

**Maine MS4 Permit 2022-2027: Anticipated PY1 costs to complete IDDE and monitoring dry weather outfalls**

**Basis for estimates**

1. and 2. Dry Weather Flow summary for Outfalls:	all mapped outfalls	Number that Flowed during dry weather	1. # Inspected each year (100% piped, 20% ditch)	2. # to be monitored per year (20%)
Permit Year 8 Inspections - piped outfalls	251	78	251	16
Used Permit Years 5, 6, 7 and 8 - ditch outfalls	117	30	23	6
The Permit requirement is to sample all outfalls that are flowing once over the five year period. So if you will be conducting your dry weather monitoring over the five year period, you will monitor 20% of the flowing outfalls each year. Check IDDE Plan for frequency.				
<b>3. Prior Investigations summary for Outfalls</b>		<b># in PY6</b>	<b># in PY7</b>	<b># in PY8</b>
How many outfalls were investigated for illicit discharges each year in the following years:		8	7	6

(just fyi, percent of total outfalls that are flowing)  
31%  
26%

Staff time or Third Party Expenses	Staff Time (hours)	Expense/Cost (if by third party)	Discussion/notes
------------------------------------	--------------------	----------------------------------	------------------

1. Outfall inspection time - Check your IDDE Plan for frequency of inspections. Enter staff time or third-party costs here based on prior years' efforts.	120	\$ -	Done by one staff member, inspect 100% piped each year and 20% ditch each year (274 outfalls). Includes time to do a Quality Control review of data to ensure they inspected what they needed to, and that the data is right.
1. Update GIS data collection to reflect change in permit observation requirements - To be completed in time for Permit Year 1 inspections (Check your IDDE Appendix).	20	\$ -	Need to review with GIS Manager. Add more time if you are going to add your Monitoring data to your GIS.
2. Staff Time to complete additional monitoring - takes ~1/2 hour per sample x 2 people plus preparation, transport time to post office or lab each day, and time to evaluate and do data review and entry for GIS or filing. Assume staff can sample 4-5 outfalls per day. We assumed 16 hours per 4 outfalls	86	\$ -	Extra staff time to help with monitoring. Take time to figure out which ones flow, and go to 4/day.
2. Staff time for hazardous waste management (if surfactant field test kit is used)	100	\$ -	Depends if you are setting up your own Haz waste program, or using a program set up in another department. Estimate shown for setting up own program, then management and training are about ~50 hours per year after that).
3. Illicit Discharge Investigative costs: Assume that 20% of your flowing outfalls will need some additional investigation each year, plus however many you would have budgeted for if you were not doing the dry weather monitoring. Depending on the contributing areas, this could require televising, dye testing of homes, additional sampling of flow into catch basins. Whatever you have budgeted for investigations in terms of staff time and costs, you may want to increase that number for subsequent years.	60	\$ -	Add to capital budget to ensure sufficient funds that roll from year to year if not used.
4. Elimination of Illicit Discharges: Will mostly be by private entities, but you may discover some municipal infrastructure that needs repair/replacement or correction for the Illicit discharge. Include both staff time to follow up and capital budget.	TBD	\$ -	Add to capital budget to ensure sufficient funds that roll from year to year if not used.
4. and 5. Ordinance Update: 2000 + 2010 Census, and source correction within 60 days of identification, unless an alternative "expeditious" schedule has been identified.	10	\$ -	Work with Planning Board
6. Keep IDDE Plan Current (annual review and update if needed)	8	\$ -	
7. Keeping Stormwater Maps up to date - You should be tracking small changes by public works and larger changes designed by third party contractors with as-builts		\$ -	Need to review with GIS Manager
<b>Total Additional Staff Time</b>	<b>404.4</b>	<b>0</b>	

2. Dry Weather Flow Monitoring Expenses	Notes	EstCost per unit	Number needed	PY1	Link for purchase
Bacteria analysis - Cost is for either fecal coliform, e-coli or enterococci at a commercial lab such as Maine Environmental (Yarmouth) or Nelson Analytical (Kennebunk)	By outside lab	\$ 40.00	22	\$ 864	<a href="#">put in link to lab here</a>
If your WWTP is doing analysis	put in cost for materials (IDEXX colliert/enterolett kits)	\$ 10.00	0	\$ -	<a href="https://www.idexx.com/en/water/water-products-services/colliert/">https://www.idexx.com/en/water/water-products-services/colliert/</a>
Bacteria analysis - suggest also budgeting for some Human Bacteroides as confirmation whether it's human or not. (\$87 for analysis plus shipping)	Assumed may have 33% of samples exceed bacteria threshold and need this for confirmation.	\$ 110.00	7	\$ 792	Possible Labs. EW3C (www.ems.com in Cinnamonsen, NJ), Microbial Insights (microbiemeinsights.com in TN) or Source Molecular (www.luminultra.com in FL) or Dr. Steve Jones, UNH
Hach Ammonia Test Strips (1 kit provides 25 test strips)	Pick only one method (test strips or laboratory analytical)	\$ 30.00	2	\$60	<a href="#">Hach AMMONIA STRIPS Ammonia (Nitrogen) Test Strips, 0 to 6.0 mg/L; 25 Strips/Pk from Cole-Parmer (coleparmer.com)</a>
Laboratory analysis		\$ 34.00	0	\$0	<a href="#">put in link to lab here</a>
Industrial systems ultra low chlorine test strips 0-0.2 mg/L (1 pak provides 30 tests)	Use both of these together. Or use the Hach Chlorine Colorimeter	\$ 30.00	2	\$ 60	<a href="#">Ultra-Low Total Chlorine Chemical Test Strips - Grainger Industrial Supply</a>
LaMotte Total chlorine test strips 0-5 mg/L (1 bottle provides 50 tests)		\$ 20.00	2	\$ 40	<a href="https://www.grainger.com/product/LAMOTTE-Test-Strip-Total-Chlorine-4EVU3">https://www.grainger.com/product/LAMOTTE-Test-Strip-Total-Chlorine-4EVU3</a>
Hach DR300 Pocket Colorimeter and case	Purchase colorimeter once, purchase reagents annually to prevent expiration	\$ 600.00	0	\$ -	<a href="#">DR300 Pocket Colorimeter, Chlorine, Free + Total, with Box   Hach USA - Overview</a>
Reagents for Hach DR300 Pocket Colorimeter (100 samples)		\$ 30.00	0	\$ -	<a href="#">DPD Total Chlorine Reagent Powder Pillows, 10 mL, pk/100   Hach USA - Overview</a>
Temperature/Conductivity Probe (Oakton, Thermal Scientific, or Ohaus are good names)	Budget one meter per year (just in case)	\$ 100.00	1	\$ 100.00	<a href="#">OHAUS Conductivity Meter, 0 to 1999 uS/cm Electric Conductivity Range, Waterproof IP67 - 45MJ061ST20C-B - Grainger</a>
Calibration reagents (suggest 84 uS/cm and 1500 uS/cm, but read meter instructions)	Purchase calibration reagents annually	\$ 20.00	2	\$ 40	<a href="https://www.grainger.com/product/LABCHEM-Conductivity-Standard-8UWK9">https://www.grainger.com/product/LABCHEM-Conductivity-Standard-8UWK9</a>
Surfactant Lab - short hold time - requires advance notice to lab.	Pick this, or the Surfactants Kit, or Optical Enhancers (not all three)	\$ 93.75		\$ -	Cost shown for MEL Lab in Yarmouth
Surfactants Kit (includes cost to perform 20 tests)	Include the costs to purchase the kit and dispose of the waste, and any staff time needed.	\$ 120.00	2	\$ 240	<a href="https://www.chemetrics.com/product/detergents-anionic-surfactants-mbas-chemets-visual-kit/">https://www.chemetrics.com/product/detergents-anionic-surfactants-mbas-chemets-visual-kit/</a>
Surfactant Kit Hazardous Waste Disposal		\$300	1	\$ 300	Cost for 5 gallon pail (more than any MS4 will generate in a year).
Optical Enhancers - bring to maine healthy beaches, coordinate in advance.		\$ -	0	\$ -	No cost, but need to coordinate with Megan Simms
Additional field kit items (plastic bin to store, sampling pole, gloves, beakers, DI water, paper towels, clip board, garbage bag, dedicated cooler, packaging tape, labels, zip lock baggies, etc.)		\$ 400.00	1	\$ 400.00	See QAPP in IDDE Plan for kit recommendation.
iPad or electronic data device replacement		\$ 1,000.00	1	\$ 1,000	Includes iPad, case and keyboard
<b>Total Additional Staff Time and Expenses (including third party contractors and laboratory)</b>			<b>404.4</b>	<b>\$ 3,896.00</b>	