Goodfellow Dr	North Nashua River MA81-02	Residential	Circular/Pipe	HDPE	24	None-Wet	Colorless	None	None	None	Clear	Yes	Inside Outfall	6.93	62.6	0.1	0.321	0.05	0.15	0	12.8
3	C203	Low Priority	Not Located	Complete	MS4	August 6, 2019	November 6, 2020	Sunny	80	72	Trace	Detention pond behind 513 Richardson Rd in SW corner	Unnamed Trib to Greene's Pond	Residential	Circular/Pipe	HDPE	12	None-Wet		None	None	Algae											
3	C208	Low Priority	Located Not Accessible	Complete	MS4	July 9, 2019	September 25, 2020	Sunny	80	72	1.37	Greens Pond Bridge, Ashbystate Rd, NW side	Falulah Brook	Residential	Circular/Pipe	Reinforced Conc	12							No									
3	C218	High Priority	Located	Complete	MS4	August 6, 2019	July 21, 2020	Sunny	80	72	Trace	John Fitch Highway NE side of bridge between Will Thompson way and Pearl Hill Rd	Falulah Brook	Residential	Circular/Pipe	Reinforced Concrete Pipe	12	None-Wet		None	None			No									
3	C229	Low Priority	Located	Complete	MS4	August 7, 2019	August 25, 2020	Partly Cloudy	70	96	Trace	Intersection of Blossom St. and Mt.Vernon St.	Falulah Brook MA81-63	Residential	Circular/Pipe	High-Density Polyethylene	12	None-Wet		None	None	None		No									
4	C3127	Low Priority	Located	Complete	MS4	June 16, 2020	June 24, 2021	Sunny	75	24	0.13	Quarry Lane Detention Pond 2 (Farthest from the Street)	Sand Brook	Residential	Circular/Pipe	HDPE	24	None-Wet		None													
4	C3128	Low Priority	Located	Complete	MS4	June 16, 2020	June 24, 2021	Sunny	75	24	0.13	In the yard of 96 Wall St	Sand Brook	Residential	Circular/Pipe	CMP	12	None-Wet		None													
3	C315	Low Priority	Located	Complete	MS4	July 30, 2019	June 24, 2021	Sunny	75	24	0.13	In Nashua River near abandoned Pedestrian bridge behind 1428 Main St	North Nashua River MA81-02	Residential	Circular/Pipe	Cast Iron	12	Dry		None	None	None		Yes	Inside and Outside Outfall								
3	C316	Low Priority	Located	Complete	MS4	July 30, 2019	June 24, 2021	Sunny	75	24	0.13	In Nashua River near abandoned Pedestrian bridge behind 1428 Main St	North Nashua River MA81-02	Commercial	Circular/Pipe	Cast Iron	12	Dry						Yes	Inside and Outside Outfall								
3	C333	High Priority	Located	Complete	MS4	July 31, 2019	January 25, 2021	Partly Cloudy	80	48	0.01	Underneath Oak Hill Rd Bridge South Side (River St. @ Oak Hill Rd)	North Nashua River MA81-02	Commercial	Circular/Pipe	Reinforced Conc	48	Trickle	Clear	None	None	None	Clear	No		7.09	37.2	0.2	546	0.00	0.8	0	103442
4	C341	Low Priority	Located	Complete	MS4	June 11, 2020	January 25, 2021	Cloudy	66	96	0.1	Straight down towards river from hole in the wall, Near Murphys Auto	North Nashua River MA81-02		Circular/Pipe	Stone	24 x 24	Running	Colorless	None	None	None	Clear	No		6.62	39.5	0.3	671	0.00	0.2	0	1
3	C376	Low Priority	Located	Complete		August 5, 2019	June 24, 2021	Sunny	75	24	0.13	In the wood between 46 and 45 Hartland Ave (past the end of the street)	North Nashua River MA81-01	Residential	Circular/Pipe	Polyvinyl Chloride	12																
4	C395	Excluded	Located	Complete	Culvert	June 17, 2020	October 22, 2020	Partly Cloudy	68	120	0.26	North Side of North Detention Pond at intersection of Victoria Lane and Ropers Rd	BMP/Sawmill Pond		Circular/Pipe		12															

City of Fitchburg, Massachusetts
NPDES MS4 Compliance - Year 3 Annual Report
Illicit Discharge Detection and Elimination (IDDE) Program
Dry Weather Outfall Inspections (Reporting Period)

Rank Sorting Number	Outfall ID	Outfall Re-ranking	Outfall Located	Screening Status	Outfall Type	Inspection Date	Re-Inspection Date	Weather	Temperature (°F)	Last Rain Event (Hours)	Rain Accumulation (in)	Closest Address / Location	Receiving Water	Contributing Land Use	Outfall Shape	Outfall Material	Outfall Dimensions (in)	Flow	Color	Odor	Floatables	Deposits/Stains	Clarity	Standing Water	Location of Standing Water	pH	Sample Temperature (°F)	Salinity (ppt)	Spec. Cond (mS/cm)	Ammonia (ppm)	Surfactants (ppm)	Total Chlorine (ppm)	E.Coli (Col/100mL)
3	C416	Low Priority	Located	Complete	MS4	July 2, 2019	January 25, 2021	Sunny/Clear	71	48	0.16	In brook on North Side of Parkinglot at John Fitch Plaza	Falulah Brook	Commercial	Circular/Pipe	Reinforced Conc	18	None-Wet	Colorless	None	None	None	Clear	Yes	Inside and Outside Outfall	6.83	43	0.4	0.776	0.00	0.35	0	31.45
3	C417	Low Priority	Located	Complete		July 2, 2019	June 24, 2021	Sunny/Clear	75	24	0.13	In brook on North Side of Parkinglot at John Fitch Plaza	Falulah Brook	Commercial	Circular/Pipe	Reinforced Conc	12	Dry						No									
4	C443	Low Priority	Not Located	Complete		June 11, 2020	November 6, 2020	Cloudy	66	96	0.1	In Nashua River Upstream of C444, Downstream of Rail Road Bridge	North Nashua River MA81-02	Commercial	Circular/Pipe	RCP	72	None-Dry		None	None	None											
4	C444	Problem	Not Located	Complete	MS4	June 11, 2020	November 6, 2020	Cloudy	66	96	0.1	In Nashua River Upstream of C444, Downstream of Rail Road Bridge	North Nashua River MA81-02	Commercial	Circular/Pipe			Running	Colorless	None	none	None	Clear	No		7.24	62.1	0.3	0.723	2.15	0.4	0	8,088
3	C476	Low Priority	Located	Complete	MS4	July 26, 2019	November 10, 2020	Sunny	83	48	Trace	Behind Rollstone Bank & Trust; Across from DPW Parking Lot	North Nashua River MA81-02	Commercial	Circular/Pipe	PVC	12	None-Dry		None												
4	C516	Low Priority	Located	Complete	MS4	June 16, 2020	June 24, 2021	Sunny	75	24	0.13	Between 180 and 160 Authority Dr	Wymans Brook	Commercial	Circular/Pipe	RCP	30	None-Wet	Orange					Yes	Inside and Outside Outfall								

City of Fitchburg, Massachusetts
NPDES MS4 Compliance - Year 3 Annual Report
Illicit Discharge Detection and Elimination (IDDE) Program
Outfall and Interconnection Re-ranking

Rank Sorting Number	Outfall ID	Outfall Re-ranking	Outfall Located	Screening Status	Outfall Type	Inspection Date	Re-inspection Date	Weather	Temperature (°F)	Last Rain Event (Hours)	Rain Accumulation (in)	Closest Address / Location	Receiving Water	Contributing Land Use	Outfall Shape	Outfall Material	Outfall Dimensions (in)	Flow	Color	Odor	Floatables	Deposits/Stains	Clarity	Standing Water	Location of Standing Water	pH	Sample Temperature (°F)	Salinity (ppt)	Spec. Cond (mS/cm)	Ammonia (ppm)	Surfactants (ppm)	Total Chlorine (ppm)	E.Coli (Col/100mL)
3	C101	Low Priority	Located	Complete	MS4	July 10, 2019		Sunny	88	96	1.37	833 Rindge Road	Falulah Brook	Residential	Circular/Pipe	Reinforced Conc	12	None-Dry		None	None	None		No									
4	C102	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	Behind 939 Rindge Road	Falulah Brook	Residential	Circular/Pipe	Reinforced Concrete Pipe	12	None-Dry		None	None	None											
4	C103	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	In woods behind pump building on Rindge Road	Falulah Brook			Ductile Iron		None-Dry		None	None	None											
4	C104	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	40ft upstream of C103																					
4	C105	Low Priority	Located	Complete	MS4	June 24, 2021		Sunny	75	24	0.13	Behind Water Storage Tanks on Ringe Road																					
4	C106	Low Priority	Located	Complete	MS4	June 24, 2021		Sunny	75	24	0.13	Behind Water Storage Tanks on Ringe Road																					
4	C107	Low Priority	Located	Complete	MS4	August 11, 2020		Sunny	90	24	0.03	15ft from catch basin on east side of Rindge Rd between 1107 and 11633 Rindge Rd		Residential	Circular/Pipe	Reinforced Concrete Pipe	12	Running	Colorless	None	Algae	None	Clear	No		6.89	72.2	0	109.5	0.00	0.05	0	46
4	C108	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	South side of Stoneybrook Rd next to 3 36" R.C. culverts		Residential	Circular/Pipe	Reinforced Concrete Pipe (fluted)	16	None-Dry		None	Leaves	Dirt/Sediment Buildup											
4	C109	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	Behind pump station between 101 and 103 Stoneybrook Rd		Residential	Circular/Pipe	Reinforced Concrete Pipe (fluted)	30	None-Dry		None	none	Dirt/Sediment Buildup											
4	C110	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	In woods between 171 and 183 Stoneybrook Rd		Residential	Circular/Pipe	Reinforced Concrete Pipe	30	None-Dry		None	None	None											
4	C111	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	Intersection of Nijal Ct and Rindge Rd SE corner in side slope		Residential	Circular/Pipe	HDPE	24	None-Dry		None	None	None											
4	C112	Low Priority	Located	Complete	MS4	July 30, 2020		Sunny	73	144	0.2	Detention Pond at Nijal Ct		Residential	Circular/Pipe	HDPE	16	None-Dry		None	None	None											
4	C113	Low Priority	Located	Complete	MS4	August 11, 2020		Sunny	90	24	0.03	Detention Pond at Nijal Ct		Residential	Circular/Pipe	HDPE	16	None-Wet	Colorless	None	None	None	Clear	Yes	Inside and Outside Outfall	6.36	80.3	0.3	602	0.10	0.2	0.05	3
3	C201	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	75	72	Trace	NW Corner of detention pond behind 513 Richardson Rd	Unnamed Trib to Greene's Pond	Residential	Circular/Pipe	High-Density Polyethylene	12	None-Wet		None	None	None		Yes	Inside and Outside Outfall								
3	C202	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	75	72	Trace	NE Corner of detention pond behind 513 Richardson Rd	Unnamed Trib to Greene's Pond	Residential	Circular/Pipe	HDPE	24	None-Wet		None	None	Red/Orange Sediment		Yes	Inside Outfall								
3	C203	Low Priority	Not Located	Complete	MS4	August 6, 2019	November 6, 2020	Sunny	80	72	Trace	Detention pond behind 513 Richardson Rd in SW corner	Unnamed Trib to Greene's Pond	Residential	Circular/Pipe	HDPE	12	None-Wet		None	None	Algae											
3	C204	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	80	72	Trace	Scott Rd; Sima Park	Unnamed Trib to Falulah Brook	Residential	Circular/Pipe	Reinforced Conc	12	None-Dry		None				No									
3	C205	Low Priority	Located	Complete	MS4	July 10, 2019		Sunny	88	96	1.37	In woods behind 709 and 697 Rindge Rd	Falulah Brook	Residential	Circular/Pipe	Reinforced Conc	24	None-Wet		None	None	None		Yes	Inside Outfall								
3	C206	Low Priority	Located	Complete	MS4	August 12, 2019		Sunny	85	48	Trace	Greens Pond	Greene's Pond/ Falulah Brook MA81-63	Open Space	Circular/Pipe	Reinforced Conc	24	None-Dry		None	None	None	Clear	Yes	Inside and Outside Outfall								
3	C208	Low Priority	Located Not Accessible	Complete	MS4	July 9, 2019	September 25, 2020	Sunny	80	72	1.37	Greens Pond Bridge, Ashbystate Rd, NW side	Falulah Brook	Residential	Circular/Pipe	Reinforced Conc	12							No									
3	C209	Low Priority	Located	Complete	MS4	August 9, 2019		Sunny	80	24	0.38	Greens Pond Bridge, Ashbystate Rd, NE side	Falulah Brook	Residential	Circular/Pipe	Corr. Metal	12	None-Dry		None	None	Rust		No									
3	C210	Low Priority	Located	Complete	MS4	July 2, 2019		Sunny	71	48	0.16	Fisher Rd Bridge SW side, easily visable	Falulah Brook	Open Space	Circular/Pipe	PVC	12	None-Dry		None	None	None		No									
4	C211	Low Priority	Located	Complete	MS4	August 11, 2020		Sunny	90	24	0.03	Inside culvert near intersection of Richardson Rd and Richardson Dr, inside Manhole	Falulah Brook MA81-63	Residential	Circular/Pipe	VC	12	None-Dry		None	Leaves	None											
3	C212	Low Priority	Located	Complete	MS4	June 9, 2020		Partly Cloudy	66	24	Trace	Inside culvert near intersection of Richardson Rd and Richardson Dr, upstream of Manhole	Falulah Brook MA81-63		Circular/Pipe	VC	12	None-Wet		None	None	None		No									
4	C213	High Priority	Located	Complete	MS4	November 6, 2020						Fisher Road at Pearl Hill Road intersection	Unnamed Trib to Falulah Brook MA81-63	Residential	Circular/Pipe	VC	12	Running	Clear	None	none	None	Clear	No		7.38	59.5	0	0.1656	0.05	0.3	0.15	0
3	C214	Low Priority	Located	Complete	MS4	June 9, 2020		Partly Cloudy	66	24	Trace	Behind 205 and 221 Will Thompson Way	Unnamed Trib to Falulah Brook MA81-63		Circular/Pipe	RCP	24	None-Wet		None	None	None		Yes	Inside and Outside Outfall								
4	C216	Low Priority	Located	Complete	Private	June 9, 2020		Cloudy	66	24	Trace	Corner of John Fitch and Will Thompson Way	Unnamed Trib to Falulah Brook MA81-63	Residential	Circular/Pipe	PVC	6	None-Dry		None	None	None											
2	C217	High Priority	Located	Complete	MS4	August 6, 2019		Sunny	80	72	Trace	John Fitch Highway, 100ft East of intersection with Will Thompson Way	Unnamed Trib to Falulah Brook MA81-63	Residential	Circular/Pipe	Reinforced Conc	12	None-Dry	White	None	None	Milky	Yes	Outside Outfall	7.53	65.66	0.3	0.6664	0.00	0.25	0.05	
3	C218	High Priority	Located	Complete	MS4	August 6, 2019	July 21, 2020	Sunny	80	72	Trace	John Fitch Highway NE side of bridge between Will Thompson way and Pearl Hill Rd	Falulah Brook	Residential	Circular/Pipe	Reinforced Concrete Pipe	12	None-Wet		None	None			No									
3	C219	Low Priority	Located	Complete	MS4	July 8, 2019		Sunny	75	48	1.37	North Side underneath Pearl Hill Rd Bridge	Falulah Brook	Fitchburg State	Circular/Pipe	Clay	24	Running	Colorless	None	None	Corrosion	Clear	No		7.69	65.3	0.2	0.4591	0.00	0.2	0	80
1	C220	High Priority	Located	Complete	MS4	July 8, 2019		Sunny	75	48	1.37	South side underneath Pearl Hill Rd Bridge	Falulah Brook	Fitchburg State	Circular/Pipe	Reinforced Conc	24	Running	Colorless	None	None	Rust	Clear	No		7.41	65.12	0.3	0.6664	0.20	0.2	0	12,000
3	C222	Low Priority	Located	Complete	MS4	August 7, 2019		Partly Cloudy	70	96	Trace	On hillside in fron of Burbank Hospital, near top of hill	Falulah Brook MA81-63	Commercial	Circular/Pipe	Reinforced Concrete Pipe	18	None-Dry		None				No									
3	C223	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	80	72	Trace	John Fitch Highway SE of La Bella Pizza on SE corner of Bridge	Falulah Brook MA81-63	Commercial	Circular/Pipe	Reinforced Concrete Pipe	48	Trickle	Colorless	None	None	None	Clear	No		7.84	65.12	0.3	0.6664	0.05	0.25	0	20
3	C224	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	80	72	Trace	John Fitch @ Civic center	Falulah Brook MA81-63	Residential	Circular/Pipe	Polyvinyl Chloride	6	None-Dry		None	None	None		No									
3	C225	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	80	72	Trace	John Fitch@civic center	Falulah Brook MA81-63	Commercial	Circular/Pipe	Polyvinyl Chloride	15	None-Dry		None	None	None		No									
3	C227	Low Priority	Located	Complete	MS4	August 6, 2019		Partly Cloudy	80	72	Trace	Coolidge @ oakwood	Falulah Brook	Coolidge Park	Circular/Pipe	High-Density Polyethylene	12	None-Dry		None	None	None		No									
3	C228	Low Priority	Located	Complete	MS4	August 6, 2019		Partly Cloudy	80	72	Trace	Coolidge @ oakwood	Falulah Brook	Coolidge Park	Circular/Pipe	High-Density Polyethylene	12	None-Dry		None	None	None		No									
3	C229	Low Priority	Located	Complete	MS4	August 7, 2019	August 25, 2020	Partly Cloudy	70	96	Trace	Intersection of Blossom St. and Mt.Vernon St.	Falulah Brook MA81-63	Residential	Circular/Pipe	High-Density Polyethylene	12	None-Wet		None	None	None		No									
3	C230	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	80	72	Trace	Lower rindge rd	Falulah Brook	Open Space	Circular/Pipe	Reinforced Conc	12	None-Dry		None	None	None		No									
3	C231	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	80	72	Trace	Lower rindge rd	Falulah Brook	Open Space	Circular/Pipe	Corrugated Metal Pipe	12	None-Dry		None	None	None		No									
3	C232	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	82	72	Trace	Lower Rindge Rd	Falulah Brook	Open Space	Circular/Pipe	Corrugated Metal Pipe	15	None-Dry		None	None	None		No									
3	C233	Low Priority	Located	Complete	MS4	August 6, 2019		Partly Cloudy	80	72	Trace	Lower rindge rd. McKay	Falulah Brook	Open Space	Circular/Pipe	High-Density Polyethylene	12	None-Dry		None	None	None		No									
3	C234	Low Priority	Located	Complete	MS4	June 9, 2020		Partly Cloudy	66	24	Trace	Marden St, near intersection with Townsend St (Near Eastwood Club)	Falulah Brook MA81-63		Circular/Pipe	VC	12	None-Dry		None	None	None		No									
3	C235	Low Priority	Located	Complete	MS4	June 9, 2020		Partly Cloudy	66	24	Trace	Marden St, near intersection with Townsend St (Near Eastwood Club)	Falulah Brook MA81-63		Circular/Pipe	VC	12	None-Dry		None	None	None		No									
1	C236	High Priority	Located	Complete	MS4	June 10, 2020		Sunny	64	72	0.1	Marden St, near intersection with Townsend St (Near Eastwood Club)	Falulah Brook MA81-63	Residential	Circular/Pipe	RCP	12	Running	Colorless	None	None	None	Clear	No		8.08	61.3	0.2	0.466	0.05	0.1	0	39,780
4	C237	Low Priority	Located	Complete	MS4	July 8, 2020		Cloudy	72	72	0.35	In Detention Pond Behind 12 Macintosh Lane North End	Unnamed Trib to Townsend Road Pond		Circular/Pipe	RCP	6	None-Dry		None	None	Dirt/Sediment Buildup											
4	C239	Low Priority	Located	Complete	MS4	July 8, 2020	November 4, 2020	Cloudy	72	72	0.35	In Detention Pond Behind 12 Macintosh Lane South End	Unnamed Trib to Townsend Road Pond	Residential	Circular/Pipe	RCP	14	None-Dry		None	None	None											
4	C240	Low Priority	Located	Complete	Private	July 8, 2020		Cloudy	72	72	0.35	Behind 3 Macintosh Lane	Unnamed Trib to Townsend Road Pond	Residential	Circular/Pipe	HDPE	6	None-Dry		None													
4	C241	Low Priority	Located	Complete	MS4	July 8, 2020	November 4, 2020	Cloudy	72	72	0.35	In Detention Pond Behind 122 Macintosh Lane South End	Unnamed Trib to Townsend Road Pond	Residential	Circular/Pipe	RCP (fluted)	22-24	None-Wet		None	None	None											
4	C243	Excluded	Located	Complete	Culvert	July 21, 2020		Sunny	89	72	0.15	Under Driveway of 19 New West Townsend Rd	Unnamed Trib to Townsend Road Pond	Residential	Circular/Pipe	Reinforced Concrete Pipe	16	None-Dry															
3	C244	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	70	72	Trace	Arn how farm road	Unnamed Trib to Saima Pond	Residential	Circular/Pipe	High-Density Polyethylene	12	None-Dry		None	None	None		No									
4	C301	Low Priority	Located	Complete	MS4	January 19, 2021						Under River st Bridge at Intersection with Main St (by KC's Pub) North Side	North Nashua River MA81-02			Stone	24 x 36	None-Dry		None	none	None											
4	C302	Low Priority	Located	Complete	MS4	January 19, 2021						Under River st Bridge at Intersection with Main St (by KC's Pub) North Side	North Nashua River MA81-02		Circular/Pipe	DI	18	None-Dry		None	none	None											
3	C303	Low Priority	Located Not Accessible	Complete	MS4	July 30, 2019	August 3, 2021	Sunny	61	48	0.04	Under River st Bridge at Intersection with Main St (by KC's Pub) South Side	North Nashua River MA81-02	Commercial	Circular/Pipe	CT - Clay Tile	18	Running	Colorless	None	None	Sediment	Clear	No		7.79	67	0.4	0.761	0.00	0.15	0	5
4	C304	Low Priority	Not Located	Complete								KC' Pub, Upstream of C303 North Side of River	North Nashua River MA81-02	Commercial	Circular/Pipe	VC	12																
3	C305	Low Priority	Located	Complete	MS4	June 9, 2020		Partly Cloudy	66	24	Trace	East Side of Detention Pond at end of Valley View Court	Unnamed Trib to North Nashua River MA81-02		Circular/Pipe	PVC	12	None-Dry		None	None	None		No									
3	C306	Low Priority	Located	Complete	MS4	June 10, 2020		Sunny	64	72	0.1	East Side of Detention Pond at end of Valley View Court (Next to C305)	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	Reinforced Concrete Pipe	30	Running	Colorless	None	None	None	Clear	No		7.16	60	0	0.123	0.05	0.15	0	1
3	C309	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	85	24	0.01	Gateway Park	North Nashua River MA81-02	Open Space	Circular/Pipe	Clay	12	None-Dry		None	None	None		No									
3	C310	Low Priority	Located	Complete	MS4	August 9, 2019		Sunny	80	24	0.38	Instersection of West St and Sheldon St Downstream	North Nashua River MA81-02	Residential	Circular/Pipe	Clay	12	None-Dry		None	None	None		No									
3	C3101	Low Priority	Located	Complete	MS4	June 10, 2020		Sunny	64	72	0.1	Across from 520 Fairmount St (Assumed)	North Nashua River MA81-01	Residential	Circular/Pipe	VC	12	Running	Colorless	None	None	None	Clear	No		6.67	57.1	0.2	0.493	0.10	0.15	0	10.89
3	C3102	Low Priority	Located	Complete	MS4	June 10, 2020		Sunny	64	72	0.1	Behind 68 Bilotta Way in North Detention Pond	North Nashua River MA81-01		Circular/Pipe	HDPE	22	Trickle	Colorless	None	None	None	Clear	No		7.36	59.5	0.2	0.548	0.10	0.2	0	6.32
3	C3103	Low Priority	Located	Complete	MS4	August 9, 2019		Sunny	75			Behind 76 Bilotta Way in South Detention Pond	North Nashua River MA81-01	Residential	Circular/Pipe	High-Density Polyethylene	20	None-Dry		None				No									
4	C3105	Low Priority	Not Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	In the wood west of Appleton Circle on hillside	North Nashua River MA81-01	Residential	Circular/Pipe	High-Density Polyethylene	18	None-Dry		None													
3	C3106	Low Priority	Located	Complete	MS4	August 15, 2019		Sunny	75	24	Trace	Behind 109 Depot St	Unnamed Trib to North Nashua River MA81-01	Residential	Circular/Pipe	Reinforced Concrete Pipe	30	Trickle	Colorless	None	None	Corrosion	Clear	No		7	62.24	0.3	0.863	0.00	0.2	0	23
3	C3109	Low Priority	Located	Complete	MS4	July 9, 2019		Sunny	80	72	1.37	Next to 242 Rollstone Rd	Sand Brook	Residential	Circular/Pipe	Reinforced Conc	24	Trickle	Colorless	None	None	None	Clear	No		7.39	65.48	0.1	0.2427	0.05	0.1	0	98
3	C311	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	80	24	0.01	Next to 242 Rollstone Rd	Sand Brook	Residential	Circular/Pipe	Reinforced Conc	24	None-Dry		None	None	Sediment		No									
3	C3111	Low Priority	Located	Complete	MS4	July 16, 2019		Sunny	77	96	0.81	Intersection of Rollstone Rd and Electirc Avenueue	Sand Brook	Commercial	Circular/Pipe	Reinforced Conc	8	None-Dry		None	None	None		No									
3	C3112	Low Priority	Located	Complete	MS4	July 16, 2019		Sunny	77	96	0.81	Intersection of Rollstone Rd and Electirc Avenueue	Sand Brook	Commercial	Circular/Pipe	Clay	15	None-Dry		None	None	None		No									
3	C3113	Low Priority	Located	Complete	MS4	July 17, 2019		Cloudy	79	120	0.81	Across from 100 Franklin St (next to utility corridor)	Sand Brook	Commercial	Circular/Pipe	Reinforced Conc	30	Running	Colorless	None	None	Sediment	Clear	No		7.34	66.02	0.3	0.6664	0.05	0.15	0	0
3	C3114	Low Priority	Located	Complete	MS4	July 17, 2019		Cloudy	79	120	0.81	Across from 100 Franklin St (next to utility corridor)	Sand Brook	Commercial	Circular/Pipe	Reinforced Conc	30	Running	Colorless	None	None	Sediment	Clear	No		7.37	65.3	0.2	0.4591	0.00	0.1	0	0
3	C3115	High Priority	Located	Complete	MS4	July 17, 2019		Partly Cloudy	79	120	0.81	South End in of Parkhill Park, within stone Channel	Sand Brook	Residential	Circular/Pipe	Reinforced Conc	24	Trickle	Colorless	None	Algae and Scum	Orange	Clear	No		6.79	65.3	0.4	0.8682	0.55	0.25	0	0
3	C3116	Low Priority	Located	Complete	MS4	July 17, 2019		Sunny	79	120	0.81	South End in of Parkhill Park, at the upstream end of stone channel	Sand Brook	Residential	Box Culvert	Reinforced Conc	24 x 36	Running	Colorless	None	Red Algae	Red	Clear	Yes	Outside Outfall	6.76	64.22	0.3	0.6664	0.00	0.25	0	0
3	C3118	Low Priority	Located	Complete	MS4	August 7, 2019		Mostly Sunny			96	Trace	In the woods behind 55 Causeway St	Sand Brook	Residential	Circular/Pipe	PVC	18	None-Dry		None				No									
3	C312	Low Priority	Located	Complete	MS4	August 14, 2019		Partly Cloudy	75			Underneath Sheldon St Bridge	North Nashua River MA81-02	Residential	Circular/Pipe	Cast Iron Pipe	18	None-Dry		None				No									
3	C3120	Low Priority	Located	Complete	MS4	July 26, 2019		Sunny	75	48	Trace	North Side of Parkhill Park (Downstream of C3119)	Sand Brook	Residential	Circular/Pipe	Corr. Metal	18	Running	Colorless	None	None	None	Clear	No		7.86	66.2	0.1	0.2427	0.40	0.25	0	39
3	C3122	Low Priority	Located	Complete	MS4	June 17, 2020		Partly Cloudy	68	120	0.26	Behind the Shed of 73 Amiott St	Sand Brook	Residential	Circular/Pipe	HDPE	12	Trickle	Colorless	None	None	None	Clear	No		6.28	60	0	0.182	0.05	0	0	125
4	C3127	Low Priority	Located	Complete	MS4	June 16, 2020	June 24, 2021	Sunny	75	24	0.13	Quarry Lane Detention Pond 2 (Farthest from the Street)	Sand Brook	Residential	Circular/Pipe	HDPE	24	None-Wet		None													
4	C3128	Low Priority	Located	Complete	MS4	June 16, 2020	June 24, 2021	Sunny	75	24	0.13	In the yard of 96 Wall St	Sand Brook	Residential	Circular/Pipe	CMP	12	None-Wet		None													
4	C3129	Low Priority	Not Located	Complete	MS4	August 21, 2020		Sunny	86	24	0.03	Behind 249 Kimball St (covered in Dense Bamboo)	North Nashua River MA81-02		Circular/Pipe	VC	15	None-Dry		None	None	None											
3	C313	Low Priority	Located	Complete	MS4	August 14, 2019		Partly Cloudy	75			Underneath Sheldon St Bridge	North Nashua River MA81-02	Residential	Circular/Pipe	Reinforced Concrete Pipe	12	None-Dry		None				No									
4	C3132	Low Priority	Located	Complete	Private	June 10, 2020		Sunny	70	72	0.1	In yard of 132 Beech St	North Nashua River MA81-02	Residential	Circular/Pipe	CMP	8	Running	Colorless	None	None	None	Clear	No		6.8	65.8	0.2	0.355	0.10	0.1	0	18
3	C314	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	90	24	0.01	In Nashua River near abandoned Pedestrian bridge behind 1428 Main St	North Nashua River MA81-02	Residential	Circular/Pipe	Clay	12	None-Dry		None	None	None		No									
3	C315	Low Priority	Located	Complete	MS4	July 30, 2019	June 24, 2021	Sunny	75	24	0.13	In Nashua River near abandoned Pedestrian bridge behind 1428 Main St	North Nashua River MA81-02	Residential	Circular/Pipe	Cast Iron	12	Dry		None	None	None		Yes	Inside and Outside Outfall								
3	C316	Low Priority	Located	Complete	MS4	July 30, 2019	June 24, 2021	Sunny	75	24	0.13	In Nashua River near abandoned Pedestrian bridge behind 1428 Main St	North Nashua River MA81-02	Commercial	Circular/Pipe	Cast Iron	12	Dry						Yes	Inside and Outside Outfall								

City of Fitchburg, Massachusetts
NPDES MS4 Compliance - Year 3 Annual Report
Illicit Discharge Detection and Elimination (IDDE) Program
Outfall and Interconnection Re-ranking

Rank Sorting Number	Outfall ID	Outfall Re-ranking	Outfall Located	Screening Status	Outfall Type	Inspection Date	Re-inspection Date	Weather	Temperature (°F)	Last Rain Event (Hours)	Rain Accumulation (in)	Closest Address / Location	Receiving Water	Contributing Land Use	Outfall Shape	Outfall Material	Outfall Dimensions (in)	Flow	Color	Odor	Floatables	Deposits/Stains	Clarity	Standing Water	Location of Standing Water	pH	Sample Temperature (°F)	Salinity (ppt)	Spec. Cond (mS/cm)	Ammonia (ppm)	Surfactants (ppm)	Total Chlorine (ppm)	E.Coli (Col/100mL)
3	C317	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	85	24	0.01	Yarn Works	North Nashua River MA81-02	Residential	Circular/Pipe	HDPE	18	None-Dry		None	None	None		No									
3	C318	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	89	24	0.01	Parking Lot of 1428 Main St	North Nashua River MA81-02	Commercial	Circular/Pipe	HDPE	15	None-Dry		None	None	None		No									
3	C319	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	90	24	0.01	Wallace @ River	North Nashua River MA81-02	Commercial	Circular/Pipe	Clay	8	None-Dry		None	None	Sediment		No									
3	C320	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	85	24	0.01	Wallace @ River	North Nashua River MA81-02	Commercial	Circular/Pipe	Clay	12	None-Dry		None	None	None		No									
3	C321	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	87	24	0.01	River St Bridge @ Wallace Rd, West Side Downstream	North Nashua River MA81-02	Commercial	Circular/Pipe	CT - Clay Tile	12	None-Dry		None	None	None		No									
3	C322	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	87	24	0.01	River St Bridge @ Wallace Rd, West Side Downstream	North Nashua River MA81-02	Commercial	Circular/Pipe	CT - Clay Tile	12	None-Dry		None	None	None		No									
3	C323	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	85	24	0.01	River St Bridge @ Wallace Rd, West Side Underneath	North Nashua River MA81-02	Commercial	Circular/Pipe	PVC	12	None-Dry		None	None	None		No									
3	C324	Low Priority	Located	Complete	MS4	July 31, 2019		Sunny	83	48	0.01	Under Kimball St Bridge (between rotary and Cleghorn St) East side	North Nashua River MA81-02	Residential	Circular/Pipe	Cast Iron	12	None-Dry		None	None	None		No									
3	C325	Low Priority	Located	Complete	MS4	August 21, 2020		Sunny	86	24	0.03	Kimball St bridge abutment	North Nashua River MA81-02	Commercial	Circular/Pipe	Reinforced Conc	24	Running		None	None	None		No		7.37	73.4	0	0.1179	0.05	0.15	0.5	0
3	C326	Low Priority	Located	Complete	MS4	July 31, 2019		Sunny	85	48	0.01	Cleghorn St	North Nashua River MA81-02	Residential	Circular/Pipe	HDPE	12	None-Dry		None				No									
3	C327	Low Priority	Located	Complete	MS4	July 31, 2019		Sunny	85	48	0.01	Cleghorn St	North Nashua River MA81-02	Residential	Circular/Pipe	Corr. Metal	18	None-Dry		None				No									
3	C328	Low Priority	Located	Complete	MS4	August 9, 2019		Sunny	80	24	0.38	Cleghorn St	North Nashua River MA81-02	Residential	Circular/Pipe	Corr. Metal	18	None-Dry		None				No									
3	C329	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	85	24	0.01	Underneath Daniels St Bridge	North Nashua River MA81-02	Commercial	Circular/Pipe	Clay	12	None-Dry		None	None	None		No									
2	C330	Low Priority	Located	Complete	MS4	July 31, 2019		Sunny	80	48	0.01	Underneath Daniels St Bridge	North Nashua River MA81-02	Commercial	Box Culvert	Reinforced Conc	36 x 36	Gushing	Colorless	None	None	None	Clear	No		7.82	68.18	0.4	0.8682	0.00	0.15	0	4,100
3	C331	Low Priority	Located	Complete	MS4	July 31, 2019		Sunny	83	48	0.01	Behind East side of 408 River St	North Nashua River MA81-02	Commercial	Box Culvert	Stone	12 x 24	Running	Colorless	None	Algae	Orange	Clear	No		6.31	61.7	0.2	0.4591	0.03	0.1	0	54
4	C332	Low Priority	Located	Complete		November 6, 2020		Cloudy	66	96	0.1	Underneath Oak Hill Rd Bridge North Side	North Nashua River MA81-02	Commercial	Circular/Pipe	VC	8	Trickle	Clear	None	None	None	Clear	No		6.31	61	0.3	603	0.00	0.2	0	0
3	C333	High Priority	Located	Complete	MS4	July 31, 2019	January 25, 2021	Partly Cloudy	80	48	0.01	Underneath Oak Hill Rd Bridge South Side (River St. @ Oak Hill Rd)	North Nashua River MA81-02	Commercial	Circular/Pipe	Reinforced Conc	48	Trickle	Clear	None	None	None	Clear	No		7.09	37.2	0.2	546	0.00	0.8	0	103442
3	C334	Low Priority	Located	Complete	MS4	July 31, 2019		Partly Cloudy	80	48	0.01	Underneath Oak Hill Rd Bridge South Side (River St. @ Oak Hill Rd)	North Nashua River MA81-02	Commercial	Circular/Pipe	Reinforced Conc	48	None-Dry		None	None	None		No									
3	C336	Low Priority	Located	Complete	MS4	July 31, 2019		Sunny	85	48	0.01	Between 25 and 41 Almount St	North Nashua River MA81-02	Residential	Circular/Pipe	Clay	12	None-Dry		None	None	None		No									
4	C338	Low Priority	Not Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	Across from 91 Wallace Rd North West of Detention Pond	North Nashua River MA81-02	Residential	Circular/Pipe	CMP	12	Running	Colorless	None	None	None	Clear	No		7.33	68.3	0.2	0.399	0.10	0.15	0	23
4	C341	Low Priority	Located	Complete	MS4	June 11, 2020	January 25, 2021	Cloudy	66	96	0.1	Straight down towards river from hole in the wall, Near Murphys Auto	North Nashua River MA81-02		Circular/Pipe	Stone	24 x 24	Running	Colorless	None	None	None	Clear	No		6.62	39.5	0.3	671	0.00	0.2	0	1
4	C342	Low Priority	Not Located	Complete								Upstream of brook that enters Nashua next to Railroad bridge at Southern intersection of Wallace and River	North Nashua River MA81-02		Circular/Pipe	RCP	12															
1	C343	Low Priority	Located	Complete	MS4	August 5, 2019		Sunny	75	48	Trace	Across from 601 River St North bank of Nashua River	North Nashua River MA81-02	Commercial	Box Culvert	Stone	24 x 36	Running	Colorless	None	None	None	Clear	No		7.53	64.76	0.2	0.4591	0.00	0.05	0	380
4	C345	Low Priority	Located	Complete		August 26, 2020	November 4, 2020	Sunny	76	48	0.04	South bank of Nashua River across from East side of 644 River St (Far behind 389 Fairmount St)	North Nashua River MA81-02		Circular/Pipe	RCP	12	None-Wet		None	None	None		Yes	Inside Outfall								
3	C347	Low Priority	Located	Complete	MS4	August 2, 2019		Sunny	70	48	1.25	castle st	North Nashua River MA81-02	Residential	fluted	High-Density Polyethylene	12	None-Dry		None	None	None		No									
3	C348	Low Priority	Located	Complete	MS4	August 5, 2019		Partly Cloudy	70	48	Trace	castle st	North Nashua River MA81-02	Residential	fluted	High-Density Polyethylene	12	None-Dry		None	None	None		No									
4	C349	Low Priority	Located	Complete		July 8, 2020						Detention Pond Behind 208 Bishop Rd	North Nashua River MA81-01		Circular/Pipe	Stone	36 x 36	None-Dry		None	None	None											
3	C350	High Priority	Located	Complete	MS4	August 2, 2019		Sunny	70	48	1.25	198 bishop	North Nashua River MA81-02	Residential	fluted	High-Density Polyethylene	18	Trickle	Colorless	None	None	None	Clear	Yes	Inside and Outside Outfall	8.22	70.52	0.4	0.8682	0.50	0.25	0	210
3	C351	Low Priority	Located	Complete	MS4	August 12, 2019		Sunny	75	48	Trace	Detion Pond in center of Bishop Rd	North Nashua River MA81-02	Residential	fluted	High-Density Polyethylene	18	None-Wet		None	None	Sediment		Yes	Inside and Outside Outfall								
3	C352	Low Priority	Located	Complete	MS4	August 2, 2019		Sunny	75	48	1.25	Detion Pond in center of Bishop Rd	North Nashua River MA81-02	Residential	Circular/Pipe	High-Density Polyethylene	18	None-Wet		None				Yes	Inside and Outside Outfall								
4	C353	Low Priority	Located	Complete	MS4	November 4, 2020						Across from 753 River St	North Nashua River MA81-01		Circular/Pipe	DI	12	None-Dry		None	None	None											
3	C354	Low Priority	Located	Complete	MS4	August 2, 2019		Sunny	75	48	1.25	Across from 753 River St	North Nashua River MA81-01	Residential	Circular/Pipe	Reinforced Concrete Pipe	48	None-Dry		None	None	None		No									
3	C355	Low Priority	Located	Complete	MS4	July 31, 2019		Sunny	85	48	0.01	Intersection of Fairmount St and Liberty Cir (North)	North Nashua River MA81-02	Residential	Circular/Pipe	Reinforced Conc	18	None-Wet		None				No									
3	C356	Low Priority	Located	Complete	MS4	August 15, 2019		Sunny	75	24	Trace	Intersection of Fairmount St and Liberty Cir (North)	North Nashua River MA81-01	Residential	Circular/Pipe	Reinforced Concrete Pipe	15	Trickle	Colorless	None	None	Rust	Clear	No		7.91	66.02	1.1	2.2	0.35	0.4	0	2
4	C358	Low Priority	Not Located	Complete	MS4	August 2, 2019						Below SW corner of Munksjo building in wall next to river	Wymans Brook		Circular/Pipe	RCP	36															
3	C359	Low Priority	Located	Complete	MS4	August 2, 2019		Sunny	80	48	1.25	Depot st bridge	North Nashua River MA81-01	Residential	Circular/Pipe	Clay Tile	12	None-Dry		None				No									
3	C360	Low Priority	Located	Complete	MS4	August 2, 2019		Sunny	75	48	1.25	Depot St Bridge North Side	North Nashua River MA81-01	Open Space	Circular/Pipe	Polyvinyl Chloride	12	None-Dry		None				No									
4	C361	Low Priority	Located	Complete		July 7, 2020	November 6, 2020	Sunny	70	48	0.35	Westminster St Bridge over Phillips Brook	Phillips Brook	Commercial	Circular/Pipe	RCP	12	Running	Colorless	None	None	None	Clear	No		6.28	60.1	0.2	0.662	0.00	0.2	0	0
4	C362	Low Priority	Located	Complete		July 7, 2020	June 24, 2021	Sunny	75	24	0.13	Westminster St Bridge over Phillips Brook	Phillips Brook	Commercial	Circular/Pipe	RCP	24	Dry														
4	C363	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	Westminster St Bridge over Phillips Brook	Phillips Brook	Commercial	Circular/Pipe	RCP	12	None-Dry		None												
4	C365	Low Priority	Located	Complete	MS4	November 5, 2020						Nextr to 62 Stickney Road	Unnamed Trib to Phillips Brook	Residential	Circular/Pipe			Trickle	Clear	None	None	None	Clear	No		7.23	52.3	0.3	723	0.00	0.3	0	15
4	C367	Low Priority	Located	Complete	MS4	November 5, 2020						Next to 535 Ashburnham Street	Unnamed Trib to Phillips Brook	Residential	Circular/Pipe			Trickle	Clear	None	None	None	Clear	No		6.41	52.1	0.2	527	0.10	0.2	0	16
3	C368	Low Priority	Located	Complete	MS4	August 2, 2019		Sunny	80	48	1.25	365 Ashburnham st	Unnamed Trib to Phillips Brook	Residential	Circular/Pipe	Reinforced Concrete Pipe	18	None-Dry		None	None	Sediment		No									
3	C369	Low Priority	Located	Complete	MS4	August 5, 2019		Sunny	80	48	Trace	Nesr mctaggarts pond	Phillips Brook	Residential	Circular/Pipe	Reinforced Concrete Pipe	18	Running	Colorless	None	None	None	Clear	No		7.98	66.74	0.1	0.2427	0.00	0.2	0	140
3	C371	Low Priority	Located	Complete	MS4	August 13, 2019		Partly Cloudy	75	72	Trace	Along Westminister Hill Rd between Sanborn St and Baltic Lane (Best observed from Canyon)	Phillips Brook	Residential	Circular/Pipe	Clay Tile	8	None-Dry		None				No									
3	C372	Low Priority	Located	Complete	MS4	August 13, 2019		Partly Cloudy	75	72	Trace	Along Westminister Hill Rd between Sanborn St and Baltic Lane (Best observed from Canyon)	Phillips Brook	Residential	Circular/Pipe	Corrugated Metal Pipe	15	None-Dry		None				No									
3	C373	Low Priority	Located	Complete	MS4	August 5, 2019		Sunny	75	48	Trace	224 ashburnham st	Unnamed Trib to Phillips Brook	Residential	Circular/Pipe	High-Density Polyethylene	8	None-Dry		None	None	None		No									
3	C374	Low Priority	Located	Complete	MS4	August 7, 2019		Partly Cloudy	70	96	Trace	Sanborn St	Phillips Brook	Residential	Circular/Pipe	Clay Tile	12	None-Dry		None				No									
4	C375	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	Behind 179 Westminister St	North Nashua River MA81-01	Commercial	Circular/Pipe	VC	18	None-Dry		None												
3	C376	Low Priority	Located	Complete		August 5, 2019	June 24, 2021	Sunny	75	24	0.13	In the wood between 46 and 45 Hartland Ave (past the end of the street)	North Nashua River MA81-01	Residential	Circular/Pipe	Polyvinyl Chloride	12															
3	C377	High Priority	Located	Complete	MS4	August 5, 2019		Sunny	75	48	Trace	In the wood between 46 and 45 Hartland Ave (past the end of the street)	North Nashua River MA81-01	Residential	fluted	High-Density Polyethylene	12	Trickle	Colorless	None	None	None	Clear	No		6.26	57.2	0.1	0.2427	0.00	0.25	0.05	0
4	C378	Low Priority	Located	Complete	MS4	August 5, 2019						In detention pond at intersection of Kaysha and Hemlock						None-Dry		None	None	None											
3	C379	High Priority	Located	Complete	MS4	August 15, 2019		Sunny	75	24	Trace	Across from 490 Westminster St	North Nashua River MA81-01	Residential	Circular/Pipe	Cast Iron Pipe	8	Trickle	d/Orange/Rust co	Musty	Rust	Rust and Corrosion	Suspended Solids	Yes	Outside Outfall	6.32	66.92	0	0.278	NA	0.1	0.1	7
3	C380	Low Priority	Located	Complete	MS4	August 13, 2019		Partly Cloudy	75	72	Trace	Across from 490 Westminster St	North Nashua River MA81-01	Residential	Circular/Pipe	Reinforced Concrete Pipe	30	None-Dry		None				No									
4	C381	Low Priority	Located	Complete	MS4	June 9, 2020		Partly Cloudy	66	24	Trace	Across from 490 Westminster St	North Nashua River MA81-01	Commercial	Box Culvert	Stone	24 x 36	None-Wet		None	None	None											
3	C383	Low Priority	Located	Complete	MS4	August 5, 2019		Sunny	75	48	Trace	Across from 1 Overland	Unnamed Trib to North Nashua River MA81-01	Residential	Circular/Pipe	Polyvinyl Chloride	6	None-Dry		None	None	None		No									
3	C384	Low Priority	Not Located	Complete	MS4	June 10, 2020		Partly Cloudy	64	72	0.1	Behind 114 Cascade St	Unnamed Trib to North Nashua River MA81-01		Circular/Pipe	HDPE	12	None-Dry		None	None	None		No									
4	C385	Low Priority	Located	Complete	MS4	June 17, 2020	August 3, 2021	Sunny	64	48	0.04	Intersection of Westminister St and Industrial Rd	Snows Millpond	Commercial	Circular/Pipe	Cast Iron	12	None-Wet	Colorless	None	None	None	Clear	Yes	Inside and Outside Outfall	6.96	68.5	0.2	0.471	0.00	0.2	0	180
4	C386	Low Priority	Located	Complete	MS4	June 17, 2020	August 3, 2021	Sunny	64	48	0.04	Intersection of Westminister St and Industrial Rd	Snows Millpond	Commercial	Circular/Pipe	Cast Iron	12	None-Wet	Colorless	None	None	None	Clear	Yes	Inside and Outside Outfall	6.96	68.5	0.2	0.471	0.00	0.2	0	180
4	C387	Low Priority	Located	Complete	MS4	June 17, 2020	August 3, 2021	Sunny	64	48	0.04	Intersection of Westminister St and Industrial Rd	Snows Millpond	Commercial	Circular/Pipe	Cast Iron	12	None-Wet	Colorless	None	None	None	Clear	Yes	Inside and Outside Outfall	6.96	68.5	0.2	0.471	0.00	0.2	0	180
3	C388	Low Priority	Located	Complete	MS4	July 17, 2019		Cloudy	79	120	0.81	In the woods behind Arbor Way	Unamed Trib to North Nashua River MA81-01	Industrial	Circular/Pipe	Corr. Metal	48	None-Dry		None	None	Sediment		No									
3	C389	Low Priority	Located	Complete	MS4	July 17, 2019		Partly Cloudy	79	120	0.81	End of Stevens Rd	Unamed Trib to North Nashua River MA81-01	Industrial	Circular/Pipe	Corr. Metal	15	None-Dry		None	None			No									
3	C390	Low Priority	Located	Complete	MS4	July 17, 2019		Partly Cloudy	79	120	0.81	End of Stevens Rd	Unamed Trib to North Nashua River MA81-01	Industrial	Fluted	Reinforced Conc	15	None-Dry		None	None	None		No									
3	C391	Low Priority	Located	Complete	MS4	August 21, 2020		Sunny	86	24	0.03	NE Corner of SW detention pond at Victoria Lane and Ropers Rd	BMP/Sawmill Pond	Residential	Fluted	Reinforced Conc	24	None-Dry		None	None	Sediment		Yes	Inside and Outside Outfall								
3	C392	Low Priority	Located	Complete	MS4	August 5, 2019		Sunny	75	48	Trace	At the end of Swail SW of the SW detention Pond	BMP/Sawmill Pond	Industrial	Circular/Pipe	Polyvinyl Chloride	6	None-Dry		None	None	None		No									
4	C394	Low Priority	Not Located	Complete	MS4	August 21, 2020		Sunny	86	24	0.03	East side of North Detention Pond at intersection of Victoria Lane and Ropers Rd	BMP/Sawmill Pond		Circular/Pipe	PVC	6	Trickle	Faint Yellow	None	None	None	Clear	No		7.28	73.6	0.2	0.4	0.10	0.05	0.5	11
4	C395	Excluded	Located	Complete	Culvert	June 17, 2020	October 22, 2020	Partly Cloudy	68	120	0.26	North Side of North Detention Pond at intersection of Victoria Lane and Ropers Rd	BMP/Sawmill Pond		Circular/Pipe		12															
3	C396	Low Priority	Located	Complete	MS4	July 17, 2019		Cloudy	79	120	0.81	North side od detention pond at Victoria Lane @ Game On Way	BMP/Sawmill Pond	Residential	Circular/Pipe	Reinforced Conc	12	None-Dry		None	None	Sediment		No									
4	C399	Excluded	Located	Complete	Culvert	June 11, 2020		Cloudy	66	96	0.1	Behind 18 Chestnut St	North Nashua River MA81-02	Residential		Stone		Running		None	None	None											
1	C401	Low Priority	Located	Complete	MS4	July 8, 2019		Sunny	75	48	1.37	Upstream of coolodge park Bridge (West Bank)	Falulah Brook	Coolidge Park	Circular/Pipe	Reinforced Conc	30	Running	Colorless	None	Algae	None	Clear	No		7.07	61.7	0.3	0.6664	0.00	0.15	0	5,100
3	C402	Low Priority	Located	Complete	MS4	July 2, 2019		Sunny	71	48	0.16	Upstream of coolodge park Bridge (West Bank)	Falulah Brook	Coolidge Park	Circular/Pipe	HDPE	12	None-Dry		None	None	None		No									
3	C403	Low Priority	Located	Complete	MS4	August 6, 2019		Partly Cloudy	80	72	Trace	Coolidge	Falulah Brook	Residential	Circular/Pipe	Reinforced Concrete Pipe	18	None-Dry		None	None	None		No									
1	C404	Problem	Located	Complete	MS4	July 8, 2019		Sunny	75	48	1.37	Downstream of Coolidge Park Bridge (West Bank)	Falulah Brook	Open Space	Circular/Pipe	Reinforced Conc	36	Running	Colorless	None	Algae	None	Clear	No		7.24	60.26	0.1	0.2427	2.10	0.25	0	58,000
3	C405	Low Priority	Located	Complete	MS4	August 6, 2019		Partly Cloudy	80	72	Trace	Downstream of Coolidge Park Bridge (West Bank) behind 197 Townsend St	Falulah Brook	Residential	Circular/Pipe	Reinforced Concrete Pipe	36	None-Wet		None				Yes	Inside and Outside Outfall								
3	C406	Low Priority	Located	Complete	MS4	August 7, 2019		Partly Cloudy	70	96	Trace	Downstream of Coolidge Park Bridge (East Bank) behind 146 Buttrick Ave	Falulah Brook	Residential	Circular/Pipe	Reinforced Concrete Pipe	24	None-Dry		None				No									
3	C407	Low Priority	Located	Complete	MS4	July 2, 2019		Partly Cloudy	71	48	0.16	Detention Pond at Almees Way NE Corner	Falulah Brook MA81-63	Residential	Trumpted	Reinforced Conc	30	None-Dry		None	None	None		No									
3	C408	Low Priority	Located	Complete	MS4	July 2, 2019		Sunny	71	48	0.16	Detention Pond at Almees Way SE Corner	Falulah Brook MA81-63	Residential	Fluted	Reinforced Conc	30	None-Dry		None	None	None		No									
3	C409	Low Priority	Located	Complete	MS4	July 2, 2019		Partly Cloudy	71	48	0.16	Detention Pond at Almees Way SW Corner	Falulah Brook MA81-63	Residential	Fluted	PVC	12	None-Dry		None	None	None		No									
3	C411	Low Priority	Located	Complete	MS4	July 2, 2019	August 3, 2021	Partly Cloudy	71	48	0.16	Downstream of Lunenburg St Bridge West Side	Falulah Brook MA81-63	Residential	Fluted	PVC	12	None-Wet						Yes	Inside and Outside Outfall								
3	C412	Low Priority	Located	Complete	MS4	July 2, 2019		Sunny	71	48	0.16	Downstream of Lunenburg St Bridge East Side	Falulah Brook	Commercial	Circular/Pipe	Reinforced Conc	30	None-Dry		None	None	None		No									
3	C416	Low Priority	Located	Complete	MS4	July 2, 2019	January 25, 2021	Sunny/Clear	71	48	0.16	In brook on North Side of Parkinglot at John Fitch Plaza	Falulah Brook	Commercial	Circular/Pipe	Reinforced Conc	18	None-Wet	Colorless	None	None	None	Clear	Yes	Inside and Outside Outfall	6.83	43	0.4	0.776	0.00	0.35	0	31.45
3	C417	Low Priority	Located	Complete		July 2, 2019	June 24, 2021	Sunny/Clear	75	24	0.13	In brook on North Side of Parkinglot at John Fitch Plaza	Falulah Brook	Commercial	Circular/Pipe	Reinforced Conc	12	Dry						No									
4	C418	Excluded	Located	Complete	Private	June 17, 2020		Sunny	79	120	0.26	In brook behind 528 John Fitch Highway (Peerless Liquors)	Falulah Brook	Commercial	Circular/Pipe	PVC	4	Intermittent		None													

City of Fitchburg, Massachusetts
NPDES MS4 Compliance - Year 3 Annual Report
Illicit Discharge Detection and Elimination (IDDE) Program
Outfall and Interconnection Re-ranking

Rank Sorting Number	Outfall ID	Outfall Re-ranking	Outfall Located	Screening Status	Outfall Type	Inspection Date	Re-inspection Date	Weather	Temperature (°F)	Last Rain Event (Hours)	Rain Accumulation (in)	Closest Address / Location	Receiving Water	Contributing Land Use	Outfall Shape	Outfall Material	Outfall Dimensions (in)	Flow	Color	Odor	Floatables	Deposits/Stains	Clarity	Standing Water	Location of Standing Water	pH	Sample Temperature (°F)	Salinity (ppt)	Spec. Cond (mS/cm)	Ammonia (ppm)	Surfactants (ppm)	Total Chlorine (ppm)	E.Coli, Ecol / 100mL)
4	C419	Excluded	Not Located	Complete		June 17, 2020		Sunny	79	120	0.26	In brook behind 560 John Fitch Highway (Mad Vapes/Fitchburg Tatoo)	Falulah Brook		Circular/Pipe	PVC	10			None														
4	C420	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	In brook behind 420 John Fitch Highway (Enterprise Bank)	Baker Brook	Commercial	Circular/Pipe	RCP	18	None-Dry		None														
4	C421	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	In brook behind 406 John Fitch Highway (Aarons)	Baker Brook	Commercial	Circular/Pipe	RCP	18	None-Dry		None														
4	C422	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	In brook behind 380 John Fitch Highway (Urgent Care)	Baker Brook	Commercial	Circular/Pipe	RCP	12	None-Dry		None														
3	C423	Low Priority	Located	Complete	MS4	July 8, 2019		Sunny	75	48	1.37	In brook behind 334 John Fitch Highway (McDonalds)	Baker Brook	Commercial	Circular/Pipe	Corr. Metal	12	None-Dry		None	None	None		Yes	Inside Outfall									
3	C424	Low Priority	Located	Complete	MS4	July 8, 2019		Sunny	75	48	1.37	In brook behind 334 John Fitch Highway (McDonalds)	Baker Brook	Commercial	Circular/Pipe	Clay	6	None-Dry		None	None	None		No										
5	C425	Excluded	Located	Complete	Culvert	July 8, 2019		Sunny	75	48	1.37	In brook behind 334 John Fitch Highway (McDonalds)	Baker Brook	Open Space	Circular/Pipe	Other	24	Running	Colorless	None	None	None	Clear	No										
3	C426	Low Priority	Located	Complete	MS4	July 8, 2019		Sunny	75	48	1.37	In brook behind 334 John Fitch Highway (McDonalds)	Baker Brook	Commercial	Circular/Pipe	Clay	6	None-Dry		None	None	None		No										
1	C427	Low Priority	Located	Complete	MS4	July 8, 2019		Sunny	75	48	1.37	334 John Fitch	Baker Brook	Commercial	Circular/Pipe	Other	30	Running	Colorless	None	None	Rust	Clear	No		7.28	65.3	0.3	0.6664	0.40	0.2	0	3,000
3	C428	Low Priority	Located	Complete	MS4	July 9, 2019		Partly Cloudy	80	72	1.37	In brook benind Jonh Fitch Highway Across from St Bernand Athletic Fields	Baker Brook	Residential	Circular/Pipe	Reinforced Conc	12	None-Dry		None	None	None		Yes	Outside Outfall									
3	C429	Low Priority	Located	Complete	MS4	June 17, 2020		Partly Cloudy	68	120	0.26	In brook benind Jonh Fitch Highway Across from St Bernand Athletic Fields	Baker Brook		Circular/Pipe	RCP	12	None-Dry		None	None	None		No										
3	C430	Low Priority	Not Located	Complete	MS4	July 9, 2019		Partly Cloudy	80	72	1.37	In brook next to 130 John Fitch Highway (Carstar)	Baker Brook	Commercial	Circular/Pipe	Reinforced Conc	12	None-Dry		None	None	None		No										
4	C431	Low Priority	Located	Complete	MS4							In Swale at end of Ray Ave and 100 John Fitch Highway						None-Wet	Clear	None				Yes	Inside Outfall								
3	C432	Excluded	Located	Complete	Culvert	July 10, 2019		Sunny	88	96	1.37	Behind 68 Airport Rd, in swail hidden by dense Bamboo	North Nashua River MA81-02	Commercial	Circular/Pipe	Corr. Metal	48	Trickle		None	None	None		No										
3	C433	Excluded	Located	Complete	Culvert	July 10, 2019		Sunny	88	96	1.37	Behind 68 Airport Rd, in swail hidden by dense Bamboo	North Nashua River MA81-02	Commercial	Circular/Pipe	HDPE	12	Trickle	Colorless	None	None	None	Clear	No										
4	C434	Low Priority	Not Located	Complete		June 11, 2020		Cloudy	66	96	0.1	On Nashua River bank behind 135 Intervale Rd	North Nashua River MA81-02		Circular/Pipe	RCP	48																
4	C435	Low Priority	Not Located	Complete		June 9, 2020		Partly Cloudy	66	24	Trace	Behind 88 Benson St	Unnamed Trib to North Nashua River MA81-02		Circular/Pipe	CMP	48	None-Wet		None	None	None												
4	C436	Low Priority	Not Located	Complete		June 9, 2020		Partly Cloudy	66	24	Trace	Behind 88 Benson St	Unnamed Trib to North Nashua River MA81-02		Circular/Pipe	HDPE	12	None-Dry		None	None	None												
1	C438	Low Priority	Located	Complete	MS4	July 10, 2019		Sunny	88	96	1.37	In woods across from Canton St, South Side of 44 Wanoosnoc Rd	North Nashua River MA81-02	Open Space	Box Culvert	Reinforced Conc	42 x 30	Running	Colorless	None	None	Rust	Clear	No		7.56	67.82	0.2	0.4591	0.10	0.2	0	4,500
4	C439	Low Priority	Located Not Accessible	Complete		June 16, 2020		Sunny	77	96	0.26	Behind 480 Water St, downstream of railroad bridge	North Nashua River MA81-02	Commercial	Circular/Pipe	RCP	60																
4	C440	Low Priority	Located	Complete		July 8, 2020		Cloudy	72	72	0.35	Downstream of C438, on downstream face of Dam / Arden Mills Way	North Nashua River MA81-02		Box Culvert	RCP	36 x 36																
3	C441	Low Priority	Located	Complete	MS4	July 25, 2019		Partly Cloudy	79	24	Trace	In woods SE of Intersection of Water St and John T Centrino Memorial Dr	North Nashua River MA81-02	Residential	Circular/Pipe	Reinforced Conc	18	None-Dry		None	None	None		No										
1	C442	High Priority	Located	Complete	MS4	July 25, 2019		Partly Cloudy	79	24	Trace	In woods SE of Intersection of Water St and John T Centrino Memorial Dr	North Nashua River MA81-02	Residential	Circular/Pipe	Reinforced Conc	18	Running	Colorless	None	None	None	Clear	No		7.66	68	0.2	0.4591	0.15	0.35	0	58,000
4	C443	Low Priority	Not Located	Complete		June 11, 2020	November 6, 2020	Cloudy	66	96	0.1	In Nashua River Upstream of C444, Downstream of Rail Road Bridge	North Nashua River MA81-02	Commercial	Circular/Pipe	RCP	72	None-Dry		None	None	None												
4	C444	Problem	Not Located	Complete	MS4	June 11, 2020	November 6, 2020	Cloudy	66	96	0.1	In Nashua River Upstream of C444, Downstream of Rail Road Bridge	North Nashua River MA81-02	Commercial	Circular/Pipe			Running	Colorless	None	none	None	Clear	No		7.24	62.1	0.3	0.723	2.15	0.4	0	8,088
3	C445	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	83	24	0.01	In Nashua River near corner of First St and Railroad St	North Nashua River MA81-02	Residential	Circular/Pipe	Clay	8	None-Dry		None				No										
3	C446	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	85	24	0.01	Under Water St Bridge at Central Plaza South Side	North Nashua River MA81-02	Residential	Circular/Pipe	Clay	24	None-Dry		Sewage	None	None		No										
3	C447	Low Priority	Located	Complete	MS4	July 30, 2019	August 3, 2021	Sunny	72	48	0.04	Under Water St Bridge at Central Plaza North Side	North Nashua River MA81-02	Commercial	Circular/Pipe	Clay	24	Trickle	Colorless	None	None	None	Clear	No		6.91	71.8	1.7	3.29	0.00	0.6	0	84
3	C448	Low Priority	Located Not Accessible	Complete	MS4	July 30, 2019		Sunny	83	24	0.01	North Side of Walnut St	North Nashua River MA81-02	Residential	Circular/Pipe	Clay	12	None-Dry		None	None	None		No										
4	C449	Low Priority	Located	Complete	Upland							CHANGE LOCATION	North Nashua River MA81-02		Circular/Pipe	RCP	6			None														
3	C450	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	83	24	0.01	North Side of Walnut St	North Nashua River MA81-02	Residential	Circular/Pipe	Clay	8	None-Dry		None	None	Sediment		No										
3	C451	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	83	24	0.01	North Side of Walnut St	North Nashua River MA81-02	Residential	Circular/Pipe	Clay	6	None-Dry		None	None	None		No										
3	C452	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	83	24	0.01	North Side of Walnut St	North Nashua River MA81-02	Residential	Circular/Pipe	Cast Iron	8	None-Dry		None				No										
4	C453	Low Priority	Not Located	Complete		June 16, 2020		Sunny	77	96	0.26	NW side of Water Street Bridge Behind tall grass	North Nashua River MA81-02	Commercial	Circular/Pipe	DI	18																
3	C454	Low Priority	Located Not Accessible	Complete	MS4	July 26, 2019	August 3, 2021	Sunny	73	48	0.04	5th Street Bridge (parked across from 5th Street Diner, 134 Harvard St)	North Nashua River MA81-02	Commercial	Circular/Pipe	HDPE	8	None-Wet						Yes	Bottom of DMH 6513									
3	C455	Low Priority	Located	Complete	MS4	July 26, 2019	August 3, 2021	Sunny	73	48	0.04	Just Downstream of Laurel St Bridge, West Bank (Laurel St at South St)	North Nashua River MA81-02	Residential	Circular/Pipe	Reinforced Conc	66	Gushing	Colorless	None	None	None	Clear	No		7.56	68.6	0.5	984	0.00	0.15	0	690
4	C456	Excluded	Not Located	Complete	MS4	June 16, 2020		Sunny	77	96	0.26	Riverfront Park off Boulder Dr, Downstream of Bridge Adjacent to C457	North Nashua River MA81-02		Circular/Pipe	HDPE	18																
2	C457	Low Priority	Located Not Accessible	Complete	MS4	July 26, 2019		Sunny	83	48	Trace	Riverfront Park off Boulder Dr, Downstream of Bridge East Bank Hidden by Bamboo	North Nashua River MA81-02	Commercial	Circular/Pipe	HDPE	18	Trickle	Colorless	None	None	None	Clear			7.49	71.96	0.2	0.4591	0.05	0.25	0	8,700
4	C458	Low Priority		Complete								Riverfront Park off Boulder Dr, within bridge abutment on upstream West side	North Nashua River MA81-02		Circular/Pipe	VC	6			None														
4	C459	Excluded	Not Located	Complete	MS4							Riverfront Park off Boulder Dr. Couple hundred ft East of steel / wood bridge	North Nashua River MA81-02	Commercial	Circular/Pipe	RCP	48																		
4	C460	Low Priority	Located	Complete	MS4	July 8, 2020		Cloudy	72	72	0.35	Between 106 and 132 Canton St	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	VC	8	None-Wet		None														
3	C462	Low Priority	Not Located	Complete		August 15, 2019		Sunny	70	24	Trace	Near Intersection of Romano Ave and South St, Across the Street from C461	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	Reinforced Concrete Pipe	30	None-Dry		None	None	None												
3	C464	Low Priority	Located	Complete	MS4	August 15, 2019		Sunny	79	24	Trace	Near Intersection of Electric Ave and South St, NE Side	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	RCP	36	None-Wet						Yes	Inside and Outside Outfall									
3	C465	Low Priority	Located	Complete	MS4	July 17, 2019		Sunny	79	120	0.81	Near Intersection of Electric Ave and South St, NE Side	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	Cast iron	6	None-Dry		None	None	None		No										
3	C468	Low Priority	Located	Complete	MS4	June 16, 2020		Partly Cloudy	66	96	0.26	Between 106 and 132 Canton Street	Unnamed Trib to North Nashua River MA81-02		Circular/Pipe	VC	12	None-Dry		None	None	None		No										
3	C469	Low Priority	Located	Complete	MS4	July 17, 2019		Sunny	79	120	0.81	Mt Elam Rd Entrance to Coggshall Park	Unnamed Pond off Laurel Ave.	Residential	Circular/Pipe	PVC	18	None-Dry		None	None	None		No										
4	C470	Low Priority	Located	Complete	MS4	July 7, 2020		Sunny	70	48	0.35	Across from 455 Milk St (Likely originatates from manhole @ intersection of Hutchinson and Seneca)	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	DI	12	None-Wet		None														
3	C471	Low Priority	Located	Complete	MS4	July 17, 2019		Sunny	84	120	0.81	Across from 455 Milk St	Unamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	Reinforced Conc	12	None-Dry		None	None	None		No										
3	C472	Low Priority	Located	Complete	MS4	July 17, 2019		Partly Cloudy	84	120	0.81	Across From 455 Milk St	Unamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	Corr. Metal	24	None-Dry		None				Yes	Outside Outfall									
3	C473	Low Priority	Located	Complete	MS4	July 17, 2019		Cloudy	84	120	0.81	Across from 455 Milk St	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	Reinforced Conc	36	None-Dry		None				Yes	Outside Outfall									
4	C474	Low Priority	Located	Complete		June 16, 2020						In the woods behind Kingsburry and Colburn St	North Nashua River MA81-02		Circular/Pipe	RCP	12	None-Dry		None	None	None												
3	C475	Low Priority	Located Not Accessible	Complete	MS4	August 5, 2019	August 3, 2021	Sunny	73	48	0.04	At the end of Kimball St Sewer Easememnt (Bewteen Intersections with Putnam and Franklin); Fitchburg Cable Access TV	North Nashua River MA81-02	Commercial	Circular/Pipe	Corrugated Metal Pipe	18	Running	Colorless	None	None	None	Clear	No		6.95	64.6	0.3	0.685	0.05	0.15	0	25
3	C476	Low Priority	Located	Complete	MS4	July 26, 2019	November 10, 2020	Sunny	83	48	Trace	Behind Rollstone Bank & Trust; Across from DPW Parking Lot	North Nashua River MA81-02	Commercial	Circular/Pipe	PVC	12	None-Dry		None														
3	C477	Low Priority	Located	Complete	MS4	July 26, 2019		Sunny	83	48	Trace	Behind Rollstone Bank & Trust; Across from DPW Parking Lot	North Nashua River MA81-02	Commercial	Circular/Pipe	Reinforced Conc	72	Gushing	Colorless	None	None	None	Clear	No		7.58	66.92	0.4	0.8682	0.00	0.1	0	46
3	C478	Low Priority	Located	Complete	MS4	August 14, 2019		Mostly Sunny	71			Underneath Old Rollstone Street Bridge North Side	North Nashua River MA81-02	Commercial	Circular/Pipe	Clay	12	None-Dry		None				No										
3	C479	Low Priority	Located	Complete	MS4	July 26, 2019		Mostly Sunny	83	48	Trace	Underneath Old Rollstone Street Bridge South Side (DPW Bridge)	North Nashua River MA81-02	Commercial	Circular/Pipe	Clay	24	None-Dry		None	None	None		No										
4	C480	Low Priority	Located	Complete	MS4	June 16, 2020		Sunny	77	96	0.26	Across from 375 Princton Rd	Flag Brook	Commercial	Circular/Pipe	RCP	36	None-Dry		None														
3	C481	Low Priority	Located	Complete	MS4	July 26, 2019		Mostly Sunny	83	48	Trace	Underneath Old Rollstone Street Bridge South Side (DPW Bridge)	North Nashua River MA81-02	Commercial	Circular/Pipe	HDPE	30	Running	Colorless	None	None	None	Clear	No		7	61.88	0.2	0.4591	0.00	0.2	0	8
3	C482	Low Priority	Located	Complete	MS4	July 26, 2019		Mostly Sunny	83	48	Trace	Underneath New Rollstone Street Bridge South Side	North Nashua River MA81-02	Commercial	Circular/Pipe	Cast iron	12	None-Dry		None	None	None		No										
3	C484	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	83	24	0.01	Circle St Bridge	North Nashua River MA81-02	Industrial	Circular/Pipe	Clay	10	None-Dry		None				No										
3	C485	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	85	24	0.01	Circle St Bridge	North Nashua River MA81-02	Industrial	Circular/Pipe	Clay	4	None-Dry		None				No										
3	C486	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	85	24	0.01	Circle St Bridge	North Nashua River MA81-02	Industrial	Circular/Pipe	Clay	18	None-Dry		None				No										
3	C487	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	85	24	0.01	Circle St Bridge	North Nashua River MA81-02	Industrial	Circular/Pipe	HDPE	12	None-Dry		None				No										
3	CS03	Low Priority	Located	Complete	MS4	July 15, 2019		Sunny	75	72	0.81	Bray Ave South Detention Pond	Sawmill Pond	Residential	Circular/Pipe	PVC	18	Trickle	Colorless	None	Algae	Algae	Clear	No		7.41	70.34	0.2	0.4591	0.10	0.2	0	88
3	CS05	Low Priority	Located	Complete	MS4	July 15, 2019		Sunny	78	72	0.81	Just Outside Bray Ave South Deteniton Pond (Outfall for CS04 Inlet)	Sawmill Pond	Residential	Circular/Pipe	PVC	18	None-Dry		None	None	None		No										
3	CS08	Low Priority	Located	Complete	MS4	August 21, 2020		Sunny	86	24	0.03	Bray Ave South Detention Pond	Sawmill Pond	Residential	Circular/Pipe	HDPE	15	None-Dry		None	None	None		No										
3	CS10	Low Priority	Located	Complete	MS4	July 15, 2019		Sunny	75	72	0.81	Just Outsidde Bray Ave North Detention Pond (Oufall to CS09 Inlet)	Sawmill Pond	Residential	Circular/Pipe	HDPE	15	None-Dry		None	None	None		No										
3	CS11	Low Priority	Located	Complete	MS4	July 15, 2019		Sunny	77	72	0.81	Across from 375 Princeton Rd; Can-Am Machinery Parking lot	Flag Brook	Residential	Circular/Pipe	Cast iron	15	Trickle	Colorless	None	None	None	Clear	No		7.92	68.18	0.1	0.2427	0.00	0.25	0	0
3	CS12	Low Priority	Located	Complete	MS4	June 16, 2020		Partly Cloudy	66	96	0.26	Between 180 and 160 Authority Dr	Wymans Brook		Circular/Pipe	RCP	36	None-Dry		None	None	None		No										
3	CS13	Low Priority	Located	Complete	MS4	July 16, 2019		Sunny	77	96	0.81	Across from 407 Princeton Rd/ Can-Am Machinery	Flag Brook	Commercial	Circular/Pipe	Corr. Metal	36	Running	Colorless	None	None	Rust	Clear	No		8.35	61.52	0.6	1.2603	0.00	0.25	0	0
3	CS14	Low Priority	Located	Complete	MS4	July 16, 2019		Sunny	72	96	0.81	Across from 407 Princeton Rd	Flag Brook	Residential	Circular/Pipe	Reinforced Conc	12	None-Dry		None				No										
3	CS15	Low Priority	Located	Complete	MS4	July 15, 2019		Sunny	77	72	0.81	SW side of Fifth Mass Turnpike Bridge (Buried under thorn bush)	Flag Brook	Residential	Circular/Pipe	Reinforced Conc	12	None-Dry		None	None	None		No										
4	C516	Low Priority	Located	Complete	MS4	June 16, 2020	June 24, 2021	Sunny	75	24	0.13	Between 180 and 160 Authority Dr	Wymans Brook	Commercial	Circular/Pipe	RCP	30	None-Wet	Orange					Yes	Inside and Outside Outfall									
3	CS17	Low Priority	Located	Complete	MS4	August 7, 2019		Partly Cloudy	70	96	Trace	Detention pond behind 257 Tibbett Circle	Unnamed Trib to Monoosnoc Brook	Residential	Circular/Pipe	High-Density Polyethylene	15	None-Dry		None				No										
3	C518	Low Priority	Located	Complete	MS4	July 15, 2019		Sunny	77	72	0.81	Intersection of Authority Dr and Development Rd in woods	Wymans Brook	Industrial	Fluted	Reinforced Conc	30	None-Dry		None	None	Red Corrosion Stains		No										

City of Fitchburg, Massachusetts
NPDES MS4 Compliance - Year 3 Annual Report
Illicit Discharge Detection and Elimination (IDDE) Program
Outfall and Interconnection Re-ranking

Rank Sorting Number	Outfall ID	Outfall Re-ranking	Outfall Located	Screening Status	Outfall Type	Inspection Date	Re-inspection Date	Weather	Temperature (°F)	Last Rain Event (Hours)	Rain Accumulation (in)	Closest Address / Location	Receiving Water	Contributing Land Use	Outfall Shape	Outfall Material	Outfall Dimensions (in)	Flow	Color	Odor	Floatables	Deposits/Stains	Clarity	Standing Water	Location of Standing Water	pH	Sample Temperature (°F)	Salinity (ppt)	Spec. Cond (mS/cm)	Ammonia (ppm)	Surfactants (ppm)	Total Chlorine (ppm)	E.Coli, Ecol / 100mL)
4	CS19	Excluded	Located	Complete	Culvert	June 16, 2020		Sunny	77	96	0.26	in woods at the end of Authority Dr	Wymans Brook		Circular/Pipe	RCP	18	Trickling		None	Algae	None			No									
3	CS20	Low Priority	Located	Complete	MS4	July 15, 2019		Sunny	74	72	0.81	In woods at the end of Authority Dr	Wymans Brook	Industrial	Fluted	Reinforced Conc	15	None-Dry		None														
4	CS22	Excluded	Located	Complete	Culvert	June 16, 2020		Sunny	77	96	0.26	in woods at the end of Authority Dr	Wymans Brook					Trickling		None	None	None			No									
3	CS25	Low Priority	Located	Complete	MS4	July 16, 2019		Sunny	77	96	0.81	East End of Pepper St	Shea Brook	Residential	Circular/Pipe	Reinforced Conc	24	Trickle	Colorless	None	None	Rust	Clear	Yes	Outside Outfall	7.32	66.02	0.2	0.4591	0.05	0.2	0	0
3	CS26	Low Priority	Located	Complete	MS4	July 16, 2019		Sunny	79	96	0.81	Behind 160 Pepper Rd (Upstream of CS25)	Shea Brook	Residential	Circular/Pipe	HDPE	36	None-Wet		None				Yes	Inside and Outside Outfall								
3	CS27	Low Priority	Located	Complete	MS4	July 16, 2019		Sunny	79	96	0.81	Behind 160 Pepper Rd (Upstream of CS25)	Shea Brook	Residential	Circular/Pipe	HDPE	36	Trickle	Colorless	None	None	Sediment	Clear	Yes	Inside and Outside Outfall	5.85	66.02	0.2	0.4591	0.05	0.1	0	0
3	CS28	Low Priority	Located	Complete	MS4	July 17, 2019		Sunny	84	120	0.81	Detention pond East end of Sarah Lane (Next to 69 Sarah Lane)	Shea Brook	Residential	Circular/Pipe	Reinforced Conc	18	None-Dry		None		Sediment		No										
3	CS29	Low Priority	Located	Complete	MS4	July 8, 2019			75	48	1.37	62 Anita Drive	Sand Brook	Residential	Circular/Pipe	PVC - Polyvinyl Chloride	12	None-Wet		None				Yes	Inside and Outside Outfall								
3	CS30	Low Priority	Located	Complete	MS4	July 9, 2019		Sunny	80	72	1.37	Next to 62 Anita Dr	Sand Brook	Residential	Circular/Pipe	PVC	12	None-Dry		None	None	Sediment		No										
3	CS31	Low Priority	Located	Complete	MS4	July 9, 2019		Sunny	80	72	1.37	Between 105 and 121 Tibbett Circle	Unnamed Trib to Monoosnoc Brook	Residential	Circular/Pipe	PVC	15	None-Dry		None	None	None		No										
3	CS32	Low Priority	Located	Complete	MS4	July 9, 2019		Sunny	80	72	1.37	Between 105 and 121 Tibbett Circle	Unnamed Trib to Monoosnoc Brook	Residential	Circular/Pipe	PVC	6	None-Dry		None	None	None		No										
3	CS33	Low Priority	Located	Complete	MS4	July 9, 2019		Sunny	80			Off Watt's Way @ Eleanor St In Detention Pond	Sand Brook	Residential	Circular/Pipe	PVC	24	None-Dry		None				No										
3	CS34	Low Priority	Located	Complete	MS4	July 9, 2019		Partly Cloudy	70	72	1.37	Detention pond behind 257 Tibbett Circle	Unnamed Trib to Monoosnoc Brook	Residential	Circular/Pipe	High-Density Polyethylene	15	Trickle	Colorless	None	Algae	Green Algae	Clear	No		6.62	57.74	0.1	0.2427	0.00	0.1	0	20
4	CS35	Low Priority		Complete		June 17, 2020		Partly Cloudy	68	120	0.26	Off Watt's Way @ Eleanor St In Detention Pond	Unnamed Trib to Monoosnoc Brook	Residential	Circular/Pipe	HDPE	15			None														
3	CS36	Low Priority	Located	Complete	MS4	July 9, 2019		Sunny	80	72	1.37	Off Watt's Way @ Eleanor St In Detention Pond	Sand Brook	Residential	Circular/Pipe	PVC	10	None-Dry		None	None	None		No										
3	CS37	Low Priority	Located	Complete	MS4	July 9, 2019		Sunny	80	72	1.37	Detention Pond Across from 15 Carrie Ann Lane	Sand Brook	Residential	Fluted	Reinforced Conc	18	None-Dry		None	None	Sediment		No										
3	CS38	Low Priority	Located	Complete	MS4	July 9, 2019		Sunny	80	72	1.37	Detention Pond Across from 15 Carrie Ann Lane	Sand Brook	Residential	Fluted	Reinforced Conc	18	None-Dry		None	None	None		No										
4	CS39	Low Priority	Located	Complete	MS4	June 17, 2020		Partly Cloudy	68	120	0.26	Detention pond behind 112 Goodfellow Dr	Unnamed Trib to Monoosnoc Brook	Residential	Circular/Pipe	HDPE	18	None-Wet		None														
4	CS40	Low Priority	Located	Complete	MS4	June 17, 2020		Partly Cloudy	68	120	0.26	Detention pond behind 112 Goodfellow Dr	Unnamed Trib to Monoosnoc Brook	Residential	Circular/Pipe	HDPE	24			None														
3	CS43	Low Priority	Located	Complete								Just Outside Detention Pond Behind 32 Goodfellow Dr	North Nashua River MA81-02	Residential	Circular/Pipe	HDPE	24	None-Wet	Colorless	None	None	None	Clear	Yes	Inside Outfall	6.93	62.6	0.1	0.321	0.05	0.15	0	12.8
3	C601	Low Priority	Located	Complete	MS4	July 8, 2020		Cloudy	72	72	0.35	Stony Creek/ Next to 234 Wanoosnoc Rd	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	HDPE	8	None-Dry		None	None	None		No										
3	C602	Low Priority	Located	Complete	MS4	July 10, 2019		Sunny	88	96	1.37	Stony Creek/ Next to 234 Wanoosnoc Rd	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	Clay	12	None-Dry		None	None	Sediment		No										
3	C603	Low Priority	Located	Complete	MS4	July 10, 2019		Sunny	88	96	1.37	Next to 30 Glen Ave	Monoosnoc Brook	Residential	Circular/Pipe	Reinforced Conc	12	None-Dry		None	None	None		No										
3	C606	Low Priority	Located	Complete	MS4	July 10, 2019		Sunny	88	96	1.37	Next to 18 Olin Drive	Unamed Tribute to Monoosnoc Brook	Commercial	Circular/Pipe	Clay	12	None-Dry		None				No										
3	C607	Low Priority	Located	Complete	MS4	July 10, 2019	August 3, 2021	Sunny	73	48	0.04	Next to 18 Olin Ave	Unamed Tribute to Monoosnoc Brook	Commercial	Circular/Pipe	Reinforced Conc	24	None-Wet		None				Yes	Standing water in all 3 upstream structures									
3	C610	Low Priority	Located	Complete	MS4	August 15, 2019		Sunny	75	24	Trace	Intersection of Carriageway Dr and Chalmers St	Unnamed Trib to North Nashua River MA81-02	Residential	Circular/Pipe	Reinforced Concrete Pipe	36	Running	Colorless	None	None	None	Clear	No		7.39	62.6	0.7	1.408	0.05	0.6	0	46
3	C612	Low Priority	Located	Complete	MS4	July 25, 2019		Sunny	76	24	Trace	Behind 1426 Water St	Unnamed Trib to North Nashua River MA81-02	Commercial	Box Culvert	Reinforced Conc	36 x 36	Trickle	Colorless	None	None	None	Clear	No		7.91	68.54	0.3	0.6664	0.00	0.15	0	56
4	C613	Low Priority	Not Located	Complete		July 8, 2020	August 3, 2021	Sunny	75	48	0.04	Airport Blvd at Crawford St	Falulah Brook	Commercial	Circular/Pipe	Reinforced Conc	16	None-Dry						No										
3	N/A-001	Low Priority	Located	Complete	Culvert	July 10, 2019		Sunny	73	96	1.37	Kyle Rd		Residential	Circular/Pipe	RCP	18	None-Wet		None	None	Sediment		No										
5	N/A-002	Excluded	Located	Complete	Culvert	July 10, 2019		Sunny	73	96	1.37	Kyle Rd		Residential	Circular/Pipe	Reinforced Concrete Pipe	18	Trickle						No										
3	N/A-003	Low Priority	Located	Complete	MS4	July 30, 2019		Sunny	73	24	0.01	Kyle Rd		Residential	Circular/Pipe	Reinforced Concrete Pipe	18	None-Dry		None				No										
3	N/A-004	Low Priority	Located	Complete	MS4	August 6, 2019		Sunny	73	72	Trace	Kyle Rd		Residential	Circular/Pipe	Reinforced Concrete Pipe	18	None-Dry		None				No										
3	Unmarked-1	Low Priority	Located	Complete	MS4	August 9, 2019						South St @ Olin Ave (DeCarolis Insurance Parking lot)		Commercial	Circular/Pipe	Reinforced Conc	15	None-Dry		None				No										
3	Unmarked-2	Low Priority	Located	Complete	MS4	August 9, 2019		Sunny	82			Ashby State @ Kyle Rd		Residential	Circular/Pipe	Reinforced Conc	15	None-Dry		None				No										
3	Unmarked-3	Low Priority	Located	Complete	MS4	August 13, 2019		Partly Cloudy	75	72	Trace			Residential	Circular/Pipe	Clay Tile	8	None-Wet		None				No										
4	Unmarked-4	Low Priority	Located	Complete	Private	July 8, 2020		Cloudy	72	72	0.35	Detention Pond Behind 208 Bishop Rd	North Nashua River MA81-02	Residential	Circular/Pipe	PVC	4	None-Dry		None														
3	Unnamed	Low Priority	Located	Complete	MS4	July 8, 2019		Partly Cloudy	75	48	1.37	Greenes Pond Dam on SE side of Bridge		Residential	Circular/Pipe	Clay Tile	8	None-Dry		None	None	None		No										

City of Fitchburg, Massachusetts
Massachusetts MS4 General Permit
Year 3 Annual Report
Reporting Period: July 1, 2020 – June 30, 2021

Appendix C – IDDE Catchment Investigations

ARCADIS

City of Fitchburg, Massachusetts
NPDES MS4 Compliance - Year 3 Annual Report
Illicit Discharge Detection and Elimination (IDDE) Program
Catchment Area C220 Pipe Inspection Database
Catchment Status: ONGOING INVESTIGATION

Catchment Area	Access Point StructureID	Street / Location	Inlet Direction	Connecting Structure ID	Pipe Link	Inspection Date	Invert Elevation (ft)	Diameter (in)	Material	Flow Conditions	Investigation Type	Ammonia (ppm)	Surfactants (ppm)	Chlorine (ppm)	Temperature (°F)	pH	Salinity (ppt)	Specific Conductivity (µS)	E. coli (Col/100ml)	Status	Comments
C220	DMH5525	NORTH STREET	Inlet	DMH5531	DMH5531-DMH5525	9/16/20	8.58	24	VCP	Flow - Trickle	Sampled Flow	0.00	0.20	0.00	67.3	7.38	0.00	150.6		Cleared	
C220	DMH5525	NORTH STREET	Outlet	DMH5525.1	DMH5525-DMH5525.1	7/29/20	8.92	24	VCP	Flow - Trickle	General Observation									Other - See Comments	Outgoing pipe
C220	DMH5525	NORTH STREET	Inlet	CB5523	CB5523-DMH5525	9/17/20	5.00	12	RCP	Dry	48h Sandbag - Wet, not enough to sample									Cleared	Rain during sandbag placement
C220	DMH5525	NORTH STREET	Inlet	UNK	UNK-DMH5525	7/29/20	3.58	6	VCP	Dry	General Observation									Cleared	Rain during sandbag placement
C220	DMH5525	NORTH STREET	Inlet	CB5529	CB5529-DMH5525	7/29/20	3.75	6	VCP	Dry	General Observation									Cleared	
C220	DMH5525	NORTH STREET	Inlet	CB5528	CB5528-DMH5525	7/29/20	4.17	12	RCP	Dry	General Observation									Cleared	
C220	DMH5525	NORTH STREET	Inlet	UNK	UNK-DMH5525	7/29/20	3.67	6	VCP	Dry	General Observation									Cleared	
C220	DMH5525	NORTH STREET	Inlet	DMH5549	DMH5549-DMH5525	7/29/20	6.08	12	RCP	Dry	48h Sandbag - Dry									Cleared	24 Hour Sandbag, evidence of wet pipe but bag was not wet
C220	DMH5525	NORTH STREET	Inlet	CB5527	CB5527-DMH5525	7/29/20	8.33	12	RCP	Dry	General Observation									Cleared	
C220	DMH5533	NORTH STREET	Inlet	DMH5623.1	DMH5623.1-DMH5533	7/29/20	8.08	24	VCP	Flow - Running	Sampled Flow	0.50	0.90	0.00	77.8	6.71	0.80	1,771.0		Suspect	
C220	DMH5533	NORTH STREET	Outlet	DMH5531	DMH5533-DMH5531	7/29/20	8.17	24	VCP	Flow - Running	General Observation									Other - See Comments	Outgoing pipe
C220	DMH5533	NORTH STREET	Inlet	CB5533.2	CB5533.2-DMH5533	7/29/20	3.67	6	PVC	Dry	General Observation									Cleared	Observed Dry, pipe does not cross sanitary system
C220	DMH5533	NORTH STREET	Inlet	DMH5534	DMH5534-DMH5533	8/13/20	7.50	12	VCP	Dry	48h Sandbag - Dry									Cleared	24 hour sandbag
C220	DMH5533	NORTH STREET	Inlet	CB5533.1	CB5533.1-DMH5533	7/29/20	3.75	6	PVC	Dry	General Observation									Cleared	Observed Dry, pipe does not cross sanitary system
C220	DMH5623.1	NORTH STREET	Inlet		-DMH5623.1																
C220	DMH6829	NORTH STREET	Inlet	DMH683	DMH683-DMH6829	7/29/20	4.17	16	HDPE	Flow - Running	Sampled Flow	0.05	0.15	0.00	81.6	6.76	0.10	298.0		Cleared	
C220	DMH6829	NORTH STREET	Outlet	DMH684	DMH6829-DMH684	7/29/20	4.63	18	RCP	Flow - Running	General Observation									Other - See Comments	Outgoing pipe
C220	DMH6829	NORTH STREET	Inlet	CB6828	CB6828-DMH6829	7/29/20	3.25	6	PVC	Dry	General Observation									Cleared	Observed dry, could not get sandbag in pipe
C220	DMH6829	NORTH STREET	Inlet	CB6825	CB6825-DMH6829	7/29/20	4.08	6	VCP	Dry	General Observation									Cleared	Observed Dry, pipe does not cross sanitary system
C220	DMH6829	NORTH STREET	Inlet	CB6826	CB6826-DMH6829	7/29/20	4.25	6	VCP	Dry	General Observation									Cleared	Observed Dry, pipe does not cross sanitary system
C220	DMH6829	NORTH STREET	Inlet	DMH6829.1	DMH6829.1-DMH6829	8/13/20	3.92	12	VCP	Dry	48h Sandbag - Dry									Cleared	24 hour sandbag
C220	DMH6829	NORTH STREET	Inlet	CB6827	CB6827-DMH6829	7/29/20	4.25	6	VCP	Dry	General Observation									Cleared	Observed Dry, pipe does not cross sanitary system

C220 Dry Weather Inspection Results:
E. Coli: 12,000 col/100mL
Ammonia: 0.20 ppm
Surfactants: 0.20 ppm
Chlorine: 0.00 ppm

DMH5525:
Mainline cleared with sampling on 9/16/2020. All other inlets observed dry on 7/29/2020 - 48h sandbagging abandoned due to rain event.

DMH5533:
Inlet drain lines to the east observed dry on 7/29/2020. Connection to DMH5534 also observed dry after 24 hour sand bagging.

LOCATION FOR FUTURE INVESTIGATION:
CCTV
Dye testing
Ongoing Sampling

DMH5533_DMH5623.1 Sampling Results (7/29/2020):
Ammonia: 0.50 ppm
Surfactants: 0.90 ppm
Chlorine: 0.00 ppm

Legend

- Outfall
- Catch Basin
- Drain Manhole

IDDE Pipe Status

- Problem
- Suspect
- No Evidence
- Other - See Comments
- Uninvestigated

Drainage Catchment

- Catchment Boundary

City of Fitchburg, MA
Illicit Discharge Detection and Elimination Program
ARCADIS

Catchment Area C220

N

0 40 80 160 Feet

C330 Dry Weather Inspection Results:
E. Coli: 4,100 col/100mL
Ammonia: 0.00 ppm
Surfactants: 0.15 ppm
Chlorine: 0.00 ppm

LOCATION FOR FUTURE INVESTIGATION:
Inspect common manholes prior to conducting further dry weather catchment investigation.

Legend
- Outfall
- Catch Basin
- Drain Manhole

IDDE Pipe Status
- Problem
- Suspect
- No Evidence
- Other - See Comments
- Uninvestigated
- Catchment Boundary

City of Fitchburg, MA
Illicit Discharge Detection and Elimination Program
ARCADIS

Catchment Area C330

0 225 450 Feet

City of Fitchburg, Massachusetts
NPDES MS4 Compliance - Year 3 Annual Report
Illicit Discharge Detection and Elimination (IDDE) Program
Catchment Area C401 Pipe Inspection Database
Catchment Status: CLEARED

Catchment Area	Access Point StructureID	Street / Location	Inlet Direction	Connecting Structure ID	Pipe Link	Inspection Date	Invert Elevation (ft)	Diameter (in)	Material	Flow Conditions	Investigation Type	Ammonia (ppm)	Surfactants (ppm)	Chlorine (ppm)	Temperature (°F)	pH	Salinity (ppt)	Specific Conductivity (uS)	E. coli (Col/100ml)	Status	Comments
C401	DMH9393	COOLIDGE PARK	Outlet	C401	DMH9141-DMH9068	9/16/20	7.92	30	RCP	Dry	General Observation									Uninvestigated	
C401	DMH9393	COOLIDGE PARK	Inlet	DMH9392	DMH9055-DMH9051	9/16/20	7.50	12	HDPE	Dry	24h Sandbag - Dry									Cleared	24 hour sandbag
C401	DMH9393	COOLIDGE PARK	Inlet	DMH9397	DMH5623.1-DMH5533	9/16/20	7.67	30	RCP	Dry	24h Sandbag - Dry									Cleared	24 hour sandbag
C401	DMH9393	COOLIDGE PARK	Inlet	CB9394	DMH4971-DMH 4981	9/16/20	4.75	12	RCP	Dry	24h Sandbag - Dry									Cleared	24 hour sandbag

Coolidge Park

CB3774

DMH2259

DMH2258

DMH2257

DMH2256

CB9398

DMH9397

CB9396

DMH9392

CB9391

DMH9393

CB9390

CB9394

DMH9389

DMH9387

C401

DMH1423

C401 Dry Weather Inspection Results(11/07/2019)
E. Coli: 5,100 col/100ml
Ammonia: 0.00 ppm
Surfactants: 0.15 ppm
Chlorine: 0.00 ppm

DMH9393:
Incoming lines cleared dry at key junction manhole on 9/16/20 with 48-hour sandbag

Legend

- Outfall
- Catch Basin
- Drain Manhole

IDDE Pipe Status

- Problem
- Suspect
- No Evidence
- Other - See Comments
- Uninvestigated

City of Fitchburg, MA
Illicit Discharge Detection and Elimination Program

ARCADIS

Catchment Area C401

N

0 30 60 120 Feet

City of Fitchburg, Massachusetts
NPDES MS4 Compliance - Year 3 Annual Report
Illicit Discharge Detection and Elimination (IDDE) Program
Catchment Area C427 Pipe Inspection Database
Catchment Status: ONGOING INVESTIGATION

Catchment Area	Access Point StructureID	Street / Location	Inlet Direction	Connecting Structure ID	Pipe Link	Inspection Date	Invert Elevation (ft)	Diameter (in)	Material	Flow Conditions	Investigation Type	Ammonia (ppm)	Surfactants (ppm)	Chlorine (ppm)	Temperature (°F)	pH	Salinity (ppt)	Specific Conductivity (uS)	E. coli (Col/100ml)	Status	Comments
C427	DMH9051	UPHAM STREET	Inlet	DMH9055	DMH9055-DMH9051	8/14/20	5.60	24	RCP	Flow - Trickle	Sampled Flow	0.70	0.30	0.00	79.8	7.28	0.10	4.3		Suspect	Ammonia & surfactants detected, most likely only from upstream sewer connection at 181 Albert Pl.
C427	DMH9051	UPHAM STREET	Inlet	CB9052	CB9052-DMH9051	8/14/20	5.10	18	RCP	Dry	48h Sandbag - Dry									Cleared	Dry pipe
C427	DMH9051	UPHAM STREET	Outlet	DMH1515	DMH9051-DMH1515	8/14/20	5.70	24	RCP	Flow - Trickle	General Observation									NA	
C427	DMH9068	JACKSON AVE	Inlet	DMH9141	DMH9141-DMH9068	8/14/20	10.40	18	RCP	Flow - Trickle	Sampled Flow	10.00	1.00	0.00	73.8	7.20	0.40	964.0		Problem	Dye tested DMH9141 where sewer service discharges to manhole, could not track dye to this pipe segment
C427	DMH9068	JACKSON AVE	Inlet	DMH9070	DMH9070-DMH9068	8/14/20	10.50	24	RCP	Wet - No Flow										Suspect	No sandbag placed due to standing water; upstream DMH also had standing water and sewage odors
C427	DMH9068	JACKSON AVE	Inlet	CB9138	CB9138-DMH9068	8/14/20	4.90	8	VCP	Dry	48h Sandbag - Dry									Cleared	
C427	DMH9068	JACKSON AVE	Inlet	DMH9136	DMH9136-DMH9068	8/14/20	6.50	12	RCP	Dry	48h Sandbag - Dry									Cleared	
C427	DMH9068	JACKSON AVE	Inlet	UNK	UNK-DMH9068	8/14/20	4.70	8	VCP	Dry	48h Sandbag - Dry									Cleared	
C427	DMH9068	JACKSON AVE	Outlet	DMH9065	DMH9068-DMH9065	8/14/20	10.80	24	RCP	Flow - Trickle	General Observation									NA	Outlet
C427	DMH9070	72 JACKSON AVE	Inlet	CB9072	CB9072-DMH9070	8/14/20	5.40	10	VCP	Dry	General Observation									Cleared	Dry CB connection, smell of sewage in DMH, sewer pipe joint running through DMH
C427	DMH9070	72 JACKSON AVE	Inlet	CB9073	CB9073-DMH9070	8/14/20	5.50	10	VCP	Dry	General Observation									Cleared	Dry CB connection, smell of sewage in DMH, sewer pipe joint running through DMH
C427	DMH9070	72 JACKSON AVE	Inlet	CB9074	CB9074-DMH9070	8/14/20	5.50	10	VCP	Dry	General Observation									Cleared	Dry CB connection, smell of sewage in DMH, sewer pipe joint running through DMH, capped pipe at bottom of manhole between inlet 3/4
C427	DMH9070	72 JACKSON AVE	Inlet	UNK	UNK-DMH9070	8/14/20	7.70	10	VCP	Dry	General Observation									Cleared	Dry connection, smell of sewage in DMH, sewer pipe joint running through DMH
C427	DMH9070	72 JACKSON AVE	Outlet	DMH9068	DMH9070-DMH9068	8/14/20	8.50	24	RCP	Wet - No Flow	General Observation									Suspect	8" of standing water, sewage smell
C427	DMH9141	181 ALBERT PLACE	Inlet	UNK	UNK-DMH9141	8/14/20	6.00	8	VCP	Dry	General Observation									Cleared	Pipe dry, cannot place sandbag due to location of inlet
C427	DMH9141	181 ALBERT PLACE	Inlet	CB9140	CB9140-DMH9141	8/14/20	3.60	6	HDPE	Dry	General Observation									Cleared	Pipe dry, cannot place sandbag due to location of inlet
C427	DMH9141	181 ALBERT PLACE	Inlet	UNK	UNK-DMH9141	8/14/20	5.60	8	VCP	Dry	General Observation									Cleared	Pipe dry, cannot place sandbag due to sediment in inlet
C427	DMH9141	181 ALBERT PLACE	Inlet	DMH9143	DMH9143-DMH9141	8/14/20	8.30	15	RCP	Wet - No Flow	General Observation									Suspect	Standing water
C427	DMH9141	181 ALBERT PLACE	Inlet	SEWER_SERVICE	SEWER_SERVICE-DMH9141	8/14/20	7.00	6	VCP	Flow	General Observation									Problem	Sewer service connecting to #181
C427	DMH9141	181 ALBERT PLACE	Inlet	CB9139	CB9139-DMH9141	8/14/20	3.60	6	HDPE	Dry	General Observation									Cleared	Pipe dry, cannot place sandbag due to location of inlet
C427	DMH9141	181 ALBERT PLACE	Outlet	DMH9068	DMH9141-DMH9068	8/14/20	8.40	18	RCP	Wet - No Flow	General Observation									Problem	Standing water
C427	DMH9143	ALBERT PLACE	Inlet	UNK	UNK-DMH9143	8/14/20	4.50	8	VCP	Dry	48h Sandbag - Dry									Cleared	Dry pipe
C427	DMH9143	ALBERT PLACE	Inlet	UNK	UNK-DMH9143	8/14/20	7.80	15	HDPE	Wet - No Flow	General Observation									Other - See Comments	Standing water
C427	DMH9143	ALBERT PLACE	Inlet	UNK	UNK-DMH9143	8/14/20	7.60	12	VCP	Dry	General Observation									Cleared	Pipe dry, cannot place sandbag due to location of inlet
C427	DMH9143	ALBERT PLACE	Inlet	UNK	UNK-DMH9143	8/14/20	4.20	8	RCP	Dry	General Observation									Cleared	Pipe dry, cannot place sandbag due to sediment in inlet
C427	DMH9143	ALBERT PLACE	Inlet	UNK	UNK-DMH9143	8/14/20	5.40	8	PVC	Dry	48h Sandbag - Dry									Cleared	
C427	DMH9143	ALBERT PLACE	Inlet	DMH9141	DMH9141-DMH9143	8/14/20	7.90	15	RCP	Wet - No Flow	General Observation									Other - See Comments	Standing water, could not dye test to confirm connectivity, SMH next to DMH also no flow and could not dye test; DMH has possible overflow connection going to SMH

DMH9143:
Standing water in drain manhole, could not dye test to confirm connectivity. Sanitary sewer manhole adjacent to DMH and possible overflow connection going to sanitary sewer.

181 Albert Place (8/14/2020)
Sewer service discharging into DMH9141. Need to review combined sewer separation work in this location.

DMH9068_DMH9141 Sampling Results (8/14/2020)
Ammonia: 10.0 ppm
Surfactants: 1.00 ppm
Chlorine: 0.00 ppm
Potential Source: sewer connection at 181 Albert Place

DMH9070:
Inlet catch basin lines inspected dry. Sewage smell in drain manhole and sanitary sewer joint running through drain manhole.

DMH9051_DMH9055 Sampling Results (8/14/2020)
Ammonia: 0.70 ppm
Surfactants: 0.30 ppm
Chlorine: 0.00 ppm
Potential Source: upstream sewer connection at 181 Albert Place

C427 Dry Weather Inspection Results(7/8/2019)
E. Coli: 3,000 col/100ml
Ammonia: 0.40 ppm
Surfactants: 0.20 ppm
Chlorine: 0.00 ppm

DMH9143
Albert Pl
DMH9141
CB9140
CB9139
CB9074
CB9073
DMH9070
CB9072
CB9069
DMH9068
CB9138
Jackson Ave
DMH9136
DMH9135
Kelly Ave
Phelps St
DMH9065
Upham St
CB9063
DMH9062
DMH9060
Market Basket
Speedee Oil Change & Auto Service
Big Lots
DMH
CB1154
DMH1155
John Fitch Hwy
DMH1151
CB1152
DMH1150
CB1149
DMH9055
DMH9051
CB9052
CB9053
CB1136
DMH1143
CB1142
DMH1140
CB1141
C427
CB1135
DMH1133

Legend
- Outfall
- Catch Basin
- Drain Manhole

IDDE Pipe Status
- Problem
- Suspect
- No Evidence
- Other - See Comments
- Uninvestigated
- Catchment Boundary

City of Fitchburg, MA
Illicit Discharge Detection and Elimination Program
ARCADIS

Catchment Area C427

0 140 280 Feet

City of Fitchburg, Massachusetts
NPDES MS4 Compliance - Year 3 Annual Report
Illicit Discharge Detection and Elimination (IDDE) Program
Catchment Area C444 Pipe Inspection Database
Catchment Status: ONGOING INVESTIGATION

Catchment Area	Access Point StructureID	Street / Location	Inlet Direction	Connecting Structure ID	Pipe Link	Inspection Date	Invert Elevation (ft)	Diameter (in)	Material	Flow Conditions	Investigation Type	Ammonia (ppm)	Surfactants (ppm)	Chlorine (ppm)	Temperature (°F)	pH	Salinity (ppt)	Specific Conductivity (µS)	E. coli (Col/100ml)	Status	Comments
C444	DMH5249	NORTH STREET @ GREEN	Inlet	CB5246	CB5246-DMH5249	11/20/20	4.00	6	VCP	Dry	General Observation									Cleared	
C444	DMH5249	NORTH STREET @ GREEN	Inlet	DMH5205	DMH5205-DMH5249	12/3/20	5.00	30	RCP	Dry	24 Hour Sandbag									Cleared	
C444	DMH5249	NORTH STREET @ GREEN	Inlet	DMH5248	DMH5248-DMH5249	11/20/20				Dry	General Observation									Cleared	
C444	DMH5249	NORTH STREET @ GREEN	Inlet	CB5247	CB5247-DMH5249	11/20/20	6.33	12	VCP	Dry	General Observation									Cleared	
C444	DMH5249	NORTH STREET @ GREEN	Inlet	DMH5248	DMH5248-DMH5249	11/20/20	8.08	30	RCP	Flow - Running	General Observation									Cleared	Sample was taken upstream as there was not clear evidence in MH of moving water
C444	DMH5249	NORTH STREET @ GREEN	Inlet	DMH5250	DMH5250-DMH5249	11/20/20	4.25	12	VCP	Dry	General Observation									Cleared	
C444	DMH5255	NORTH STREET	Inlet	UNK	UNK-DMH5255	11/20/20	6.42	12	VCP	DRY	General Observation									Cleared	
C444	DMH5255	NORTH STREET	Inlet	UNK	UNK-DMH5255	11/20/20	3.92	12	VCP	CAPPED	General Observation									Cleared	
C444	DMH5255	NORTH ST. SOUTH OF CONGRESS	Inlet	DMH5257	DMH5257-DMH5255	11/20/20			VCP	Flow -Running	Sampled	0.10	0.45	0.00	56.1	7.85	1.10	2,150.0		Suspect	
C444	DMH5316	WILLOW @ GREEN	Inlet	DMH5319	DMH5319-DMH5316	11/20/20	9.29	30	RCP	Flow - Running	Sampled	0.05	0.40	0.00	57.2	7.58	1.00	2,110.0		Suspect	
C444	DMH5316	WILLOW ST @ GREEN ST	Inlet	DMH5318	DMH5318-DMH5316	12/2/20	3.75	6	VCP	DRY	General Observation									Cleared	
C444	DMH5316	WILLOW ST @ GREEN ST	Inlet	DMH5314	DMH5314-DMH5316	12/2/20	5.17	20	RCP	DRY	24 Hour Sandbag									Cleared	Sandbag dry after 24h
C444	DMH5316	WILLOW ST @ GREEN ST	Inlet	CB5315	CB5315-DMH5316	12/2/20	3.67	10	VCP	DRY	General Observation									Cleared	
C444	DMH5325.1	Willow @ MORRIS	Inlet	DMH5325.2	DMH5325.2-DMH5325.1	11/20/20															
C444	DMH5336	Willow Street	Outlet	DMH6025	DMH5336-DMH6025	11/20/20			VCP	Flow - Running	General Observation										
C444	DMH5336	Willow Street	Inlet	DMH5325	DMH5325-DMH5336	11/20/20															

DMH5255:
Incoming drain lines to the east cleared dry with visual inspection.
DMH5257 connecting line test kit results (high surfactants):
Ammonia: 0.10 ppm
Surfactants: 0.45 ppm
Chlorine: 0.00 ppm

DMH5249:
All incoming drain lines cleared dry with visual inspection and 24-hour sand bagging in DMH5205 connecting line.

DMH5316:
Incoming drain lines cleared dry with visual inspection and 24 hour sand bagging. **DMH5319** connecting line test kit results (high surfactants):
Ammonia: 0.05 ppm
Surfactants: 0.40 ppm
Chlorine: 0.00 ppm

C444 Dry Weather Inspection Results(6/11/2020)
E. Coli: 8,088 col/100ml
Ammonia: 2.15 ppm
Surfactants: 0.40 ppm
Chlorine: 0.00 ppm

Legend

- Outfall
- Catch Basin
- Drain Manhole

IDDE Pipe Status

- Problem
- Suspect
- No Evidence
- Other - See Comments
- Uninvestigated

City of Fitchburg, MA
Illicit Discharge Detection and Elimination Program
ARCADIS

Catchment Area C444

N

0 65 130 260 Feet

City of Fitchburg, Massachusetts
Massachusetts MS4 General Permit
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Appendix D – Illicit Connections Inventory*

*Illicits for this reporting period and the inventory can be found on the Stormwater Webpage.

ARCADIS

City of Fitchburg, Massachusetts
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Appendix E – Sanitary Sewer Overflow Events

ARCADIS

City of Fitchburg
Department of Public Works

Sanitary Sewer Overflow (SSO) Inventory
2013 through 2021

Year	Location	Location of Discharge	Did SSO Enter Surface Water or MS4	Date Discovered	Time Discovered	Date Stopped	Time Stopped	Estimated Volume (gal)	Description of event with known or suspected causes	Mitigation and Corrective measures
2021	317 Kimball Street	Catch basin (MS4) to receiving water	North Nashua River	6/26/2021	6:14 PM	6/26/2021	9:00 PM	5000	Sewer system blockage due to root intrusion, rags, and sediment.	Jetted line and relieved blockage. Area was washed down and catch basin was cleaned with vac truck to bottom of the sump.
	8 George Street	Backup into property basement	No release to surface water	3/1/2021	1:11 PM	3/1/2021	2:05 PM	150	Sewer system blockage.	Jetted line and relieved blockage.
	147 Water Street	Catch basin (MS4) to receiving water	North Nashua River	2/18/2021	11:00 AM	2/18/2021	2:00 PM	4500	Sewer system blockage due to pipe collapse.	Jetted line to remove blockage. Discovered 2 collapsed pipes, which were repaired with spot repairs.
	34 Ash Street	Ground surface	No release to surface water	2/11/2021	8:00 AM	2/11/2021	10:30 AM	15	Sewer system blockage due to root intrusion.	Jetted line and removed blockage. Mnahole vaccumed and debris removed.
	9 Harrison Avenue	Backup into property basement	No release to surface water	2/3/2021	2:00 PM	2/3/2021	3:00 PM	3	Sewer system blockage due to root intrusion and rags.	Jetted line and removed blockage. Rags and roots and debris were removed from the pipe.
	500 Beech Street	Backup into property basement	No release to surface water	1/28/2021	2:30 PM	1/28/2021	3:00 PM	9000	Surcharged manhole and basement backup due to blockage in sewer line during CSO separation project.	Bypass pumping was set up and excavation was conducted in order to free the blockage.
	551 Electric Ave	Backup into property basement	No release to surface water	1/25/2021	4:30 PM	1/25/2021	6:30 PM	2000	Sewer system blockage due to rags in sewer line.	Jetted line and removed blockage. Rags were removed from the pipe.
	634 Ashby State Road	Back yard	No release to surface water	1/15/2021	11:30 AM	1/15/2021	11:00 AM	200	Broken 4" PVC force main at clean out wye	Pumped out manhole and determined clean-out wye in the manhole was leaking from the joint. Force main was repaired to fix leak.
	17 Eureka Street	Backup into property basement	No release to surface water	1/13/2021	5:30 PM	1/14/2021	8:00 PM	200	Sewer system blockage.	Jetted line and relieved blockage.
2020	460 Ashburnham Street	Catch basin that ties into sanitary sewer	No release to surface water	12/14/2020	8:30 AM	12/14/2020	9:00 AM	2000	Sewer system blockage.	Jetted line and relieved blockage.
	50 Laurel Street	Ground surface	No release to surface water	11/19/2020	11:00 AM	11/19/2020	12:30 PM	8000	Sewer system backup due to pipe collapse.	Jetted line and stopped blockage. Pipe reconstructed.
	47 Arlington Street	Backup into property basement	No release to surface water	10/28/2020	11:30 AM	10/28/2020	12:30 PM		Sewer system backup due to brick falling out of manhole chimney into invert.	Jetted line and removed blockage. Brick was removed from the invert.
	43 Patton Street	Backup into property basement	No release to surface water	6/8/2020	10:00 AM	6/8/2020	10:30 AM	25	Pipe collapse/hole in pipe where the Water Department installed a fire hydrant several years ago.	Jetted line and removed blockage. Repaired pipe on 6/23/20.
	28 Phillips Avenue	Backup into property basement	No release to surface water	5/15/2020	11:00 AM	5/15/2020	12:00 PM	20	Sewer system backup due to rags and accumulated grease.	Jetted line and removed blockage. Rags were removed from the pipe.
	31 Gillis Court	Backup into property basement	No release to surface water	4/14/2020	1:15 PM	4/14/2020	2:00 PM	150	Sewer system blockage due to rags and poorly pitched sanitary sewer lateral connection.	Jetted line and removed blockage. Rags were removed from the pipe along with black grease.
	228 Plymouth Street	Sanitary sewer manhole to catch basin to receiving water	North Nashua River	3/11/2020	3:10 PM	3/11/2020	3:30 PM	30	Sewer system blockage due to rags.	Jetted line and removed blockage. Rags were removed from the pipe along with black water indicating blockage has been forming for quite some time.
	133 Bel Air Drive	Backup into property basement	No release to surface water	3/2/2020	1:00 PM	3/2/2020	2:00 PM	3	Sewer system blockage due to debris in a poorly pitched sanitary sewer lateral connection.	Jetted line three times and removed blockage, grease, and rags. Added manhole to the problem area checklist.
2019	136 Upham Street	Sanitary sewer manhole to ground surface	No release to surface water	12/12/2019	8:41 AM	12/12/2019	9:00 AM	20	Sewer system blockage due to rags hung up on debris from a paving project.	Sucked down liquid in manhole, jetted line, and cleaned entire line 1,000 feet to trunk sewer. Conducted two follow up inspections following the incident to ensure no issues.
	1164 John Fitch Highway	Sanitary sewer manhole to ground surface	Putts Pond	11/14/2019	10:00 AM	11/14/2019	10:30 AM	10,000	Sewer system blockage due to rags and roots in manhole.	Sucked down liquid in manhole, jetted line, and cleared out roots. Added heavy amount of root killer.
	168 Lunenburg Street	Sanitary sewer manhole to ground surface	No release to surface water	10/15/2019	11:00 AM	10/15/2019	11:30 AM	5	Sewer system blockage due to rags and roots in manhole.	Sucked down liquid in manhole, jetted line, and cleared out roots. Root killer will be added until the manhole is replaced next construction season.
	133 Water Street	Catch basin (MS4) to receiving water	North Nashua River	7/12/2019	1:30 PM	7/12/2019	2:15 PM	60-80	Sewer system blockage due to a brick and pieces of mortar, in addition to rocks and debris in pipe likely from a break upstream.	Jetted line and cleared blockage.
	Hasset Street at Albee Street	Catch basin (MS4) to receiving water	North Nashua River	6/24/2019	10:00 AM	6/24/2019	10:30 AM	60	Sewer system blockage due to a brick, likely from a lining project upstream a few years prior.	Jetted line and cleared blockage.
	1000 John Fitch Highway	Ground surface	No release to surface water	4/13/2019	11:10 AM	4/13/2019	12:00 PM	2,500	Sewer system blockage due to asphalt chunks from upstream manhole that appeared to have been dislodged, likely by plows during the winter.	Jetted line and cleared blockage.
	88 Miami Street	Backup into property basement	No release to surface water	4/10/2019	7:20 AM	4/10/2019	9:30 AM	5	Sewer system blockage due to piece of brick and rock with mortar attached to it and rags.	Jetted line and cleared blockage.
	33 Darlene Drive	Backup into property basement	No release to surface water	4/8/2019	9:40 AM	4/8/2019	10:00 AM	4	Sewer system blockage due to flat pitch, sags, rags, and solids.	Line was jetted and cleaned out. City then followed up with a CCTV inspection and noted flat pitch and sags.
	881 Main Street	Direct to receiving water	North Nashua River	3/18/2019	8:44 AM	3/18/2019	8:44 AM	502,320	Rain event, blockage in overflow regulator CSO-032 due to road sand and debris.	Jetted and cleared sand and debris from regulator manhole CSO-032
	Water Street at Nashua River	Direct to receiving water	North Nashua River	3/18/2019	7:00 AM	3/18/2019	7:20 AM	470,000	Rain event, blockage in overflow regulator CSO-039 due to road sand and debris.	Jetted and cleared sand and debris from regulator manhole CSO-039
	71 Rodiman Avenue	Backup into property basement	No release to surface water	3/16/2019	5:15 PM	3/16/2019	5:15 PM	1	Sewer system blockage due to flat pitch.	Line was jetted and cleaned out. City then followed up with a CCTV inspection and noted no defects in pipe, just flat pitch. Homeowner said it has been years but in the past he would back up often.
	56 Elm Street	Backup into property basement	No release to surface water	3/4/2019	12:30 PM	3/4/2019	1:00 PM	40	Sewer system blockage due to rocks, asphalt, and other debris.	Downstream manhole was cleaned of rocks and brick debris, and branch sewer was jetted that was surcharging to relieve blockage.
	12 Jerry Street	Backup into property basement	No release to surface water	2/17/2019	9:00 AM	2/17/2019	10:00 AM	315	Sewer system blockage due to grease.	Jetted line and cleared blockage, area on list of problem areas.
	491 Pearl Street	Backup into property basement	No release to surface water	1/28/2019	11:10 AM	1/28/2019	12:00 PM	5	Sewer system blockage due to grease.	Jetted line and cleared blockage.
	400 Rollstone Road	Direct to receiving water	Sand Brook	1/18/2019	10:30 AM	1/18/2019	10:30 AM	100,000	Sewer system blockage due to brick falling into system from upstream manhole chimney.	Cleaned out junction manhole, removed one brick and other debris.
	715 Westminster Street	Catch basin (MS4) to receiving water	North Nashua River	1/7/2019	12:45 PM	1/7/2019	4:00 PM	25,000	Sewer system blockage caused by rags.	Jetted line and pulled out 3-foot long by 1-foot tall blockage of rags.
2018	192 Marshall Road	Ground surface	No release to surface water	12/3/2018	10:00 AM	12/3/2018	10:15 AM	40	Sewer system blockage caused by bricks dropped into sewer by contractor who had recently paved road.	Jetted line and pulled out two bricks.
	101 Fitchburg Road, Westminster	Ground surface	No release to surface water	9/19/2018	6:30 PM	9/19/2018	7:30 PM	3,000	Pipe collapse; MassDOT put guardrail through PVC force main during road reconstruction a few years prior.	Shut off pumps at pump station, fixed pipe.
	569 Main Street	Backup into property basement	No release to surface water	6/20/2018	4:00 PM	6/18/2018	8:00 PM	1,500	Rain event, insufficient capacity in system	Checked manholes and main lines for debris, all clear.
	212 Marshall Street	Backup into property basement	No release to surface water	6/20/2018	4:00 PM	6/18/2018	8:00 PM	800	Rain event, insufficient capacity in system	Checked manholes and main lines for debris, all clear.
	410 Cathy Street	Backup into property basement	No release to surface water	2/5/2018	5:00 PM	2/5/2018	5:00 PM	10	Sewer system blockage, pipe in poor condition.	Cleared blockage, added area to problem area check list.
2017	33 Shelly Avenue	Backup into property basement	No release to surface water	10/30/2017	7:30 AM	10/30/2017	7:30 AM	10	Rain event, insufficient capacity in system. Homeowners use of flapper valve lead to water in basement.	Back-flow preventer was installed and working properly.
	1 Oak Hill Road	Backup into property basement	No release to surface water	10/30/2017	8:00 AM	10/30/2017	8:00 AM	2,000	Rain event, insufficient capacity in system	Mainline flow was good. Additional combined sewer separation upstream may help alleviate surcharging.
	8 Crescent Heights	Backup into property basement	No release to surface water	10/3/2017	12:00 PM	10/3/2017	12:00 PM	15	Sewer system blockage	Excavation was conducted, line was cleaned, jetted, inspected, and repaired.
	10 Jerry Street	Ground surface	No release to surface water	4/20/2017	2:30 PM	4/20/2017	3:30 PM	500	Sewer system blockage	Blockage was freed after debris removal, puddling sewerage was sucked up with vactor truck.
	22 Prospect Street	Catch basin (MS4) to receiving water	North Nashua River	4/12/2017	5:00 PM	4/13/2017	8:00 AM	5,000	Pipe collapse	Bypass setup morning after SSO was discovered, collapsed pipe was repaired.
	22 Davis Street	Ground surface	No release to surface water	4/11/2017	3:30 PM	4/12/2017	8:00 AM	2,000	Root Intrusion	Jetting of line was unsuccessful. Line was cleared the following morning after roots were cut free.
	396 Fifth Mass Turnpike	Ground surface; Direct to receiving water	Flagg Brook	2/28/2017	11:00 AM	2/28/2017	2:30 PM	21,000	Pipe collapse	Bypass was setup and stayed in place until following morning when the repair was made to the cast iron siphon.
	59 Upham Street	Ground surface	No release to surface water	1/26/2017	10:00 AM	1/26/2017	10:30 AM	200	Sewer system blockage due to rocks, asphalt, and other debris	Line was jetted and debris was cleared and disposed of; line was completely cleared to main trunk sewer.
	72 Jackson Avenue	Ground surface	No release to surface water	1/8/2017	2:30 AM	1/8/2017	3:30 AM	300	Sewer system blockage due to rocks, asphalt, and other debris	Line was jetted and debris was vacuumed up and disposed of properly.
	11 Hardy Passway	Ground surface	No release to surface water	1/7/2017	11:30 AM	1/7/2017	1:30 PM	500	Sewer system blockage due to rocks, asphalt, and other debris	Line was jetted and debris was vacuumed up and disposed of properly. Line added to priority cleaning list.
2016	1153 John Fitch Highway	Catch basin (MS4) to receiving water	Falulah Brook	12/25/2016	10:30 PM	12/26/2016	9:00 AM	4,000	Sewer system blockage	Downstream manhole was jetted and blockage was relived. Roots were cut from main line.
	31 Olin Drive	Backup into property basement	No release to surface water	12/16/2016	3:00 PM	12/16/2016	3:30 PM	30	Sewer system blockage caused by a root ball downstream of the home at a defective wye service connection.	Blockage was relived via water jetting. Roots could not be cut out due to deflected clay pipe joints. Manhole installed Spring 2017 at lateral connection at the summit of the line.
	545 Westminster Street	Direct to receiving water	North Nashua River	11/14/2016	1:00 PM	11/14/2016	2:00 PM	5,400,000	Initially notified of algae growth on 10/26/2016. After multiple investigations a sewer system blockage was found at the intersection of Route 2A and Route 31.	Rag ball blockage was relived via jetting, restoring normal operations. Pipe repaired in following weeks.
	153 Fairmount	Backup into property basement	No release to surface water	11/4/2016	1:00 PM	10/21/2016	8:00 PM	300	Rain event	Surcharging subsided with rain event.
	14 Wallace Avenue	Backup into property basement	No release to surface water	11/2/2016	3:30 PM	10/21/2016	8:00 PM	1,870	Rain event, insufficient capacity in system	Surcharging subsided with rain event.
	400 Summer Street	Backup into property basement	No release to surface water	10/27/2016	1:30 PM	10/21/2016	8:00 PM	3,800	Rain event, insufficient capacity in system	Surcharging subsided with rain event. City will install backflow preventer in owner's service lateral.
	187 Fairmount Street	Backup into property basement	No release to surface water	10/26/2016	2:00 PM	10/21/2016	8:00 PM	N/A	Rain event, sewer system blockage	Surcharging subsided with rain event. City will install backflow preventer in owner's service lateral at owner's requests.
	40 Ray Avenue	Backup into property basement	No release to surface water	10/24/2016	4:30 PM	10/24/2016	4:30 PM	300	Rain event, insufficient capacity in system	Unmaintained backflow preventer didn't work properly causing water to backup into basement.
	70 Benson Street	Catch basin (MS4) to receiving water	Unnamed intermittent stream	10/24/2016	10:45 AM	10/24/2016	12:50 PM	162,000	Rain event, sewer system blockage of bricks and debris wedged into pipe caused water to come out of manhole cover. Manhole had been overflowing since 10/22/16 at 7 AM. Majority of sewage was released into a very large flat rip-rapped area and infiltrated into ground.	Blockage was cleared by water jetting.
	33 Shelly Avenue	Backup into property basement	No release to surface water	10/24/2016	9:30 AM	10/21/2016	7:00 PM	3,000	Rain event, insufficient capacity in system	City installed backflow preventer in this location sometime in following weeks to prevent future SSO's.
	29 Goodwin Street	Ground surface	No release to surface water	9/29/2016	11:00 AM	9/29/2016	1:00 PM	20	Sewer system blockage due to size transition in pipe (10 inch diameter to 6 inch). Sewage ran down street 10 feet and infiltrated into grass.	Blockage was cleared with jetter, debris was removed, and roots were cut out of pipe.
	132 Green Street	Backup into property basement	No release to surface water	9/27/2016	5:00 PM	9/27/2016	5:30 PM	10	Sewer system blockage, root intrusion. Resident claims lateral was clear but sewage was still entering basement. Sewer collections team jetted mainline and pulled back debris. Baby wipe build up appears to have cause blockage.	Blockage was cleared with jetter. Considerations for putting extra manhole to provide access to both ends of main line were made.
	Water Street at Walnut (CSO-039)	Direct to receiving water	North Nashua River	6/21/2016	1:00 PM	6/21/2016	2:00 PM	577,000	After a rain event the SSO was discovered during routine checks and was caused by sand/grit and rags blocking the base flow outlet pipe of the CSO regulator.	The blockage was cleared and the structure was cleaned with a jetter/vacuum truck. All catch basin sumps upstream were cleaned.
	1 Delisle Street (Park Hill Park)	Ground surface	No release to surface water	3/1/2016	2:00 PM	3/1/2016	3:00 PM	150	Sewer system blockage; 6 to 12 inch sized rip-rap stones were found in sewer manhole causing blockage. Sewage from SSO percolated into ground around surcharged manhole.	The rip-rap was removed via a catch basin clamshell cleaner truck, vactor truck, and manual labor. Sewer main up and downstream of the block was cleaned and inspected with camera. City will install a locking frame on manhole to prevent unauthorized access and debris.

Year	Location	Location of Discharge	Did SSO Enter Surface Water or MS4	Date Discovered	Time Discovered	Date Stopped	Time Stopped	Estimated Volume (gal)	Description of event with known or suspected causes	Mitigation and Corrective measures
2015	10 Jerry Street	Ground surface	No release to surface water	2/11/2016	10:00 AM	2/11/2016	11:00 AM	1,000	Sewer system blockage due to bricks, rocks, and a tire-chock block.	Blockage relieved by jetting main line and cleaning out SMH. Crew vactored up sewage that had pooled on road, remaining sewage percolated into ground.
	65 Fredette Street	Ground surface; Backup into basement	No release to surface water	2/10/2016	10:30 PM	2/10/2016	11:30 PM	2,000	Sewer system blockage due to bricks. Homeowner pumped sewage into backyard where it percolated into ground.	Main line was jetted. 25 bricks were removed from sewer. Repairs were made to failing manhole where the bricks originated.
	130 South Street	Catch basin (MS4) to receiving water	North Nashua River	12/15/2015	Unknown	12/15/2015	Unknown	Unknown	Resident discharging gray water from basement via pipe protruding from foundation wall.	Notified Board of Health for enforcement action, worked with homeowner to correct.
	444 Franklin Street	Backup into property basement	No release to surface water	11/10/2015	6:45 AM	11/10/2015	6:45 AM	Unknown	Sewer system blockage in main line due to protruding tap.	Line was jetted and blockage was cleared.
	300' West of 50 Stoneybrook Road	Catch basin (MS4) to receiving water	Unnamed brook	10/14/2015	10:00	10/15/2015	2:00 PM	2,000	Leaking steel sewer force main. The line was jetted which led to short relief period. Leak continued so the pump station was shut down.	Replaced 8 feet of sewer force main. Condition assessment was conducted on the sewer force main to determine if any other repairs or replacements needed to be made.
	149 High Street	Backup into property basement	No release to surface water	10/5/2015	Unknown	10/5/2015	Unknown	Unknown	Sewer system blockage and pipe collapse.	Rooter team snaked line but only up to 80 ft. where they could not go any further. Suspected pipe had been crushed or broken. Excavation of area and repair of pipe was done.
	40 Ray Avenue	Backup into property basement	No release to surface water	9/30/2015	Unknown	9/30/2015	Unknown	Unknown	Rain event caused sewer surcharging.	Surcharging subsided with rain event.
	35 Proctor Avenue	Backup into property basement	No release to surface water	9/30/2015	10:45 AM	9/30/2015	11:45 AM	16,000	Rain event; Heavy inflow to sewer system due to torrential rains surcharged sewer in street. Blockage caused by debris in sewer main that originated from newly installed sewer.	Surcharging subsided with rain event. Investigation of storm drains to see if a blockage was the reason for transfer from storm sewer to sanitary sewer.
	667 Westminster Street	CB and 1000' of pipe (MS4) to receiving water	North Nashua River	6/20/2015	9:00 AM	6/24/2015	9:00 AM	205,000	Multiple sewer system collapses in same area over 4 day period. 8-inch VC pipe constructed on ledge was shaken apart by vibratory compactor during paving project 2 weeks prior. Sewage was released onto ground surface and into catch basin.	Located collapse with camera truck and called in on-call services contractor. Multiple collapses in area over 4 day period required multiple temporary fixes leading to permanent fix.
	54 Fredette Street	Backup into property basement	No release to surface water	2/10/2015	10:00 AM	2/10/2015	3:00 PM	200	Sewer system blockage of 8 inch VC pipe.	Vac truck cleared blockage, pipe was cleaned. Attempt to CCTV was made however protruding lateral in way. Plans for lateral to be cut out after weather improved were made.
	55 Fredette Street	Backup into property basement	No release to surface water	2/10/2015	10:00 AM	2/10/2015	3:00 PM	50	Sewer system blockage of 8 inch VC pipe.	Vac truck cleared blockage, pipe was cleaned. Attempt to CCTV was made however protruding lateral in way. Plans for lateral to be cut out after weather improved were made.
2014	John Fitch Highway at Woodbury Ave	Ground; Catch basin (MS4) to detention basin	No release to surface water	11/19/2014	10:15 PM	11/19/2014	10:40 PM	2,000	Caused by a failed bypass pumping system. The bypass system was being transferred from pump 1 to pump 2 and with the valve not being closed properly and the pump being brought online not primed properly the SSO occurred.	An employee of the company that had installed the pump figured out the problem and closed the valve. The site of the SSO was cleaned.
	285 Main Street	Backup into property basement	No release to surface water	7/27/2014	Unknown	7/27/2014	Unknown	2,000	Sewer system blockage. Contractor didn't get proper information from engineering firm during project leading to blockage in sewer lateral.	City assisted the contractor in clearing the blockage. Rooterman vacuumed the SSO into their vactor truck and decanted into a sewer manhole on Day St.
	95 Goodrich Street	Backup into basement; Ground surface	No release to surface water	7/7/2014	5:00 PM	7/7/2014	5:00 PM	200	Rain event, insufficient capacity. 1.1 inches of rain in 20 minutes too much capacity for system under construction. Homeowner bailed the sewage onto the back lawn where it infiltrated the ground.	Contractor made temporary modifications to system to utilize more capacity in storm drain.
	96 St Bernard St	Backup into basement; Ground surface	No release to surface water	7/7/2014	5:00 PM	7/7/2014	5:00 PM	1,000	Rain event, insufficient capacity. 1.1 inches of rain in 20 minutes too much capacity for system under construction. Homeowner bailed the sewage onto the back lawn where it infiltrated the ground.	Contractor made temporary modifications to system to utilize more capacity in storm drain.
	254/256 Boutelle Street	Backup into basement; Ground surface	No release to surface water	7/7/2014	5:00 PM	7/7/2014	5:00 PM	400	Rain event, insufficient capacity. 1.1 inches of rain in 20 minutes too much capacity for system under construction. Homeowner bailed the sewage onto the back lawn where it infiltrated the ground.	Contractor made temporary modifications to system to utilize more capacity in storm drain.
	264 Boutelle Street	Backup into basement; Ground surface	No release to surface water	7/7/2014	5:00 PM	7/7/2014	5:00 PM	200	Rain event, insufficient capacity. 1.1 inches of rain in 20 minutes too much capacity for system under construction. Homeowner bailed the sewage onto the back lawn where it infiltrated the ground.	Contractor made temporary modifications to system to utilize more capacity in storm drain.
	276 Boutelle Street	Backup into basement; Ground surface	No release to surface water	7/7/2014	5:00 PM	7/7/2014	5:00 PM	500	Rain event, insufficient capacity. 1.1 inches of rain in 20 minutes too much capacity for system under construction. Homeowner bailed the sewage onto the back lawn where it infiltrated the ground.	Contractor made temporary modifications to system to utilize more capacity in storm drain.
	300 Boutelle Street	Backup into basement; Ground surface	No release to surface water	7/7/2014	5:00 PM	7/7/2014	5:00 PM	200	Rain event, insufficient capacity. 1.1 inches of rain in 20 minutes too much capacity for system under construction. Homeowner bailed the sewage onto the back lawn where it infiltrated the ground.	Contractor made temporary modifications to system to utilize more capacity in storm drain.
	4 Maverick Street	Backup into property first floor and basement	No release to surface water	6/26/2014	3:00 AM	6/26/2014	3:00 AM	200	Rain event, insufficient capacity, sewer system blockage. Temporary connection due to construction was insufficient for combined sewer. Sewage emptied into first floor and drained into basement.	Contractor made a permanent connection to existing combined sewer.
	Boutelle Street at St Bernard Street	Ground surface	No release to surface water	5/17/2014	5:45 AM	5/17/2014	5:45 AM	1,000,000	Rain event. Revoli Construction installed a temporary connection that was undersized and restricted flow causing SSO to exit manhole and run down the street before infiltrating the ground. Sewage also entered a few basements of surrounding properties.	Surcharging subsided with rain event. City met to discuss measures to be taken. Included better plans for temporary connections to be provided by Revoli Construction.
	65 Fredette Street	Ground; CB and 5,230' (MS4) to receiving water	Nashua River	2/12/2014	5:00 PM	2/12/2014	5:00 PM	5,000	Sewer system blockage of 8 inch VC pipe in street lead to backup in property basement which was pumped into driveway and eventually entered a catch basin which brought it to the Oak Hill Road bridge outfall.	Vac truck cleared blockage. Collections crew cleaned pipe and checked it the following day.
	75 Walnut Street	Direct to receiving water	North Nashua River	1/11/2014	Unknown	1/29/2014	Unknown	1,800	Sewer system collapse; Large block of ice knocked manhole off its base in river. Private lateral assumed to come loose concurrently.	Blue Diamond Construction hired to fix manhole. Lateral reconnected on 1/29/2014
2013	66 Thorndike Street	Backup into basement; Ground surface	No release to surface water	12/16/2013	10:30 AM	12/16/2013	10:30 AM	500	Sewer system blockage in street due to 8 inch VC pipe collapse. Plumber bailed 500 gallons into backyard where it percolated into ground underneath snow.	Vac truck cleared blockage. Excavation planned to repair pipe in following days.
	Regulator 036 at 98 Laurel Street	CB and 1000' of pipe (MS4) to receiving water	Nashua River	9/22/2013	5:15 AM	9/22/2013	5:15 AM	50,000	Rain event; insufficient capacity. During combined sewer separation regulator was closed too soon; not enough capacity in downstream pipe. Sewer manhole cover popped off, crew arrived after event was over.	Short term fix included opening regulator and installing meter. Long term fix included more catch basin separation. Two 3 inch trash pumps setup to stop SSO. 6 inch pump installed to bypass problem manhole. Surcharging in system relieved.
	905 Merriam Ave, Pizzeria Uno, Twin City	Ground surface; wetland area	Wetland area	6/11/2013	7:45 AM	6/11/2013	11:30 AM	81,000	Sewer system blockage of 12 inch discharge pipe due to rocks, grease, and rags.	Problem manhole is isolated and blockage is cleared.
	58 St Andrew Street	Backup into property basement	No release to surface water	5/22/2013	7:00 AM	5/22/2013	7:00 AM	200	Rain event; Sewer system blockage due to grease and a root intrusion.	Blockage cleared with jetter and roots were cut out. Line CCTV'd following incident.
	Pole 55, Oak Hill Road	Ground surface	No release to surface water	4/29/2013	9:15 AM	4/29/2013	9:15 AM	125	Sewer system blockage due to grease from Oak Hill Country Club. SSO flowed for 75 ft. along side of road eventually percolating into ground at low point.	Blockage was cleared. City scheduled to visit pipe to clean, jet and CCTV in the following months. Notified OHCC to be diligent about semi-annual pump outs.

City of Fitchburg, Massachusetts
Massachusetts MS4 General Permit
Year 3 Annual Report
Reporting Period: July 1, 2020 – June 30, 2021

Appendix F – Stormwater Management Regulatory Documents

ARCADIS

Chapter 154

STORMWATER MANAGEMENT

ARTICLE I
General Provisions

§ 154-1. Purpose.

A. Regulation of discharges to the municipal storm drainage system is necessary for the protection of the City's water bodies and groundwater, and to safeguard public health, safety, welfare, and environment. The purpose of this chapter is to improve and protect water quality, reduce erosion and sedimentation, promote environmentally sensitive site design practices, and ensure long term maintenance of stormwater controls. This chapter is required to meet all applicable federal and state requirements of the City's National Pollutant Discharge Elimination System Small Municipal Separate Storm Sewer Systems General Permit, commonly known as the "NPDES MS4 permit."

B. The purposes, objectives, and intent of this chapter are as follows:

(1) To prevent pollutants from entering the City's municipal storm drainage system and waters of the Commonwealth of Massachusetts;

(2) To establish an Authorized Enforcement Agency to promulgate, adopt, implement, enforce and amend stormwater regulations;

(3) To prohibit nonstormwater and unauthorized discharges, connections and obstructions to the municipal storm drainage system;

(4) To require the removal of all such illicit discharges, connections and/or obstructions;

(5) To comply with state and federal statutes and regulations relating to stormwater discharges;

(6) To establish procedures to regulate construction and post-construction stormwater runoff management from new development and redevelopment; and

(7) To establish legal authority to ensure compliance with the provisions of this chapter through inspection, monitoring, and enforcement.

§ 154-2. Definitions.

As used in this chapter, the following terms shall have the meanings indicated:

AUTHORIZED ENFORCEMENT AGENCY — The Commissioner of Public Works, his/her employees, officers, or agents are designated to enforce this chapter.

CLEAN WATER ACT — The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), as hereafter amended.

CRITICAL AREAS —

A. Disturbed areas 2,000 square feet or greater within the surface water supply protection area of any of the City's drinking water supplies; or

B. Disturbed areas of 300 square feet or greater on slopes greater than 15%.

DEVELOPMENT — Any construction or grading activities other than for agricultural and silvicultural purposes.

DISCHARGE OF POLLUTANTS — The addition from any source of any pollutant or combination of pollutants into the municipal storm drainage system or into the waters of the United States or Commonwealth of Massachusetts.

DISTURBED AREA — An area where land disturbance has occurred or is planned.

EROSION — A condition in which the earth's surface, including soil or rock fragment, is detached and moved away by the action of water, wind, ice, gravity or other means.

GROUNDWATER — Water beneath the surface of the ground.

ILLICIT CONNECTION — A surface or subsurface drain or conveyance, which allows an illicit discharge into the municipal storm drainage system, including, without limitation, sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved before the effective date of this chapter.

ILLICIT DISCHARGE — Direct or indirect discharge to the municipal storm drainage system that is not composed entirely of stormwater, except as exempted in § 154-10 of this chapter. The term does not include a discharge in compliance with a NPDES Stormwater Discharge Permit or a Surface Water Discharge Permit or resulting from firefighting activities exempted pursuant to § 154-10 of this chapter.

IMPERVIOUS SURFACE — Any material or structure on or above the ground that prevents water infiltrating the underlying soil. "Impervious surface" includes, without limitation, roads, paved parking lots, sidewalks, and rooftops.

LAND DISTURBANCE — Any action that causes a change in the position, location, or arrangement of soil, sand, rock, gravel, or similar earth material, or results in the removal or covering up of natural vegetation.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) or MUNICIPAL STORM DRAINAGE SYSTEM — The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned or operated by the City.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER DISCHARGE PERMIT — A permit issued by United States Environmental Protection Agency or jointly with the state that authorizes the discharge of pollutants to waters of the United States.

NONSTORMWATER DISCHARGE — Discharge to the municipal storm drainage system not composed entirely of stormwater.

OWNER — A person with a legal or equitable interest in property.

PERSON — An individual, partnership, association, firm, company, trust, corporation, agency, authority, department or political subdivision of the Commonwealth of Massachusetts or the federal government, to the extent permitted by law, and any officer, employee, or agent of such person.

POLLUTANT —

A. Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter, whether originating at a point or nonpoint source, that is or may be introduced into the municipal storm drainage system or waters of the Commonwealth of Massachusetts.

B. Pollutants shall include, without limitation:

(1) Paints, varnishes, and solvents;

(2) Oil and other automotive fluids;

(3) Nonhazardous liquid and solid wastes and yard wastes;

(4) Refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordnances, accumulations and floatables;

(5) Pesticides, herbicides, and fertilizers;

(6) Hazardous materials and wastes;

(7) Sewage, fecal coliform and pathogens;

(8) Dissolved and particulate metals;

(9) Animal wastes;

(10) Rock, sand, salt, soils;

(11) Construction wastes and residues; and

(12) Noxious or offensive matter of any kind.

PROCESS WASTEWATER — Water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any material, intermediate product, finished product, or waste product.

SEDIMENT — Solid material, whether mineral or organic, that is in suspension, is transported or has been moved from its site of origin by erosion.

STORMWATER — Any water resulting from rainfall or other precipitation that runs off surfaces during or after a storm, including stormwater runoff, snowmelt runoff, and surface water runoff and drainage.

STORMWATER MANAGEMENT — As a text, shall mean the handbook, Volume One, Volume Two, and Volume Three prepared by the Massachusetts Department of Environmental Protection dated February 2008 as the same may be from time to time revised.

SURFACE WATER DISCHARGE PERMIT — A permit issued by the Department of Environmental Protection (DEP) pursuant to 314 CMR 3.00 that authorizes the discharge of pollutants to waters of the Commonwealth of Massachusetts.

SURFACE WATER SUPPLY PROTECTION AREA — The land area which drains into the City's reservoirs. The watershed areas are depicted and identified on the Geographic Information System of the City of Fitchburg.

TOXIC OR HAZARDOUS MATERIAL OR WASTE — Any material which, because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment. Toxic or hazardous materials include any synthetic organic chemical, petroleum product, heavy metal, radioactive or infectious waste, acid and alkali, and any substance defined as toxic or hazardous under MGL c. 21C and c. 21E, and the regulations at 310 CMR 30.000 and 310 CMR 40.0000.

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

WATERCOURSE — A natural or man-made channel, through which water flows or a stream of water, including a river, brook or underground stream.

WATERS OF THE COMMONWEALTH OF MASSACHUSETTS — All waters within the jurisdiction of the Commonwealth of Massachusetts, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters, and groundwater.

WETLANDS — Coastal and freshwater wetlands, including wet meadows, marshes, swamps, and bogs, as defined and determined pursuant to MGL c. 131, § 40 and 310 CMR 10.00 et seq.

§ 154-3. Applicability.

This chapter shall apply to:

A. Every user of the City's municipal storm drainage system, including discharges to the municipal storm drainage system and to the waters of the Commonwealth of Massachusetts.

B. Any land disturbance activity, including clearing, grading, and excavation in which any one or more of the following criteria are met:

(1) The total cumulative disturbed area exceeds 20,000 square feet.

(2) The proposed disturbed area constitutes a critical area as defined in § 154-2 of this chapter.

(3) The proposed disturbed area is located on a parcel of land having more than 5,000 square feet of existing impervious area and the project will result in a net increase of 30% or more of impervious area.

(4) Exemptions.

(a) Construction activities waived from permit coverage under the NPDES General Permit for Stormwater Discharges from Construction Activities.

(b) Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or the original purpose of the site.

(c) Normal maintenance and improvement of land in agricultural use as

defined by the Wetlands Protection Act regulation, 310 CMR 10.04.

(d) Maintenance of existing landscaping, gardens or lawn areas associated with a single-family dwelling.

(e) The construction of fencing that will not substantially alter existing terrain or drainage patterns.

(f) Construction of utilities other than drainage (gas, water, electric, telephone, etc.) which will not alter terrain or drainage patterns.

(g) Emergency work to protect life, limb, or property.

§ 154-4. Administration.

The Authorized Enforcement Agency, as defined in § 154-2 of this chapter, shall administer, implement and enforce this chapter, and any rules and regulations adopted thereunder. Any powers granted to or duties imposed upon the Authorized Enforcement Agency may be delegated, in writing, by the Authorized Enforcement Agency to employees or agents of the Authorized Enforcement Agency.

§ 154-5. Rules and regulations.

The Authorized Enforcement Agency may adopt and periodically amend rules and regulations, not inconsistent, herewith, to effectuate the purposes of this chapter. Said regulations may include but shall not be limited to provisions regarding administration, application requirements and fees, permitting procedures and requirements, design standards, surety requirements, inspection and site supervision requirements, waivers and exemptions, and enforcement procedures. Failure by the Authorized Enforcement Agency to promulgate such rules and regulations shall not have the effect of suspending or invalidating this chapter.

§ 154-6. Enforcement.

A. The Authorized Enforcement Agency and/or its agent shall be responsible for enforcing the provisions of this chapter. To this end, the Authorized Enforcement Agency and its agent shall have the authority to seek remedies, as described within the stormwater regulations, to enforce this chapter, its regulations and/or the terms and conditions of its permit.

B. Any person found to be violating any of the provisions of this chapter and regulations promulgated by the Authorized Enforcement Agency pursuant to the authority granted by this chapter and by any and all applicable federal, state or local laws, regulations or rules shall be subject to enforcement action, as described within the stormwater regulations. Each day in which any such violation continues shall be deemed a separate offense.

C. Any person found to be violating any of the provisions of this chapter and regulations promulgated by the Authorized Enforcement Agency pursuant to the authority granted by this chapter and by any and all applicable federal, state or local laws, regulations or rules shall become liable to the City for any expense, loss or damage occasioned the City by reason of such violation.

§ 154-7. Severability.

The provisions of this chapter are hereby declared to be severable. If any provision, paragraph, sentence, or clause of this chapter or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this chapter.

§ 154-8. Transitional provisions.

Residential property owners shall have 90 days from the effective date of this chapter to comply with its provisions, provided good cause is shown for the failure to comply with this chapter during that period.

ARTICLE II
Nonstormwater Discharges, Connections, and Obstructions

§ 154-9. Prohibited activities.

A. Illicit discharges. No person shall dump, discharge, cause or allow to be discharged any pollutant or nonstormwater discharge into the municipal storm drainage system, into a watercourse, or into the waters of the Commonwealth of Massachusetts.

B. Illicit connections. No person shall construct, use, allow, maintain or continue any illicit connection to the municipal storm drainage system, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection.

C. Obstruction of municipal storm drainage system. No person shall obstruct or interfere with the normal flow of stormwater into or out of the municipal storm drainage system without prior written approval from the Authorized Enforcement Agency.

§ 154-10. Allowable discharges (exemptions).

The following exemptions are applicable to § 154-9 of this chapter.

A. Discharge or flow resulting from firefighting activities.

B. The following nonstormwater discharges or flows are exempt from the prohibition of nonstormwaters, provided that the source is not a significant contributor of a pollutant to the municipal storm drainage system:

(1) Waterline flushing;

(2) Flow from potable water sources;

(3) Springs;

(4) Natural flow from riparian habitats and wetlands;

(5) Diverted stream flow;

(6) Rising groundwater;

(7) Uncontaminated groundwater infiltration, as defined in 40 CFR 35.2005(20), or uncontaminated pumped groundwater;

(8) Water from exterior foundation drains, footing drains (not including active groundwater dewatering systems), crawl space pumps, or air-conditioning condensation;

(9) Discharge from landscape irrigation or lawn watering;

(10) Water from individual residential car washing;

(11) Discharge from dechlorinated swimming pool water (less than one ppm

chlorine) with written authorization to discharge received from the Authorized Enforcement Agency, provided the water is allowed to stand for one week prior to draining and the pool is drained in such a way as not to cause a nuisance;

(12) Street wash water by methods approved by City;

(13) Water used for dyed water testing, provided verbal notification is given to the Authorized Enforcement Agency prior to the time of the test;

(14) Nonstormwater discharge permitted under a NPDES permit or a Surface Water Discharge Permit, waiver, or waste discharge order administered under the authority of the United States Environmental Protection Agency or the Department of Environmental Protection, provided that the discharge is in full compliance with the requirements of the permit, waiver, or order and applicable laws and regulations; and

(15) Discharge for which advanced written approval is received from the Authorized Enforcement Agency as necessary to protect public health, safety, welfare or the environment.

§ 154-11. Emergency suspension of municipal storm drainage system access.

The Authorized Enforcement Agency may suspend municipal storm drainage system access to any person or property without prior written notice when such suspension is necessary to stop an actual or threatened discharge of pollutants that presents imminent risk of harm to the public health, safety, welfare or the environment. In the event any person fails to comply with an emergency suspension order, the Authorized Enforcement Agency may take all reasonable steps to prevent or minimize harm to the public health, safety, welfare or the environment.

§ 154-12. Notification of spills.

Notwithstanding other requirements of local, state or federal law, as soon as a person responsible for a facility or operation, or responsible for emergency response for a facility or operation, has information of or suspects a release of materials at that facility or operation resulting in or which may result in discharge of pollutants to the municipal drainage system or waters of the Commonwealth of Massachusetts, the person shall take all necessary steps to ensure containment and cleanup of the release. In the event of a release of oil or hazardous materials, the person shall immediately notify the Fire and Police Departments, Board of Health, and the Department of Public Works. In the event of a release of nonhazardous material, the reporting person shall notify the Authorized Enforcement Agency no later than the next business day. The reporting person shall provide to the Authorized Enforcement Agency written confirmation of all telephone, email, facsimile or in-person notifications within three business days thereafter. If the discharge of prohibited materials is from a commercial or industrial facility, the facility owner or operator of the facility shall retain on site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

ARTICLE III
Construction and Post-Construction Stormwater Management of New Developments and Redevelopments

§ 154-13. Permit required.

A. No person may undertake land disturbance activity, including clearing, grading, and excavation in which any one or more of the following criteria are met without a stormwater management permit from the Authorized Enforcement Agency pursuant to this chapter and regulations promulgated hereunder:

(1) The total cumulative disturbed area exceeds 20,000 square feet.

(2) The proposed disturbed area constitutes a critical area as defined in § 154-2 of this chapter.

(3) The proposed disturbed area is located on a parcel of land having more than 5,000 square feet of existing impervious area and the project will result in a net increase of 30% or more of impervious area.

B. Exemptions. The activities listed as exempt under § 154-3 of this chapter do not require a stormwater management permit under this chapter.

§ 154-14. Permits and procedures.

Permits and procedures shall be defined and included as part of any rules and regulations promulgated under this chapter.

§ 154-15. Fee structure.

The Enforcement Agency shall establish and may periodically amend a schedule of fees under this chapter, with the approval of City Council. The Enforcement Agency shall obtain with each submission an application and review fee, and an inspection fee fixed by the Enforcement Agency to cover expenses connected with the application review of the stormwater management permit and to cover DPW costs in ensuring adherence to the applicant's permit conditions. Authority for the Enforcement Agency is granted pursuant to MGL c. 40, § 22F. The applicant must hire a registered professional engineer (P.E.) in the Commonwealth of Massachusetts to certify that the plans are in accordance with the City's standards. The Enforcement Agency is authorized to retain professional consultation at the applicant's expense from applicable City departments or a third-party professional consultant for expert engineering or other services to advise the Enforcement Agency on any or all aspects of the applicant's permit.

§ 154-16. Waivers.

A. The Enforcement Agency may waive strict compliance with any requirement of this chapter or the rules and regulations promulgated hereunder, where:

(1) Such action is allowed by federal, state and local statutes and/or regulations;

(2) Is in the public interest; and

(3) Is not inconsistent with the purpose and intent of this chapter.

B. Any applicant may submit a written request to be granted such a waiver. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that strict application of this chapter does not further the purposes or objectives of this chapter.

C. All waiver requests shall be reviewed by the Enforcement Agency and, if necessary, discussed with other City departments.

City of
Fitchburg

Department of
Public Works

Stormwater Management Rules and Regulations

GENERAL REFERENCES

See Stormwater Management Ordinance – Chapter 154

Table of Contents

ARTICLE I. GENERAL PROVISIONS AND DEFINITIONS

Section 1. Authority

These Stormwater Regulations are promulgated by the Fitchburg, Massachusetts Commissioner of Public Works under Chapter 154: Stormwater Management, of the City of Fitchburg Code of Ordinances, hereinafter referred to as the Stormwater Ordinance.

Section 2. Applicability

A. These Regulations apply to all activities in accordance with the applicable sections of the Stormwater Ordinance and further described herein.

B. Every user of the municipal storm drainage system shall be subject to these regulations, as they apply, and to any charges, rates, fees, and assessments which are or may be established by the City. Every user of the municipal storm drainage systems shall also be subject to applicable federal, state, and local regulations. In instances where various regulations contain different requirements, the most stringent requirements shall apply.

C. Projects and/or activities not within the jurisdiction of any of the City of Fitchburg Boards, Commissions, or Departments, but still within the jurisdiction of the Stormwater Ordinance must comply with these Regulations and, if applicable, must obtain a Stormwater Management Permit in accordance with the permit procedures outlined herein.

Section 3. Purpose

A. These regulations aim to mitigate the increase in stormwater runoff, contaminated or otherwise, associated with developed land and the accompanying increase of impervious surface, which has been found to be a major cause of impairment of water quality and increases in flow to lakes, ponds, streams, rivers, wetlands and groundwater.

B. These Regulations are intended to:

1. protect the public health, safety, welfare, and the environment;
2. ensure proper and safe operation of the municipal storm drainage system;
3. regulate direct and indirect discharge of stormwater to the municipal storm drainage system;
4. prohibit and remove illicit connections and unauthorized discharges to the municipal storm drainage system;
5. establish requirements, procedures, and design standards for activities which result in land disturbance including but not limited to land disturbance from development and redevelopment projects;
6. create uniformity of process and to help clarify the provisions of Chapter 154: Stormwater Management, of the City's Code of Ordinances; and,
7. minimize delay in the permitting process by providing Applicants and their consultants with information which will help them comply with the Stormwater Ordinance.

Section 4. Severability

A. If any provision, paragraph, sentence, or clause of these Regulations shall be held invalid for any reason, all other provisions shall continue in full force and effect.

Section 5. Administration

A. The Authorized Enforcement Agency shall administer, implement, and enforce these rules and regulations. Any powers granted to or duties imposed upon the Enforcement Agency may be delegated in writing by the Authorized Enforcement Agency to its employees, agents, or other City Departments.

B. Waiver. Strict compliance with any requirement of Chapter 154: Stormwater Management or the Regulations may be waived for the reasons given, and in accordance with the procedures set forth in Chapter 154: Stormwater Management.

Section 6. Right to Amend Rules and Regulations

A. The City reserves the right to amend these Regulations in any manner and to establish more stringent limitations or requirements as are deemed necessary and appropriate.

Section 7. Definitions

The definitions of terms in Chapter 154: Stormwater Management, as well as the following definitions, shall apply to terms used in these Regulations.

ABUTTER — The owner(s) of land, or person(s) having real property interests abutting the activity.

APPLICANT — Any person, individual, partnership, association, firm, company, corporation, trust, authority, agency, department, or political subdivision, of the Commonwealth of Massachusetts or the Federal government to the extent permitted ordinance requesting a Stormwater Permit for proposed land disturbance.

APPLICANT'S TECHNICAL REPRESENTATIVE — A Registered Professional Engineer (P.E.), licensed in the Commonwealth, hired by the Applicant to certify that design and construction are completed in accordance with the applicable local, state, and federal stormwater requirements.

AUTHORIZED ENFORCEMENT AGENCY - The Commissioner of Public Works and/or his/her designees have the authority to enforce Chapter 154: Stormwater Management, and these Rules and Regulations promulgated thereunder.

BEST MANAGEMENT PRACTICE (BMP) — An activity, procedure, restraint, or structural improvement that helps to reduce the quantity or improve the quality of stormwater runoff.

CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) — A certified specialist in soil erosion and sediment control. This certification program, sponsored by the Soil and Water Conservation Society in cooperation with the American Society of Agronomy, provides the public with evidence of professional qualifications.

CITY — City of Fitchburg, Massachusetts.

CLEARING — Any activity that removes the vegetative surface cover over the soil.

CONSTRUCTION AND WASTE MATERIALS — Excess or discarded building or site materials, including but not limited to concrete truck washout, chemicals, litter, sanitary waste at a construction site that may adversely impact water quality, and clearing/grubbing wastes such as stumps and asphalt.

CRITICAL AREA(S) – Disturbed areas 2,000 square feet or greater within the surface water supply protection area of any of the City's drinking water supplies; or disturbed areas of 300 square feet or greater on slopes greater than 15%.

DEVELOPMENT — The modification of land, vegetation, water courses, or soils to accommodate a new use or expansion of existing use, usually involving construction. Includes mining, forestry, and topsoil removal operations.

EROSION — The wearing away of the land surface by natural or artificial forces such as wind, water, ice, gravity, or vehicle traffic and the subsequent detachment and transportation of soil particles.

EROSION AND SEDIMENT CONTROL PLAN — A document containing narrative, drawings, and details developed by a Registered Professional Engineer (P.E.) or a Certified Professional in Erosion and Sediment Control (CPESC), which includes BMPs, or equivalent measures designed to control surface runoff, erosion and sedimentation during pre-construction and construction related land disturbances. The plan is required as part of the application for a Stormwater Management Permit.

ESTIMATED HABITAT OF RARE WILDLIFE AND CERTIFIED VERNAL POOLS — Habitats delineated for state-protected rare wildlife and certified vernal pools for use with the Wetlands Protection Act Regulations (310 CMR 10.00) and the Forest Cutting Practices Act Regulations (304 CMR 11.00).

GRADING — Changing the level or shape of the ground surface.

GREEN INFRASTRUCTURE – practice that uses or replicates natural systems to achieve a desired stormwater quality and/or quantity outcome.

GRUBBING — The act of clearing land surface by digging up roots and stumps.

ILLICIT CONNECTION - A surface or subsurface drain or conveyance, which allows an illicit discharge into the municipal storm drainage system, including without limitation sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved before the effective date of these Rules and Regulations.

ILLICIT DISCHARGE - Direct or indirect discharge to the municipal storm drainage system that is not composed entirely of stormwater, except as exempted in § **154-10** of the Stormwater Ordinance. The term does not include a discharge in compliance with a NPDES Stormwater Discharge Permit or a Surface Water Discharge Permit or resulting from firefighting activities exempted pursuant to § **154-10** of the Stormwater Ordinance.

IMPERVIOUS SURFACE — Any material or structure on or above the ground that prevents water infiltrating the underlying soil. Impervious surface includes without limitation roads, paved parking lots, sidewalks, and roof tops.

LAND DISTURBANCE — Any action that causes a change in the position, location, or arrangement of soil, sand, rock, gravel, or similar earth material, or results in the removal or covering up of natural vegetation.

LOW IMPACT DEVELOPMENT - An approach to environmentally friendly land use development. It includes landscaping and design techniques that attempt to maintain the natural, pre-developed ability of a site to manage rainfall. LID techniques capture water on site, filter it through vegetation, and let it soak into the ground.

MASSACHUSETTS ENDANGERED SPECIES ACT – (MGL c. 131A) and its implementing regulations at (321 CMR 10.00) which prohibit the “taking” of any rare plant or animal species listed as Endangered, Threatened, or of Special Concern.

MASSACHUSETTS STORMWATER MANAGEMENT POLICY — The Policy issued by the Department of Environmental Protection, and as amended, that coordinates the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act MGL c. 131A, § 40 and Massachusetts Clean Waters Act MGL c. 21, § 23-56. The Policy addresses stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) or municipal storm drain system — The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention

basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned or operated by the City.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR DISCHARGES FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES — Permit required by the EPA for construction activities that disturb one acre or more of land, either by itself or as part of a larger development. Permit requires a Notice of Intent (NOI) to be submitted to the EPA and the development of a Stormwater Pollution Prevention Plan (SWPPP).

NEW DEVELOPMENT - any construction activities or land alteration on an area that has not previously been developed to include impervious cover.

OPERATION AND MAINTENANCE PLAN — A plan setting up the functional, financial, and organizational mechanisms for the ongoing operation and maintenance of a stormwater management system to ensure that it continues to function as designed.

OUTFALL — The point at which stormwater flows out from a point source discernible, confined, and discrete conveyance into waters of the Commonwealth of Massachusetts.

OWNER — A person with a legal or equitable interest in property.

PERMITTEE – The person or party to whom a permit is granted and is held responsible for compliance with the Permit. For the Stormwater Management Permit, the permittee must be the owner of the property.

PERSON — An individual, partnership, association, firm, company, trust, corporation, agency, authority, department or political subdivision of the Commonwealth of Massachusetts or the federal government, to the extent permitted ordinance, and any officer, employee, or agent of such person.

POINT SOURCE — Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, or container from which pollutants are or may be discharged.

PRE-CONSTRUCTION — All activity in preparation for construction.

PRIORITY HABITAT OF RARE SPECIES — Habitats delineated for rare plant and animal populations protected pursuant to the Massachusetts Endangered Species Act and its regulations.

REDEVELOPMENT — Development, rehabilitation, expansion, demolition, or phased projects that disturb the ground surface or increase the impervious area on previously developed sites. This will include paving of parking lots, driveways, and any other areas.

RUNOFF — Rainfall, snowmelt, or irrigation water flowing over the ground surface.

SEDIMENT — Mineral or organic soil material that is transported by wind or water, from its origin to another location; the product of erosion processes.

SEDIMENTATION — The process or act of deposition of sediment.

SEPTAGE – Liquids, solids, and other materials pumped or removed from a septic tank or similar holding tank and transported by vehicle.

SINGLE-FAMILY – A residential building consisting of one dwelling unit.

SITE — Any lot or parcel of land or area of property where land disturbances are, were, or will be performed.

SLOPE — The incline of a ground surface expressed as a ratio of horizontal distance to vertical distance or expressed as a percentage thereof.

SOIL — Any earth, sand, rock, crushed rock, gravel, or similar material.

STABILIZATION — The use, singly or in combination, of mechanical, structural, or vegetative methods, to prevent or inhibit erosion.

STORMWATER — Precipitation runoff, snow melt runoff, surface water runoff, and groundwater runoff and drainage.

STORMWATER MANAGEMENT PLAN — A plan required as part of the application for a Stormwater Management Permit.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) — A plan required for permit coverage under the NPDES General Permit for Discharges from Large and Small Construction Activities. The SWPPP is a detailed plan describing how erosion and sediment controls and other BMPs will be implemented on a construction site.

STRIP — Any activity which removes the vegetative ground surface cover, including tree removal, clearing, grubbing, and storage or removal of topsoil.

TSS — Total Suspended Solids.

VERNAL POOLS — Temporary bodies of freshwater which provide critical habitat for a number of vertebrate and invertebrate wildlife species.

WATERCOURSE — A natural or man-man channel through which water flows or a stream of water, including a river, brook, or underground stream.

WETLAND RESOURCE AREA — Areas specified in the Massachusetts Wetlands Protection Act MGL c. 131, § 40 and in the City's General Wetland Protection Rules and Regulations.

WETLANDS — Tidal and non-tidal areas characterized by saturated or nearly saturated soils most of the year that are located between terrestrial (land-based) and aquatic (water-based) environments, including freshwater marshes around ponds and channels (rivers and streams), brackish and salt marshes; common names include marshes, swamps and bogs.

ARTICLE II. USE OF STORMWATER DRAINAGE SYSTEMS

Section 8. Municipal Storm Drainage System

The use of all municipal storm drainage systems in the City shall be controlled by the DPW. No person shall, without prior authorization from the DPW, uncover, excavate over, block access to, make any connection with or opening into, alter, or disturb the municipal storm drainage system.

Section 9. Prohibited Connections to Stormwater Drainage Systems

The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

Section 10. Wastewater System Connections

Any wastewater system which is or has been connected to the stormwater drainage system, or which is or has been connected to the stormwater drainage system as a result of a false application, misrepresentation, or non-disclosure on a construction permit, or which was connected to the stormwater drainage system by way of obtaining a wastewater system connection and plumbing permits through any means which circumvented the limitations created by this Article, shall be disconnected, from the stormwater drainage system by the Owner or by the City at the Owner's expense.

Section 11. Flow Obstructions Prohibited

A. No person shall place any dam or other flow restricting structure or device in any drainage facility or watercourse without first having obtained written authorization from the DPW.

B. No person shall place or deposit into any outfall, drainage facility, stormwater drain or watercourse within the City any garbage, yard waste, soil, rock or similar material, or any other substance which obstructs flow in the stormwater drainage system or damages the system or interferes with the proper operation of the system or which constitutes a nuisance or a hazard to the public. In the event that such an obstruction occurs, the DPW may cause such obstruction to be removed or cause such damage to be repaired and to recover applicable costs pursuant to the provisions of these Regulations.

Section 12. Authorized Discharges to Stormwater Drains

Discharges to stormwater drains which are authorized by these Regulations are as follows:

A. Discharges composed entirely of stormwater.

B. Discharges for which the owner has obtained both written authorization from the DPW and an NPDES Permit, coverage under an NPDES General Permit, or an NPDES Permit Exclusion from the EPA.

C. Discharges from the following sources:

1. Waterline flushing;
2. Flow from potable water sources;
3. Springs;
4. Natural flow from riparian habitats and wetlands;
5. Diverted stream flow;
6. Rising groundwater;

7. Uncontaminated groundwater infiltration as defined in 40 CFR 35.2005(20), or uncontaminated pumped groundwater;

8. air conditioning condensation;

9. Discharge from landscape irrigation or lawn watering;

10. Water from individual residential car washing;

11. Street wash water by methods approved by City;

12. Water used for dyed water testing, provided verbal notification is given to the Authorized Enforcement Agency prior to the time of the test;

13. Non-stormwater discharge permitted under a NPDES permit or a Surface Water Discharge Permit, waiver, or waste discharge order administered under the authority of the United States Environmental Protection Agency or the Department of Environmental Protection, provided that the discharge is in full compliance with the requirements of the permit, waiver, or order and applicable laws and regulations; and

14. Discharge for which advanced written approval is received from the Authorized Enforcement Agency as necessary to protect public health, safety, welfare or the environment.

D. Discharges to stormwater drains that require written authorization include, but are not limited to:

1. Dewatering drainage;

2. Subsurface drainage;

3. Non-contact cooling water, non-contact industrial process waters, uncontaminated cooling water, uncontaminated industrial process water;

4. Discharge from dechlorinated swimming pool water (less than one ppm chlorine), provided the water is allowed to stand for one week prior to draining and the pool is drained in such a way as not to cause a nuisance;

5. Or water associated with:

a) excavation of a foundation or trench,

b) hydrological testing,

c) groundwater treatment/remediation;

d) removal or installation of an underground storage tank,

e) foundation drains,

f) crawl space pumps,

g) footing drains, or

Section 13. Authorization to Discharge to Stormwater Drainage Systems

A. With the exception of discharges authorized under Section 12 above, no person shall cause or allow any non-stormwater discharges to the municipal storm drainage system without having first obtained written authorization from the DPW. The Authorized Enforcement Agency shall have the option to charge an administrative fee for review of requests for written authorization to discharge into the municipal stormwater system.

B. Persons seeking to discharge stormwater pursuant to activities requiring written authorization shall also obtain an NPDES Permit, coverage under an NPDES General Permit or an NPDES Exclusion for the discharge, where applicable, a copy of which shall be provided to the DPW.

C. The written authorization issued to the user may stipulate special conditions and terms as deemed necessary or appropriate by the DPW.

D. The decision to issue written authorization rests entirely with the DPW. Such discharges shall comply with all other applicable requirements.

E. Written authorization shall be denied, revoked, suspended or reissued if the DPW determines that the discharge, whether singly or in combination with others, is or may cause or contribute to a water quality problem, or may cause or contribute to a violation of the City's NPDES Permit.

F. In the case of construction site dewatering, the duration of the permit shall not exceed the time period necessary to keep a site dewatered during construction. A permittee may apply to the DPW for an extension of written authorization for construction site dewatering if so approved by the appropriate state or federal agency. Such application shall be submitted to the DPW a minimum of fourteen 14 days prior to the expiration of the existing permit.

Section 14. NPDES Notice of Intent and Permit

Every person who is required to be covered under an NPDES Permit for a Stormwater Discharge associated with Industrial Activity or for construction purposes shall submit to the Authorized Enforcement Agency a copy of the completed Notice of Intent or individual application as submitted to EPA, and the information identified in items A through H below, as applicable:

A. Address of the building (or premises) where the discharge will take place and the name and address of the building (or premises) owner;

B. Name of a contact person, title and phone number;

C. A site plan or sketch which shows the location of the connection of the building stormwater drain or the point(s) of discharge to the municipal storm drainage system, including the street name, size of the stormwater drain to which the stormwater will discharge and the outfall to which the discharge will be conveyed and discharged;

D. Standard Industrial Code (SIC Code) of the facility;

E. A description of the product or services provided by the facility;

F. A description of the nature of the discharge;

G. Existing NPDES permit, if any;

H. Facility's City water account number.

Section 15. Dumping to Catch Basins

A. No person shall directly or indirectly dump, discharge, cause, or allow to be discharged into any catch basin any stormwater pollutant, including but not limited to:

1. solid waste,
2. construction waste and materials,
3. utility access chamber discharges,
4. paint or painting product,
5. antifreeze,
6. hazardous waste,
7. oil,

8. gasoline,
9. grease and all other automotive and petroleum products,
10. solvents and degreasers,
11. drain cleaners,
12. commercial and household cleaners,
13. soap,
14. detergent,
15. cleaning or wash waters ammonia,
16. food and food waste,
17. fats, wax, oil and grease,
18. grass or yard waste,
19. leaves,
20. animal feces,
21. dirt,
22. sand,
23. gravel or other pollutant.

B. Tracking or transference of any of the above enumerated pollutants from a site onto the City's roadways will be determined to be a discharge per the intent of these rules and regulations.

C. Any person determined by the City to be responsible for the direct or indirect discharge of any of the above substances to a catch basin may be responsible for all clean-up costs and for paying any penalties assessed by the City or other federal state or local agencies.

Section 16. Disposal of Septage Prohibited

No person shall discharge or cause or allow to be discharged any septage into a City sanitary sewer, combined sewer, or stormwater drain or into any sewer or stormwater drain tributary thereto.

Section 17. Notification of Spills

Notwithstanding other requirements of federal, state or local laws, rules or regulations, as soon as a person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of or suspects a release of materials at that facility or operation resulting in or which may result in discharge of pollutants to the City's sanitary sewer, combined sewer, or stormwater drainage system or waters of the Commonwealth, the person shall take all necessary steps to ensure containment, and cleanup of the release. In the event of a release of oil or hazardous waste to the City's sanitary sewer, combined sewer, or stormwater drainage system, the person shall immediately notify the City's fire, police, and public works departments. In the event of a release of a non-hazardous pollutant to the city's sanitary sewer, combined sewer, or stormwater drainage system, the reporting person shall notify the DPW within twenty-four (24) hours. The reporting person shall provide to the DPW written confirmation of all telephone, facsimile or in-person notifications within three business days thereafter. If the discharge of prohibited materials is from a commercial or industrial facility, the facility owner or operator of the facility shall retain on-site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained in accordance with the Massachusetts Public Records Law.

Section 18. Design and Construction Standards

New building stormwater drain laterals, stormwater drains, special stormwater facilities, and appurtenances tributary to the municipal storm drainage system shall be designed and constructed in conformance with current DPW standards and specifications. In the absence of such specifications, the materials and procedures set forth in the ASCE/WEF Manual of Practice - *Design and Construction of Urban Stormwater Management Systems* (M.O.P. No. FD-20 / Practice No. 77) most recent edition shall apply, subject to the prior written approval of the Authorized Enforcement Agency.

ARTICLE III. LAND DISTURBANCE

Section 19. Permits and Procedures

A. Permit issuance is required prior to any site altering activity that results in:
   1. Land Disturbance that exceeds a total cumulative area of 20,000 square feet

   2. Land disturbance within a critical area as defined in Article I, Section 7 of this document.

   3. Land disturbance on a parcel of land having more than 5,000 square feet of existing impervious area and ultimately resulting in a net increase of 30% or more of impervious area.

B. Filing Application. The site owner or his/her agent shall file with the Authorized Enforcement Agency five (5) copies and one (1) electronic copy of a completed application package for a Stormwater Management Permit. While the Applicant can be a representative, the permittee must be the owner of the site. The Stormwater Management Permit application package shall include:

   2. A completed Application Form with original signatures of all owners;

   3. Five (5) copies and one (1) electronic copy of the Stormwater Management Plan and project description as specified in Section 20;

   4. Five (5) copies and one (1) electronic copy of the Erosion and Sediment Control Plan as specified in Section 21;

   5. Five (5) copies and one (1) electronic copy of the Operation and Maintenance Plan as specified in Section 22;

   6. Five (5) copies and one (1) electronic copy of the NPDES General Permit for Discharges from Large and Small Construction Activities application, including the Notice of Intent and Stormwater Pollution Prevention Plan (SWPPP);

   7. All copies of the application form, the Stormwater Management Plan, the Erosion and Sediment Plan, and the Operation and Maintenance Plan must be filed with the DPW. The date of receipt by the DPW shall be the official filing date; and

   8. Payment of the application and review fee. The Authorized Enforcement Agency shall obtain with each submission an application and review fee. The Authorized Enforcement Agency may require higher fees if deemed necessary as specified below in Section 19.B(7)(a).

      a) If necessary, the Authorized Enforcement Agency may require additional fees for the following:
         i. Specific engineering and consultant services. DPW may procure the services of outside consultants for the purposes of reviewing and verifying the application materials, these services may include hydrologic and drainage analysis, stormwater quality analysis, site inspections, as-built plan review, and legal issues. Fees are determined at the time of project review based on a specific scope of work.

         ii. Inspection services as detailed in Section 25.

C. Entry. Filing an application for a Stormwater Management Permit grants the Authorized Enforcement Agency, or its agent, permission to enter the site to verify the information in the application and to inspect for compliance with the resulting permit.

D. Other Boards. The Authorized Enforcement Agency shall notify the City Clerk of receipt of the application and shall give one copy of the application package to the applicable City boards or Departments.

E. Information requests. The Applicant shall submit all additional information requested by the Authorized Enforcement Agency to issue a decision on the application.

F. Actions. The Authorized Enforcement Agency's action, rendered in writing, shall consist of either:

1. Approval of the Stormwater Management Permit application based upon determination that the proposed Stormwater Management Plan meets the Standards in Sections 20, 21, and 22 and will adequately protect the water resources of the community and is in compliance with the requirements set forth in these rules and regulations.

2. Conditional Approval of the Stormwater Management Permit application subject to any conditions, modifications, or restrictions required by the Authorized Enforcement Agency which will ensure that the project meets the Standards in Sections 20, 21, and 22 and adequately protect water resources, set forth in these rules and regulations.

3. Denial of the Stormwater Management Permit application based upon a determination that the proposed Stormwater Management Plan, as submitted, does not meet the Standards in Sections 20, 21, and 22 or adequately protect water resources, as set forth in these rules and regulations.

G. Issuance of the Stormwater Management Permit is subject to the following:

1. No Stormwater Management Permit shall be issued until the required Stormwater Management Plan, Erosion and Sediment Control Plan, and Operation and Maintenance Plan are approved.

2. As a condition of permit issuance, the Applicant shall agree to allow any inspections to be conducted.

3. Where a bond, letter of credit, or other surety is required, the Stormwater Management Permit shall not be issued until the surety has been obtained and approved.

4. Permit shall be predominately displayed at the entrance to the site by the applicant. Permit shall be responsible for mounting the permit on a solid post and backing and protecting the permit from the weather.

H. Failure of the Authorized Enforcement Agency to take final action. Failure of the Authorized Enforcement Agency to take final action upon an application within 60 days shall be deemed to be approval of said application. Upon certification by the City Clerk that the allowed time has passed without the Authorized Enforcement Agency action, the Stormwater Management Permit shall be issued by the Authorized Enforcement Agency.

I. Plan Changes. The permittee must notify the Authorized Enforcement Agency in writing of any drainage change or alteration in the system authorized in a Stormwater Management Permit before any change or alteration is made. If the Authorized Enforcement Agency determines that the change or alteration is significant, based on the Stormwater Management Standards in Sections 20, 21, and 22 and accepted construction practices, the Authorized Enforcement Agency may require that an amended application be filed, and a public hearing held. If any change or alteration from the Stormwater Management Permit occurs, the Authorized Enforcement Agency may require the installation of interim erosion and sediment control measures before approving the change or alteration.

J. Project Completion. At completion of the project the permittee shall submit as-built record drawings of all structural stormwater controls and treatment BMPs required for the site. The as-built drawings shall show deviations from the approved plans, if any, and be certified by a Registered Professional Engineer (P.E.).

K. Intent and Consistency with Other Plans. The intent of this permit is to ensure compliance with the State and City’s Stormwater Standards as well as compliance with the NPDES MS4 Permit issued to the City by the EPA. Submittals to other City departments, boards, and commissions, State or Federal Agencies, may be utilized and supplemented to fulfill all requirements of the Stormwater Management Permit.

Section 20. Stormwater Management Plan

A. To the greatest extents practicable, the City requires development and redevelopment project proponents to attenuate runoff and infiltrate rainfall on the property, to minimize and mitigate against runoff and contaminants leaving private properties, both during construction and once completed.

B. The application for a Stormwater Management Permit shall include submittal of a Stormwater Management Plan to the Authorized Enforcement Agency. This Stormwater Management Plan shall contain sufficient information for the Authorized Enforcement Agency and relevant City departments to evaluate the environmental impact, effectiveness, and acceptability of the measures proposed by the Applicant for reducing adverse impacts from stormwater. The Plan shall be designed to meet the Massachusetts Stormwater Management Standards and the design standards as set forth in Section 18. The Stormwater Management Plan shall fully describe the project in drawings, and narrative. It shall include:

1. Contact Information. Name, address, and telephone numbers of the owner, Applicant, and person(s) or firm(s) preparing the Plan,
2. A locus map showing the parcel in relation to the surrounding properties,
3. A North arrow, scale and date,
4. The property lines,
5. The existing zoning, and land use at the site,
6. Critical area boundaries at the site,
7. The proposed land use,
8. The location(s) of existing and proposed easements,
9. The location(s) of existing and proposed utilities,
10. The site's existing and proposed topography with contours at two-foot intervals,
11. The existing site hydrology: the rate of precipitation, quantity of stormwater, rate of surface runoff, and timing of its arrival at a point of interest,
12. A description and delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which stormwater flows,
13. Estimated seasonal high groundwater elevation (November to April) in areas to be used for stormwater retention, detention, or infiltration,
14. The existing and proposed vegetation and ground surfaces with runoff coefficient for each,
15. A drainage area map showing pre and post construction watershed boundaries, drainage area and stormwater flow paths,
16. A description and drawings of all components of the proposed drainage system including:
    a) Locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization,
    b) All measures for the detention, retention, or infiltration of water,
    c) All measures for the protection of water quality,
    d) The structural details for all components of the proposed drainage systems and stormwater management facilities,

e) Notes on drawings specifying materials to be used, construction specifications, and typical details, and

f) Expected hydrology with supporting calculations.

17. A description and drawings of all components of the proposed drainage system,

18. Proposed improvements including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable,

19. Timing, schedules, and sequence of development including clearing, stripping, rough grading, construction, final grading, and vegetative stabilization,

20. The name, address and the beeper or cell phone number, if applicable, of the best management practices manager and a proposed schedule for the inspection and maintenance of all best management practices,

21. A narrative section which includes a discussion of each measure, its purpose, its construction sequence and installation timing as they apply to the site and the project proposed,

22. The extent of one-hundred-year floodplain boundaries if identified on the Federal Emergency Management Agency floodplain maps,

23. Soils information for design purposes from the Soil Survey of Worcester County Massachusetts, Northeastern Part, prepared by the United States Department of Agriculture, Soil Conservation Service,

24. A depiction or description of areas of soil disturbance,

25. A depiction or description of areas of cut and fill,

26. Erosion and Sedimentation Controls to be employed during construction, including driveway stone mats, and temporary BMPs.

27. Tabulated sequence of construction,

28. The construction schedule,

29. The earth movement schedule,

30. The projects phases as they relate to soil disturbance,

31. A maintenance schedule for the period of construction, and

32. Any other information requested by the Authorized Enforcement Agency.

C. Standards. Projects shall meet the Standards of the City and Massachusetts Stormwater Management Policy, which are as follows:

1. Drainage System calculations based on the following:

a) Peak flows and run-off at the boundaries of the project shall be no higher following development than before development, for the 2, 10, 25, and 100-year storm events using either the SCS TR-55 or TR-20 methods.

b) Low Impact Development (LID) site planning and design strategies must be used to the maximum extent feasible.

c) Applicant must demonstrate that Green Infrastructure stormwater techniques were also considered and utilized to the maximum extent feasible.

d) The design of treatment and infiltration practices must follow the guidance in Volume 2 of the Massachusetts Stormwater Handbook, as amended.

e) Stormwater management systems on new development sites shall be designed to:

i. Not allow new stormwater conveyances to discharge untreated stormwater in accordance with Massachusetts Stormwater Handbook Standard 1;

ii. Control peak runoff rates in accordance with Massachusetts Stormwater Handbook Standard 2;

iii. Recharge groundwater in accordance with Massachusetts Stormwater Handbook Standard 3;

iv. Eliminate or reduce the discharge of pollutants from land uses with higher pollutant loads as defined in the Massachusetts Stormwater Handbook in accordance with Massachusetts Stormwater Handbook Standard 5;

v. Protect Zone II or Interim Wellhead Protection Areas of public water supplies in accordance with Massachusetts Stormwater Handbook Standard 6;

vi. Implement long term maintenance practices in accordance with Massachusetts Stormwater Handbook Standard 9; and

vii. Require that all stormwater management systems be designed to:

(1) Retain the volume of runoff equivalent to, or greater than, one (1.0) inch multiplied by the total post-construction impervious surface area on the site and/or

(2) Remove 90% of the average annual load of TSS generated from the total post-construction impervious area on the site and 60% of the average annual load of Total Phosphorus (TP) generated from the total post-construction impervious surface area on the site.

f) Stormwater management systems on Redevelopment sites shall meet the following Standards to the maximum extent feasible:

i. Massachusetts Stormwater Standards 1, 2, and 3, the pretreatment and structural best management practices requirements Massachusetts Stormwater Standards 5 and 6.

ii. Stormwater management systems on Redevelopment sites shall also improve existing conditions by requiring that stormwater management systems be designed to:

(1) Retain the volume of runoff equivalent to, or greater than, 0.80 inch multiplied by the total post-construction impervious surface area on the site and/or

(2) Remove 80% of the average annual post-construction load of TSS generated from the total post-construction impervious area on the site and 50% of the average annual load of Total Phosphorus (TP) generated from the total postconstruction impervious surface area on the site.

iii. Stormwater management systems on redevelopment sites may utilize offsite mitigation within the same USGS HUC10 basin as the redevelopment site to meet the equivalent retention or pollutant removal requirements.

iv. Redevelopment activities that are exclusively limited to maintenance and improvement of existing roadways, (including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving projects) shall improve existing conditions where feasible and are exempt from part e (i-iii). Roadway widening or improvements that increase the amount of impervious area on the redevelopment site by greater than or equal to a single lane width shall meet the requirements of part e (i-iii).

f) Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool or other BMP performance evaluation tool provided by EPA Region 1, where available. If EPA Region 1 tools do not address the planned or installed BMP performance, any federally or State approved BMP design guidance or performance standards (e.g. MA State Stormwater Handbook and design guidance manuals) may be used to calculate BMP performance.

g) Capacity of drainage systems shall be adequate to carry all stormwater run-off presently flowing through the proposed project area, as well as to dispose of any additional run-off generated by the proposed project up to and including the run-off from a 100-year storm using the following methods:

   i. The flow from storms of up to a 25-year frequency and 24-hour duration shall be conveyed through the municipal storm drainage system on the developed site. Storm drain piping and grate inlets shall be designed for a 25-year storm event;

   ii. Detention facilities and culverts shall be provided to accommodate all runoff, up to and including the run-off generated by the 100-year, 24- hour storm. As a minimum, detention basin routing calculations shall be prepared for the 10, 25 and 100-year storm events.

h) Drainage pipe systems shall be designed to provide self-cleaning flow velocities.

i) The combination of storage and design release rate shall not result in a storage duration of greater than seventy-two (72) hours.

j) Maximum total depth of detention/retention area shall be four feet (4') as measured from the lowest outlet point to the lowest point of the emergency overflow.

k) Outlet control structures shall be designed to minimize required maintenance for proper operation.

l) Each stormwater detention/retention area shall be provided with a method of emergency overflow in the event of a storm in excess of the 100-year frequency type.

m) Drainage system may discharge to an existing, adjacent municipal storm drainage system if the Applicant can show that the municipal storm drainage system provides sufficient excess capacity to accommodate both the existing runoff and the proposed additional runoff from the project during the 2-year, 10-year and 100-year 24-hour duration storm event.

n) Hydraulic calculations, prepared by a Massachusetts licensed Professional Engineer, shall note the specific engineering and/or computer program used. Hydraulic calculations shall be submitted to substantiate all design features of any proposed or existing drainage system utilized by the project. Computations for run-off shall be made in accordance with standard engineering practice and in compliance with D.E.P. standards. Hydraulic calculations shall include the following:

   i. Runoff area boundaries shown on a plan

   ii. Methodology used

   iii. Soil and land use characterization and design storm parameters

   iv. Soil conditions and ground water

   v. Pipe size calculation

   vi. Detention and retention pond and outlet control calculations as applicable

   vii. TSS removal rates and calculations

viii. Phosphorus removal rates and calculations

ix. Infiltration calculations as applicable

x. Culvert analysis and calculation as applicable

o) A continuous design element (i.e. railing or hedge) shall border any detention/retention basin area with interior side slopes greater than 3:1. Drainage basins shall be designed to facilitate access for maintenance vehicles and personnel.

p) If it is necessary to carry drainage across lots within the development, storm drainage easements shall be provided, of such width and construction as will be adequate to accommodate the volume and velocity of the run-off. However, no such easement shall be less than twenty feet (20') in width.

q) If a proposed drainage system will carry water across land outside the development boundaries to an approved outfall, the Applicant shall secure appropriate drainage rights, at the Applicant's expense.

r) Retention and detention ponds, and methods of overland flow may be used to retain, detain and treat any increased and accelerated runoff which the development may generate.

s) There shall be a minimum of two feet (2') of naturally occurring soils between the detention basin bottom and the maximum annual ground water table;

t) Intermittent surface water courses and such as swales, forebays, detention/retention basins shall be vegetated and appropriately reinforced along the low flow channel.

u) The use of drainage facilities coordinated with landscaped buffers, open space and conservation areas is encouraged.

v) Neighboring properties shall not be negatively impacted by flooding due to excessive runoff caused by the development.

3. When one or more of the Standards cannot be met, an Applicant may demonstrate that an equivalent level of environmental protection will be provided. Additional design standards are referenced in Section 23.

4. Landscaping

a) All open areas, exclusive of areas to remain in an existing natural state shall be landscaped utilizing both natural and man-made materials such as grasses, trees, shrubs, paving materials and outdoor furniture that are appropriate to the local climate and anticipated uses of the project.

b) Landscaped buffer shall consist of natural or landscaped area at least ten feet (10') wide. Where natural or existing plantings are not present, new plantings shall provide a visual screen that begins at or near ground level and, when mature, will provide a minimum height of at least eight feet (8'). At least fifty percent of the plantings shall consist of evergreens. Buffers may be interrupted to provide for the entrance and exit of vehicular and pedestrian traffic. New shrub plantings in buffer areas shall be a minimum of four feet (4') in height at time of planting. New evergreen trees shall be a minimum of six feet (6') in height at time of planting.

c) All required landscaping shall be maintained in good condition at all times by the Owner and at the Owner's expense.

d) Requirements set by the City of Fitchburg, Massachusetts, *Rules and Regulations Governing the Subdivision of Land*, Section 4.011, Trees and Plantings, as updated and revised periodically, must also be met by the Owner and at the Owner's expense.

5. Nonstructural Stormwater Management Strategies.

   a) To the maximum extent practicable, nonstructural stormwater management strategies set forth in Section 20.B.5.b shall be incorporated into the design. The Applicant shall identify the nonstructural measures incorporated into the design of the project. If the Applicant contends that it is not feasible for engineering, environmental, or safety reasons to incorporate any nonstructural stormwater management measures identified in Section 20.B.5.b below into the design of a particular project, the Applicant shall identify the strategy considered and provide a basis for the contention.

   b) Nonstructural stormwater management strategies incorporated into site design shall:

      i. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss,

      ii. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces,

      iii. Maximize the protection of natural drainage features and vegetation,

      iv. Minimize the decrease in the "time of concentration" from pre-construction to post construction,

      v. Minimize land disturbance including clearing and grading,

      vi. Minimize soil compaction,

      vii. Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticides,

      viii. Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas, and

      ix. Provide other source controls to prevent or minimize the use or exposure of pollutants at the site, in order to prevent or minimize the release of those pollutants into stormwater runoff. Such source controls include, but are not limited to:

         (1) Site design features that help to prevent accumulation of trash and debris in drainage systems,

         (2) Site design features that help to prevent discharge of trash and debris from drainage systems,

         (3) Site design features that help to prevent and/or contain spills or other harmful accumulations of pollutants at industrial or commercial developments, and

         (4) When establishing vegetation after land disturbance, applying fertilizer in accordance with the requirements established under the Massachusetts Stormwater Management Policy Handbook.

Section 21. Erosion and Sediment Control Plan

A. The application for a Stormwater Management Permit shall include submittal of an Erosion and Sediment Control Plan to describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed erosion and sediment controls. The Applicant shall submit such material as is necessary to show that the proposed development will comply with the design requirements listed in Section 21.B below.

B. The design requirements of the Erosion and Sediment Control Plan are intended to:

1. Minimize total area of land disturbance,
2. Sequence activities to minimize simultaneous areas of land disturbance,
3. Minimize peak rate of runoff in accordance with the Massachusetts Stormwater Policy,
4. Minimize soil erosion and control sedimentation during construction, provided that prevention of erosion is preferred over sediment control,
5. Divert uncontaminated water around disturbed areas,
6. Maximize groundwater recharge,
7. Install and maintain all Erosion and Sediment Control measures in accordance with manufacturer specifications and good engineering practices,
8. Prevent off-site transport of sediment; depositing or washing soil into a waterbody or the storm drainage system is prohibited,
9. Protect and manage on and off-site construction and waste material storage areas (overburden and stockpiles of dirt, borrow areas, or other areas used solely by the permitted project are considered a part of the project),
10. Comply with applicable Federal, State and local laws and regulations including waste disposal, sanitary sewer or septic system regulations, and air quality requirements, including dust control,
11. Prevent significant alteration of habitats mapped by the Massachusetts Natural Heritage and Endangered Species Program as Endangered, Threatened or of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species from the proposed activities,
12. Institute interim and permanent stabilization measures, which shall be instituted on a disturbed area as soon as practicable but no more than 14 days after construction activity has temporarily or permanently ceased on that portion of the site,
13. Properly manage on-site construction and waste materials,
14. Prevent off-site vehicle tracking of sediments. Graveled roads, access drives and parking areas of sufficient width and length are required to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by street cleaning (not flushing) before the end of each workday,
15. Install measures intended to keep soil on site or out of water bodies, storm drainage systems or the public right-of-way as the first step in any development. These measures shall be made functional prior to any upslope development taking place,
16. Remove any soil that enters the public right-of-way,
17. Protect stormwater inlets that are functioning during the course of the development by approved sediment control measures so that sediment-laden water cannot enter the inlets without first being filtered,
18. Apply permanent or temporary soil stabilization to areas of land disturbance in conformance with the following schedule:

    a) Between May 1 and September 30, all denuded sites shall immediately be provided with either temporary or permanent soil stabilization.

    c) Between October 1 and April 30, temporary erosion and sediment control measures to reduce dust and sediment transport shall be applied as soon as practicable, but in no case more than seven days after land disturbing activity occurs.

d) Ground cover shall be installed on any portion of a site that is denuded for more than six months. Sports fields or playgrounds surrounded by vegetative cover or permanently installed curbing are exempt from this requirement.

e) Temporary measures shall be maintained until permanent measures are established.

f) Permanent non-permitted land disturbing activities may achieve compliance with the standards set out in subsections (a) through (d) above, with the installation and maintenance of approved permanent BMPs.

g) Secure or protect soil stockpiles throughout the project with temporary or permanent soil stabilization measures. The Applicant is accountable for the protection of all stockpiles on the site, and those transported from the site. Depositions of soil may be subject to additional regulations requiring permit, review or erosion and sediment control.

h) Post signage on the site of the permitted land disturbance activity that identifies the City's Authorized Enforcement Agency and telephone number.

C. Erosion and Sediment Control Plan Content. The Plan shall contain the following information:

1. Names, addresses, and telephone numbers of the owner, Applicant, and person(s) or firm(s) preparing the Plan,

2. Title, date, north arrow, names of abutters, scale, legend, and locus map,

3. Location and description of natural features including:

a) Watercourses and water bodies, wetland resource areas and all floodplain information, including the 100-year flood elevation based upon the most recent Flood Insurance Rate Map, or as calculated by a Registered Professional Engineer (P.E.) for areas not assessed on these maps,

b) Existing vegetation including tree lines, canopy layer, shrub layer, and ground cover, and trees with a caliper twelve (12) inches or larger, noting specimen trees and forest communities, and

c) Habitats mapped by the Massachusetts Natural Heritage and Endangered Species Program as Endangered, Threatened or of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species within five hundred 500 feet (500') of any construction activity.

4. Lines of existing abutting streets showing drainage and driveway locations and curb cuts,

5. Existing soils, volume and nature of imported soil materials,

6. Topographical features including existing and proposed contours at intervals no greater than two 2 feet (2') with spot elevations provided when needed,

7. Surveyed property lines showing distances and monument locations, all existing and proposed easements, rights-of-way, and other encumbrances, the size of the entire parcel, and the delineation and number of square feet of the land area to be disturbed,

8. Drainage patterns and approximate slopes anticipated after major grading activities (Construction Phase Grading Plans),

9. Location and details of erosion and sediment control measures with a narrative of the construction sequence/phasing of the project, including both operation and maintenance for structural and non-structural measures, interim grading, and construction and waste material stockpiling areas,

10. Path and mechanism to divert uncontaminated water around disturbed areas, to the maximum extent practicable,

11. Location and description of industrial discharges, including stormwater discharges from dedicated asphalt plants and dedicated concrete plants, which are covered by this permit,

12. Stormwater runoff calculations in accordance with the Massachusetts Stormwater Management Policy,

13. Location and description of and implementation schedule for temporary and permanent seeding, vegetative controls, and other stabilization measures,

14. A description of construction and waste materials expected to be stored on-site and intended disposal methods. The Plan shall include a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response,

15. A description of provisions for phasing the project where one acre of area or greater is to be altered or disturbed,

16. Plans must be stamped and certified by a Registered Professional Engineer (P.E.) registered in Massachusetts or a Certified Professional in Erosion and Sediment Control (CPESC), and

17. Such other information as is required by the Authorized Enforcement Agency.

D. Project Changes. The permittee, or their agent, shall notify the Authorized Enforcement Agency in writing of any change or alteration of a land disturbance authorized in a Stormwater Management Permit before any change or alteration occurs. If the Authorized Enforcement Agency determines that the change or alteration is significant, based on the design requirements listed in Section 18 and accepted construction practices, the Authorized Enforcement Agency may require that an amended Stormwater Management Permit application be filed and/or a public hearing held. If any change or deviation from the Stormwater Management Permit occurs during a project, the Authorized Enforcement Agency may require the installation of interim measures before approving the change.

Section 22. Operation and Maintenance Plan

A. Operation and maintenance of private facilities during and after construction are the responsibility of the Owner, and shall be performed at the Owner's expense.

B. If the Operation and Maintenance Plan identifies a person other than the Owner (for example, a public agency or homeowners' association) as having the responsibility for maintenance, the Plan shall include documentation of such person's agreement to assume this responsibility, or of the developer's obligation to dedicate a stormwater management facility to such person under an applicable ordinance or regulation.

C. Responsibility for maintenance shall not be assigned or transferred to a tenant of a property.

D. If the person responsible for maintenance identified under Section 22.B above is not a public agency, the operation and maintenance and any future revisions based on Section 22.G below shall be recorded upon the deed of record for each property on which the maintenance described in the Operation and Maintenance Plan must be undertaken.

E. Preventative and corrective maintenance shall be performed to maintain the function of the stormwater management measure, including repairs or replacement to the structure; removal of sediment, debris, or trash; restoration of eroded areas; snow and ice removal; fence repair or replacement; restoration of vegetation; and repair or replacement of nonvegetated linings.

F. The person responsible for maintenance identified under Section 22.B above shall maintain a detailed log as detailed in Section 22.L.

G. The person responsible for maintenance identified under Section 22.B above shall evaluate the effectiveness of the Operation and Maintenance Plan at least once per year and adjust the Plan and the deed as needed.

H. The person responsible for maintenance identified under Section 22.B above shall retain and make available, upon request by any public entity with administrative, health, environmental, or safety authority over the site, the Operation and Maintenance Plan and the documentation required by Section 22.L.

I. The requirements of Sections 22.C and 22.D do not apply to stormwater management facilities that are dedicated to and accepted by the City.

J. In the event that the stormwater management facility becomes a danger to public safety or public health, or if it is in need of maintenance or repair, the Authorized Enforcement Agency shall so notify the responsible person in writing. Upon receipt of that notice, the responsible person shall have fourteen (14) days to affect maintenance and repair of the facility in a manner that is approved by the Authorized Enforcement Agency or their designee. The Authorized Enforcement Agency, in its discretion, may extend the time allowed for effecting maintenance and repair for good cause. If the responsible person fails or refuses to perform such maintenance and repair, the City may immediately proceed to do so and shall bill the cost thereof to the responsible person.

K. Nothing in this Section 22 shall preclude the Authorized Enforcement Agency in which the major development is located from requiring the posting of a performance or maintenance guarantee in accordance with the Massachusetts Sedimentation and Erosion Control Guidance Document.

L. An Operation and Maintenance Plan is required at the time of application for all projects. The Operation and Maintenance Plan shall be designed to ensure compliance with the Stormwater Management Permit, these rules and regulations, and that the Massachusetts Surface Water Quality Standards, 314, CMR 4.00 are met in all seasons and throughout the life of the system. The Authorized Enforcement Agency shall make the final decision of what maintenance option is appropriate in a given situation. The Authorized Enforcement Agency will consider natural features, proximity of site to water bodies and wetlands, extent of impervious surfaces, size of the site, the types of stormwater management structures, and potential need for ongoing maintenance activities when making this decision. The Operation and Maintenance Plan shall remain on file with the Authorized Enforcement Agency and shall be an ongoing requirement. The Operation and Maintenance Plan shall include:

    1. The name(s) of the owner(s) for all components of the system.

    2. Maintenance agreements that specify:

        a) The names and addresses of the person(s) responsible for operation and maintenance,

        b) The person(s) responsible for financing maintenance and emergency repairs,

        c) A Maintenance Schedule for all drainage structures, including swales and ponds,

        d) A list of easements with the purpose and location of each, and

        e) The signature(s) of the owner(s).

    3. Map showing locations of all stormwater facilities including but not limited to catch basins, manholes, drainage piping, and stormwater devices.

    4. Detailed log of all preventative and corrective maintenance for the structural stormwater management measures incorporated into the design of the development, including a record of all inspection and copies of all maintenance-related work orders.

    5. Record of annual updates.

M. Stormwater Management Easement(s).

1. Stormwater management easements shall be provided by the property owner(s) as necessary for:

    a) access for facility inspections and maintenance;

    b) preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event; and

    c) direct maintenance access by heavy equipment to structures requiring regular cleanout.

2. The purpose of each easement shall be specified in the maintenance agreement signed by the property owner.

3. Stormwater management easements are required for all areas used for off-site stormwater control unless a waiver is granted by the Authorized Enforcement Agency.

4. Easements shall be recorded with the Worcester County Registry of Deeds prior to issuance of a Certificate of Occupancy by the Authorized Enforcement Agency.

N. Changes to Operation and Maintenance Plan

1. The owner(s) of the stormwater management system must notify the Authorized Enforcement Agency of changes in ownership or assignment of financial responsibility.

2. The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of these rules and regulations by mutual agreement of the Authorized Enforcement Agency and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties shall include owner(s), persons with financial responsibility, and persons with operational responsibility.

O. The Applicant is required to obtain an annual certification from a Registered Professional Engineer (P.E.) that maintenance is being performed on structural BMPs.

P. Waivers

1. The City shall perform operation and maintenance of structural BMPs for public facilities only.

Section 23. Relevant Reference Materials

In order to complete the Stormwater Management Plan, Erosion and Sediment Plan, and Operation and Maintenance Plan as part of the permit requirements and ensure that developers and landowners meet Massachusetts standards, the Applicant shall use the following (most recent edition) references to aid in structural and non-structural BMP implementation:

A. Massachusetts Stormwater Management Policy Handbook.

B. Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas.

C. Massachusetts Department of Public Works “Highway Design Manual” Chapter 10, Drainage and Erosion Control.

Section 24. Surety

The Authorized Enforcement Agency may require the permittee to post before the start of land disturbance or construction activity, a surety bond, irrevocable letter of credit, cash, or other acceptable security. The form of the bond shall be approved by the City Solicitor and be in an amount deemed sufficient by the Authorized Enforcement Agency to ensure that the work will be completed in accordance with the permit. If the project is phased, the Authorized Enforcement Agency may release part of the bond as each phase is completed in compliance with the permit, but the bond may not be fully released until the Authorized Enforcement Agency has received the final inspection report and the final inspection has been conducted as required by Section 25 and issued a Certificate of Occupancy.

Section 25. Inspection and Site Supervision

A. Pre-construction Meeting. Prior to starting clearing, excavation, construction, or land disturbance, the Applicant, the Applicant's Technical Representative, the general contractor or any other person with authority to make changes to the project, shall meet with the Authorized Enforcement Agency, to review the permitted plans and their implementation.

B. The Applicant's Technical Representative shall inspect the project site and provide certification to the City of project completeness at the following stages:

   1. Initial Site Inspection: prior to approval of any plan.

   2. The Applicant's Technical Representative or its designated agent shall make inspections as hereinafter required and shall either approve that portion of the work completed or shall notify the permittee wherein the work fails to comply with the Stormwater Management Permit as approved. The Stormwater Management Permit and associated plans for grading, stripping, excavating, and filling work, bearing the signature of approval of the Authorized Enforcement Agency, shall be maintained at the site during the progress of the work. The permittee shall notify the Authorized Enforcement Agency at least two (2) working days before each of the following events; the Applicant's Technical Representative shall be responsible to observe and assure the project progresses appropriately at the following events:

      a) Erosion and sediment control measures are in place and stabilized;

      b) Site Clearing has been substantially completed;

      c) Rough Grading has been substantially completed;

      d) Final Grading has been substantially completed;

      e) Close of the Construction Season; and

      f) Final Landscaping (permanent stabilization) and project final completion.

C. Permittee Inspections. The permittee or his/her agent shall conduct and document inspections of all control measures no less than weekly or as specified in the permit, and prior to and following anticipated storm events. The purpose of such inspections will be to determine the overall effectiveness of the required plans and the need for maintenance or additional control measures. The permittee or his/her agent shall submit monthly reports to the Authorized Enforcement Agency or designated agent in a format approved by the Authorized Enforcement Agency.

D. Bury Inspection: prior to backfilling of any underground drainage or stormwater conveyance structures.

E. Final Inspection. After the stormwater management system has been constructed, the Applicant must submit a stamped record plan signed by a Registered Professional Engineer (P.E.) detailing the actual stormwater management system as installed. The record plan will include a statement box on the plan certifying the site review was conducted in accordance with these rules and regulations and all items were constructed according to the approved permit. The permittee or Applicant's Technical Representative shall request a final inspection site meeting with the Authorized Enforcement Agency. The Authorized Enforcement Agency shall visit the site with the Applicant's Technical Representative to confirm its "as-built" features. As-Built drawings of structural BMPs shall be submitted to the Authorized Enforcement Agency. The final inspection shall be completed and the final report (Section 26) shall be submitted to the Authorized Enforcement Agency before the surety has been released and prior to requesting the issuance of Certificate of Occupancy.

F. Access Permission. 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 these rules and regulations and may make or cause to be made such examinations, surveys or sampling as the Authorized Enforcement Agency deems reasonably necessary to determine compliance with the Stormwater Management Permit.

G. If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built as called for in the Stormwater Management Plan, it shall be corrected by the permittee before the performance guarantee is released. If the permittee fails to act the City may use the surety bond to complete the work. Examples of inadequacy shall be limited to: errors in the infiltrative capability, errors in the maximum groundwater elevation, failure to properly define or construct flow paths, or erosive discharges from basins.

H. Inspection Fees. If necessary, the Authorized Enforcement Agency may require additional fees for site inspections conducted by City Departments. Fees are calculated at a rate of $ 85 per hour for review, inspection, and monitoring services that require an excess of two (2) hours of review, inspection, and monitoring time by a City department.

Section 26. Final Report

The Applicant's Technical Representative shall evaluate the effectiveness of the stormwater BMPs during an actual storm and document the findings. The final report will include certification from the Applicant's Technical Representative as to the effectiveness of the installed system during storm events.

Upon completion of the work, the permittee shall submit a report to the Authorized Enforcement Agency (including certified as-built construction plans) from a Professional Engineer (P.E.), surveyor, or Certified Professional in Erosion and Sediment Control (CPESC), certifying that all erosion and sediment control devices, and approved changes and modifications, have been completed in accordance with the conditions of the approved Stormwater Management Permit. Any discrepancies should be noted in the cover letter.

Section 27. Waivers

A. The Authorized Enforcement Agency may waive strict compliance with any requirement of these rules and regulations promulgated hereunder, where:

1. such action is allowed by federal, state and local statutes and/or regulations,
2. is in the public interest, and
3. is not inconsistent with the purpose and intent of these rules and regulations.

B. Any Applicant seeking a waiver, shall submit a written request. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that strict application of these rules and regulations does not further the purposes or objectives of these rules and regulations. If approved, the waiver shall be memorialized in writing, upon City letterhead, and signed by the Authorized Enforcement Agency.

Section 28. Exemptions

A. Pursuant to the Stormwater Ordinance, the provisions of this Regulation do not apply to:

1. Construction activities waived from permit coverage under the NPDES General Permit for Stormwater Discharges from Construction Activities.
2. Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or the original purpose of the site.
3. Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulation 310 CMR 10.04;
4. Maintenance of existing landscaping, gardens or lawn areas associated with a single-family dwelling;
5. The construction of fencing that will not substantially alter existing terrain or drainage patterns;
6. Construction of utilities other than drainage (gas, water, electric, telephone, etc.) which will not alter terrain or drainage patterns;
7. Emergency work to protect life, limb, or property.

Section 29. Certificate of Occupancy

The Authorized Enforcement Agency will issue a letter to the Applicant certifying completion upon receipt and approval of the final inspection reports and/or upon otherwise determining that all work of the Stormwater Management Permit has been satisfactorily completed in conformance with these rules and regulations, which letter shall be submitted by the owner or applicant to the Building Department prior to the issuance of a Certificate of Occupancy, if applicable.

Section 30. Enforcement

A. The Authorized Enforcement Agency or an authorized agent of the Authorized Enforcement Agency shall enforce these rules and regulations, the Stormwater Management Ordinance, orders, violation notices, and enforcement orders, and may pursue all civil and criminal remedies for such violations. The provisions are detailed in Chapter 154, Stormwater Management Ordinance of the City's Code of Ordinances, § 154-6. Civil and criminal remedies include but are not limited to:

1. Written notice of violation.

2. Issuance of a cease and desist order if the Authorized Enforcement Agency and/or its agent determines that conditions at the site are in violation of any of the requirements of this chapter, the regulations and/or the permit and that such violation is either an immediate threat to the environment, the public health or safety; or that the property owner has failed to take the corrective action(s) identified in a written notice of the violation issued under this chapter or has failed to take such corrective action within the time required in the notice of violation.

3. Injunctive relief in a court of appropriate jurisdiction.

4. Correction of violations by the Authorized Enforcement Agency or its agent. The provisions of this chapter impose duties upon persons subject to it and penalties for neglecting those duties. When the Authorized Enforcement Agency or its agent determines that a person, subject to this chapter, has breached one or more of the duties imposed hereunder, the Authorized Enforcement Agency or its agent can perform such duty or duties at the expense of the person having the duty. The expense cannot exceed the penalty imposed by the criminal enforcement sections of this chapter. Pursuant to the MGL c. 40, § 31, expense may be recovered in a contract action. The City hereby expressly declares these expenses to be municipal charges subject to the imposition of a municipal charges lien under the provisions of MGL c. 40, § 58. This lien shall take effect upon the recording of a list of the unpaid charges at the registry of deeds. If this fee or charge remains unpaid when the Assessors set the tax and warrant under MGL c. 59, § 53, this fee or charge shall be added to the tax even if the property is otherwise tax-exempt.

5. Noncriminal disposition. Whoever violates any provision of this chapter or a regulation promulgated by the Authorized Enforcement Agency, a condition contained in a permit issued by the Authorized Enforcement Agency, the conditions of notice of violation or the conditions on the cease and desist order may, in the discretion of the Authorized Enforcement Agency or its agent, be subject to the noncriminal procedure established pursuant to the provisions of MGL c. 40, § 21D. The penalty for the first violation shall be $50. The penalty for the second violation shall be $100. Each day on which a violation occurs shall be considered a separate offense.

6. Criminal prosecution for violation of any provision of this chapter, the permit and/or regulations promulgated by the Authorized Enforcement Agency. Any such violation shall be punished by a fine of $300 for each offense. Each day on which such violation continues shall constitute a separate offense.

B. The Authorized Enforcement Agency or its Agent may issue a written notice of violation to any person whom it determined is in violation of any of the requirements of this chapter, the regulations enacted by the Authorized Enforcement Agency or a permit and plan approved under this chapter. The notice of violation shall:

1. Specify the actions, conditions or omissions which create the violation;

2. Identify the necessary corrective actions;

3. Specify the time within which the violations must be corrected;

4. Be served by certified mail upon the violator with a copy maintained in the records of the Authorized Enforcement Agency.