



# NPDES MS4 Basics

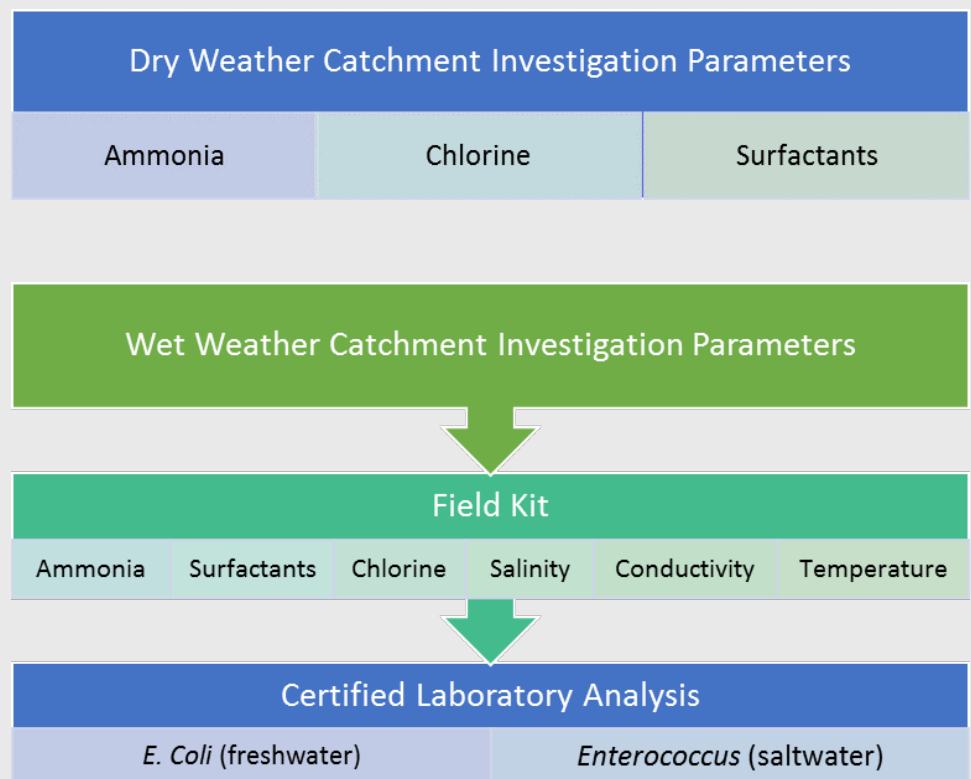
## Massachusetts

### Illicit Discharge Detection & Elimination: IDDE Catchment Investigation Minimum Measure #3

The recently released NPDES MS4 Stormwater Permit in Massachusetts includes 6 minimum measures. The program requirements for minimum measure #3 – Illicit Discharge Detection & Elimination involves several elements including mapping, outfall classification, and dry weather screening. The following information continues with these IDDE elements and focuses on Catchment Investigation.

**Catchment Investigations** – Communities must develop written catchment investigation procedures within 18 months of the permit effective date to systematically investigate each MS4 catchment. Procedures must include identification of **System Vulnerability Factors (SVFs)**, a manhole inspection methodology for **key junction manholes**, and procedures to **isolate and remove illicit discharges**.

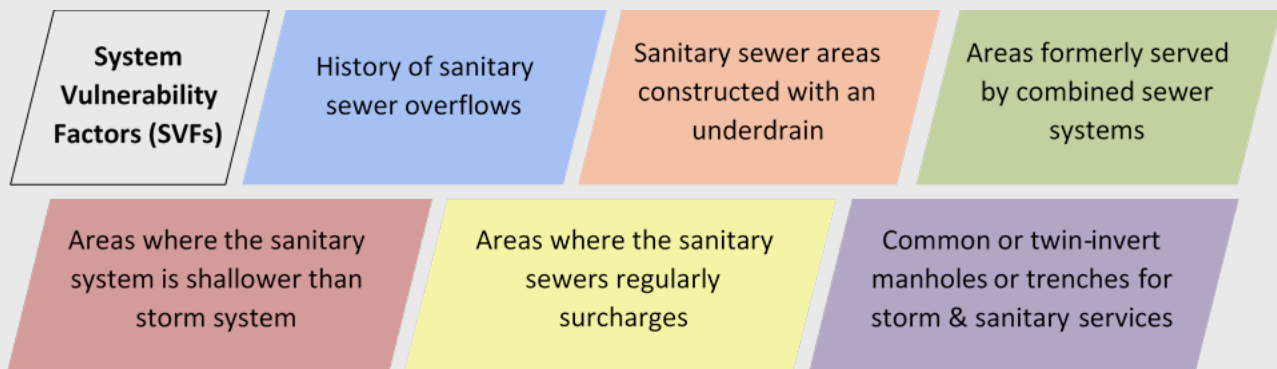
**Key Junction Manhole Inspections** – Within all catchments, key junction manholes (loosely defined as manholes or catch basins with inlets that can represent a discrete portion of a drainage system, such as a single street) must be investigated during dry weather for visual and olfactory (i.e. smell) illicit discharge evidence. If flow is observed, it must be sampled for: ammonia, chlorine and surfactants.





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**System Vulnerability Factors & Wet Weather Sampling** – As part of catchment investigations, communities must review relevant mapping and historic plans to identify areas with higher potential for illicit connections, or **System Vulnerability Factors (SVFs)**. For catchments having at least 1 SVF, wet weather outfall investigations must be performed, with samples collected and analyzed for the following: ammonia, surfactants, chlorine, salinity, conductivity, temperature, *E. Coli* (freshwater), and *Enterococcus* (saltwater). Note that each of these parameters can be evaluated with field kits with the exception of bacteria which must be analyzed by a certified laboratory.



**Removal and Elimination** – When the source of an illicit discharge has been located between two manholes, the source should be isolated and identified. Illicit discharges removed shall be documented, including location, dates, methodology used, etc. for reporting purposes.

### Schedule

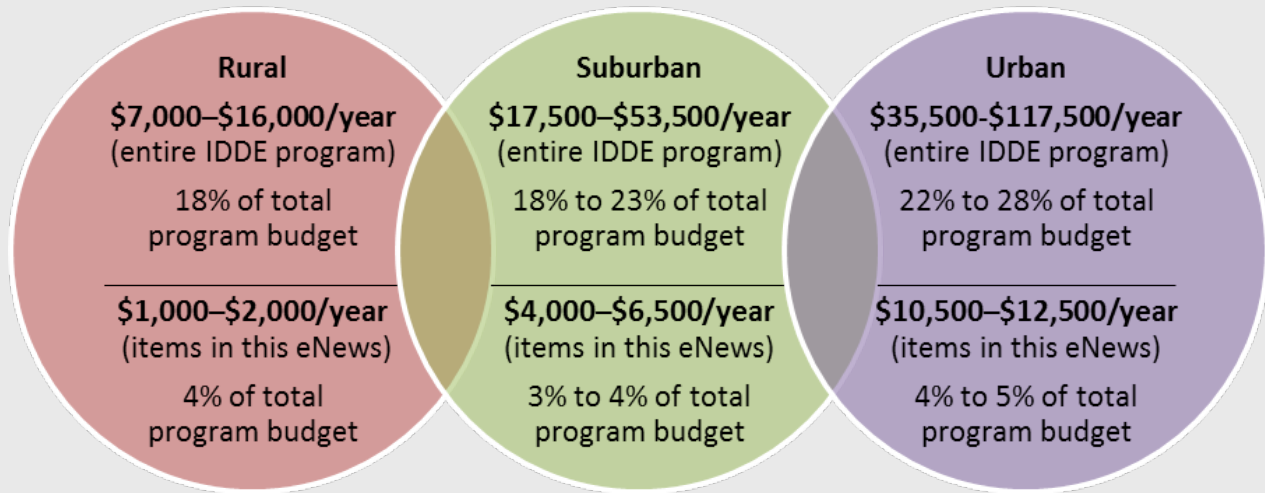
Permit Year	1	2	3	4	5	6	7	8	9	10	
Calendar Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Written Procedures	18 mos.										
Problem catchments	Start in 2 years, finish in 7 years										
High/low priority catch.	No start date, finish in 10 years										

**Resources** – The Central Massachusetts Regional Stormwater Coalition developed a number of Standard Operating Procedures (SOPs) to help communities implement the requirements of the 2003 permit. These are available at <http://centralmastormwater.org> and may be updated under new permit requirements.



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Budgeting – IDDE Program compliance costs will vary between communities depending on the number of drainage structures, key junction manholes, and system vulnerability factors. IDDE costs are estimated at 18% and 28% of MS4 budgets, while items outlined under catchment investigation are estimated at 3% to 5% of MS4 budgets.



Ongoing Activities – Dry and wet weather sampling should be performed at all outfalls every 5 years. All sampling data and illicit discharge removals should be documented and submitted as part of the annual report.

CEI has been providing stormwater design and NPDES compliance services to municipalities for over 20 years. With dozens of clients throughout Massachusetts and hundreds of successful projects, CEI provides elite technical support and exemplary customer service, on time and within your budget.

Ask about our new M\$4CASTER™ tool developed by CEI for pricing total, consultant, and municipal costs for the new MA MS4 Phase II Permit. CEI provides tailored, custom solutions designed for you.



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