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1 SNOW AND ICE REMOVAL PLAN 2024

Beginning in 2019, DOEE began coordinating with the District of Columbia Department of Public Works (DPW) to design a pilot project that would evaluate different strategies to reduce road salt use in the District. The goal of the project is to test alternative treatment scenarios that could be incorporated into standard snow removal practices. During the 2021-2022 winter season, there was only one qualifying snow event, and the pilot project was implemented successfully during that event. During the 2022-2023 winter season and the 2023-2024 winter season, there were no qualifying snow events. DPW has requested to attempt the currently designed pilot in the 2024-2025 winter season with a goal of implementing the pilot for 2-3 additional events.

In addition to the one successful test run of the pilot, DOEE and DPW accomplished the following during the current reporting year:

- DOEE and DPW held bi-weekly planning meetings through the fall/winter of 2023-2024.
- DPW held an in-person training for 11 truck drivers detailed to this pilot on January 31st, 2024.

The following page provides a current overview of the road salt pilot as of the date of this report's submission.

District of Columbia Deicing Alternatives Pilot Overview
"Road Salt Reduction Pilot"

Background: The 2018 District of Columbia Government Municipal Separate Stormwater Sewer System (MS4) Permit requires the District to pilot salt alternatives and incorporate its findings into the District's snow removal strategy. This Road Salt Reduction Pilot will be continued during the FY23 Snow Season, provided favorable weather conditions occur.

Goal: DOEE will compare the effectiveness of alternative deicing practices including the use of a salt alternative, Calcium Magnesium Acetate (CMA) and the use of brine, with the existing deicing practice of dry road salt application (control scenario).

Selection of Alternatives: The deicing alternatives that were selected for this study represent treatment options that have shown success at reducing salt use in other jurisdictions. Calcium Magnesium Acetate (CMA) has been shown to be a more environmentally friendly alternative to road salt, while still protecting public safety in deicing operations. The use of brine has also shown the ability to reduce the use of salt in deicing operations, since brine is less likely to bounce off the road.

Qualifying Events: To best target the effectiveness of each deicing treatment scenario, the pilot will only be deployed during events where plowing will not be needed. The qualifying weather conditions are listed below:

- Ice, freezing rain, slush, and winter mix
- Trace to 2 inches of snow

Test Design: DOEE and DPW have identified 6 snow plow routes (specifically the primary road portions of these routes) to execute the pilot testing during winter weather events. The three treatment scenarios (Control, brine, and CMA) will be run in duplicate for each event. It is anticipated that this pilot test will be deployed on the identified routes during as many qualifying events as feasible during the 2024-2025 snow season. It is the goal of this project to deploy and evaluate the treatment scenarios described in this pilot plan during at least 3 events beyond the initial "test" event. Limitations such as quantity of deicing chemicals and qualifying events will ultimately determine the total number events captured by this pilot.

Evaluation of Alternatives: DOEE anticipates using a variety of data points collected during the pilot test to evaluate the effectiveness of each treatment alternative including:

- Cost of treatment
- Weather and road conditions after product application
- Feedback on implementation procedures and product effectiveness from snow plow drivers, Tetra Tech staff, and the public

2 EVALUATION OF THE STORMWATER MANAGEMENT PROGRAM

The District's MS4 Annual Report, Section 4.7, requires a data synthesis of programmatic and watershed indicators.

4.7.1 Programmatic Indicators

The Permittee shall evaluate the effectiveness of the SWMP using multiple programmatic indicators linked to the requirements in Part 3 of this permit. The Annual Reporting Template in Appendix A of this permit identifies the programmatic indicators used to evaluate the success of implementing stormwater control measures.

As required by Section 4.7.1, the effectiveness of the Stormwater Management Program is evaluated using the programmatic indicators found in Part 3 of the MS4 Permit. The Annual Report describes implementation of these programs in this reporting year. In interest of doing a complete synthesis, indicators are being reviewed over the life of multiple permit terms. As seen in the text and figures below, major program indicators have seen a steady progression in implementation.

Catch Basin Cleaning Activities (Section 3.3.4)

Through the development of the DC Water Catch Basin Cleaning App, DOEE has increased the resolution at which it can report catch basin cleaning within the District. In previous permit terms DOEE was limited to reporting the number of catch basins cleaned over the entire jurisdiction. Now DOEE is able to report the number of catch basins that were cleaned specifically within the area of the city serviced by the MS4. Using data from the DC Water Catch Basin Cleaning App, DOEE has determined that there are 15,128 total catch basins within the MS4 area of the District. The number of catch basins cleaned in the MS4 area of DC was 3,748. This number is an underestimate of cleanings that occurred this reporting year due to shortages of catch basin cleaning vehicles and trained staff. This value represent the number of unique catch basins that were cleaned, not the number of cleaning events. It should be noted that some catch basins were cleaned more than once during the reporting year, which is not reflected in the numbers reported. The District uses catch basin cleaning data to report to the Chesapeake Bay Program for Total Nitrogen, Total Phosphorus and Total Suspended Solids TMDL progress tracking.

Table 1. Estimated Pollutant Pounds Removed from Catch Basin Cleaning (Citywide)

Parameter	Pounds Removed
Total Nitrogen	2,969
Total Phosphorus	453
Total Suspended Solids	299,984

Construction Activities (Section 3.5)

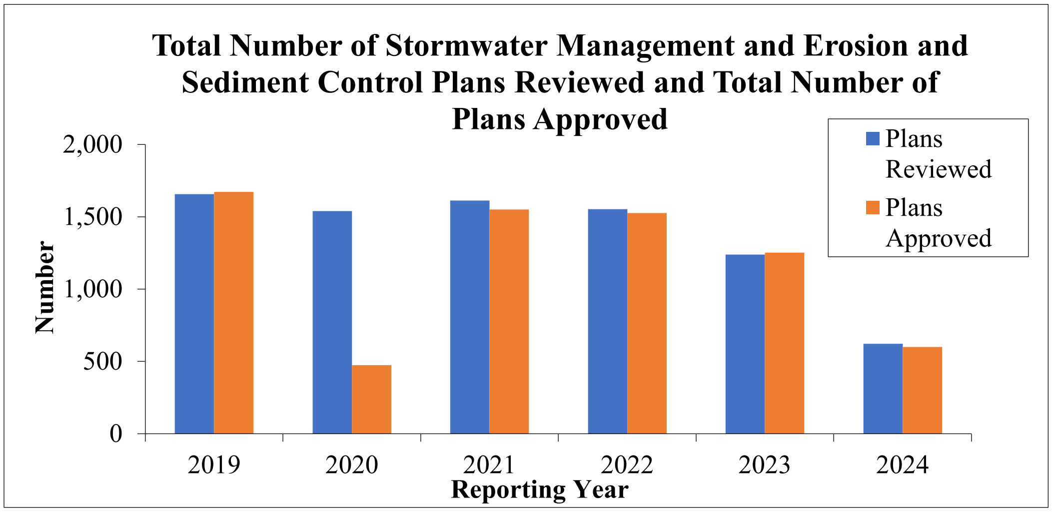

Figure 1 Total Number of Stormwater Management and Erosion and Sediment Control Plans Reviewed and Total Number of Plans

Targeted Trash and Litter Pollutant Controls (Section 3.7)

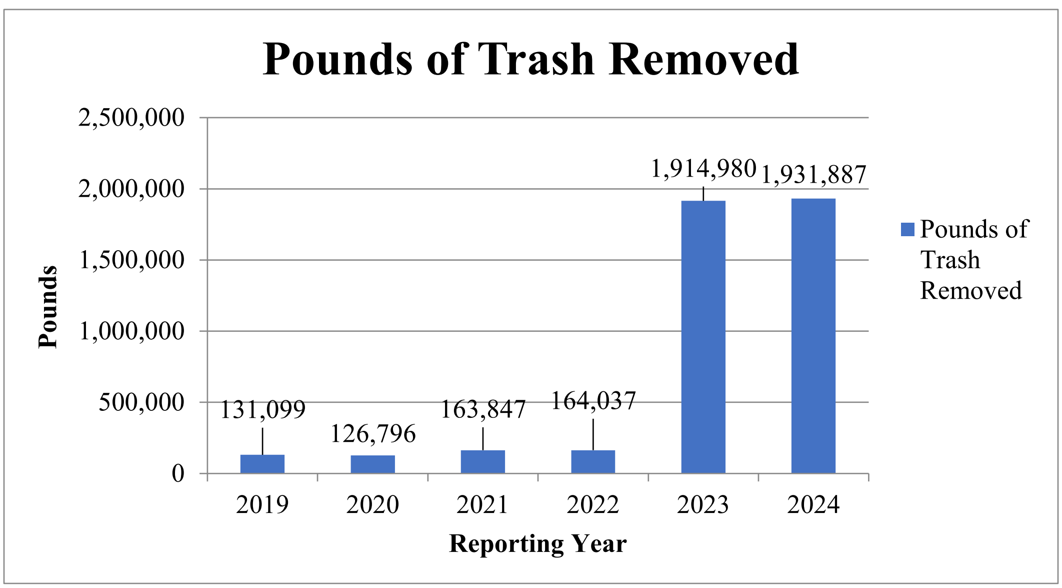

Figure 2 Pounds of Trash Removed Over Time

In 2023, DOEE updated their trash reduction calculations to better reflect the Anacostia Trash multi-jurisdictional collaboration trash metrics for tracking and reporting trash reductions. These changes yield considerably higher reductions than seen in previous annual reports.

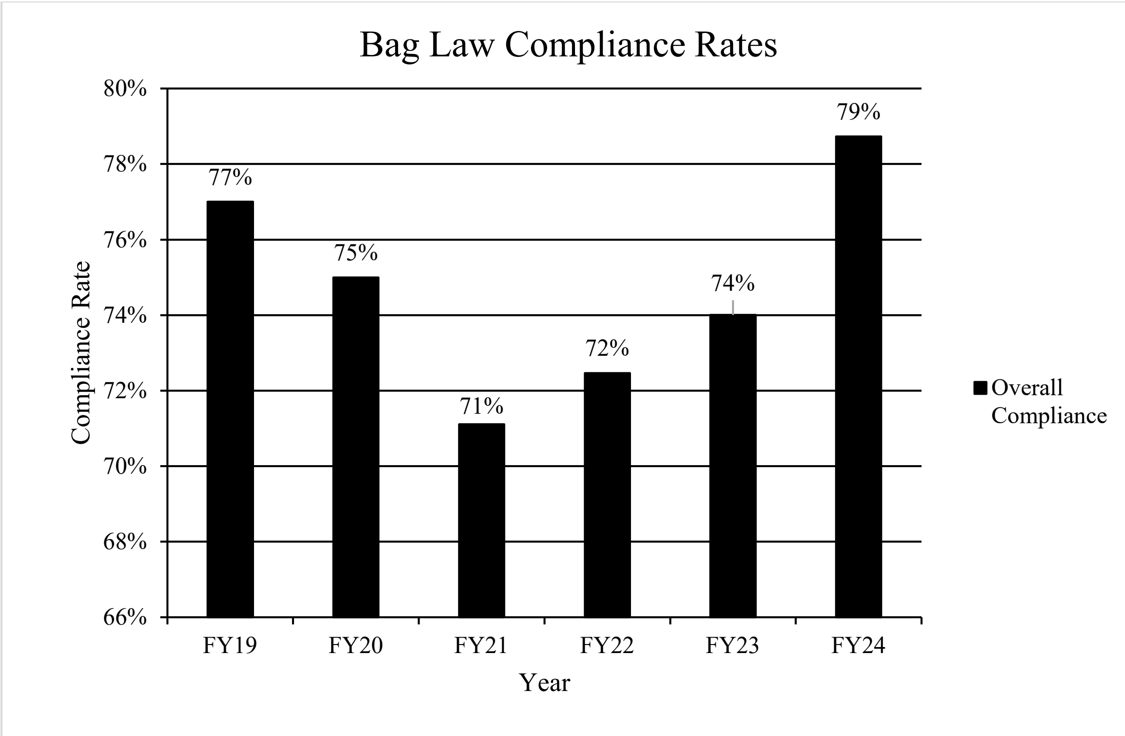

Figure 3 Bag Law Compliance Rates Over Time

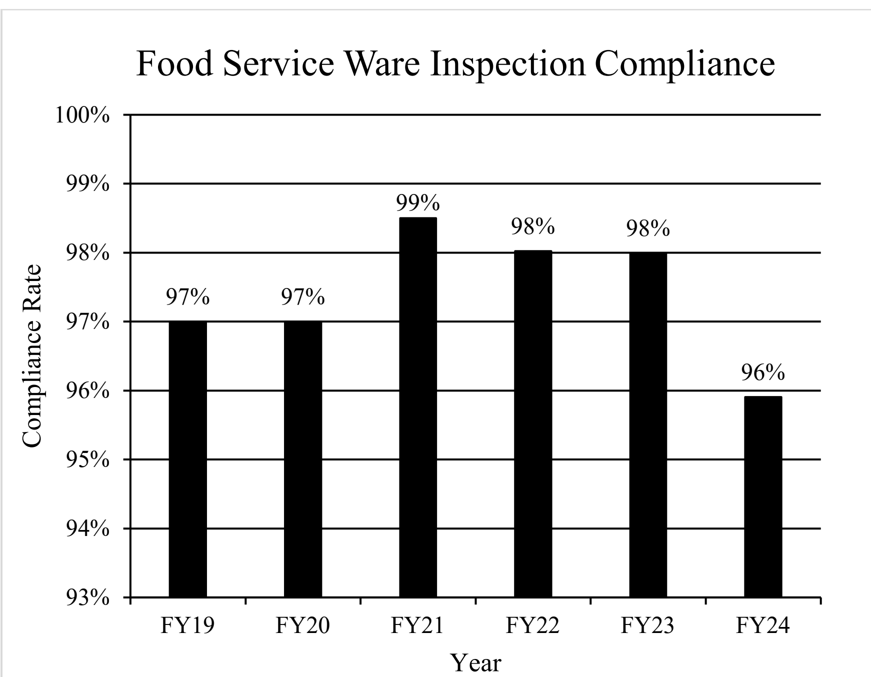

Figure 4 Food Service Ware Inspection, including foam ban, Compliance Rates

Table 2 Coal Tar Pavement Sealant Ban Inspections and Compliance Rates

Fiscal Year	Inspections	Positive CT Field Tests	Overall Compliance (%)
FY19	63	1	100
FY20	63	0	100
FY21	45	0	100
FY22	60	0	100
FY23	60	0	100
FY24	60	0	100
TOTALS:	351	1	-

4.7.2 Watershed Indicators

The Permittee shall also evaluate the effectiveness of the SWMP using multiple watershed indicators linked mostly to the assessment requirements of Part 4 of this permit, and the synthesis of those data through analysis and modeling.

In the 2024 reporting year, DOEE continued implementing the Receiving Waters Assessment Program as required in Section 4.3 of the District's MS4 Permit. As part of this program, DOEE has developed a Rapid Stream Assessment (RSA). The intent of the RSA is to collect information to provide a high-level overview of the entire wadeable stream network within the District. This information can help identify potential issues as well as locations that may warrant follow-up inspections or more in-depth evaluations. The information from the RSA can also serve as a baseline with which to compare information from these assessments in the future. All data collected as part of this program is housed in ArcGIS.

DOEE completed a baseline assessment of all wadeable streams within the District since the RSA began in 2019. DOEE field teams started surveying streams for a second time during the 2024 reporting period. The teams surveyed approximately 16 miles of stream during the 2024 reporting period. Figure 5 shows all assessed streams to date, highlighting those assessed during the 2024 reporting year in red. DOEE submitted an updated RSA Quality Assurance Program Plan to EPA, and it was approved during the 2024 reporting year.

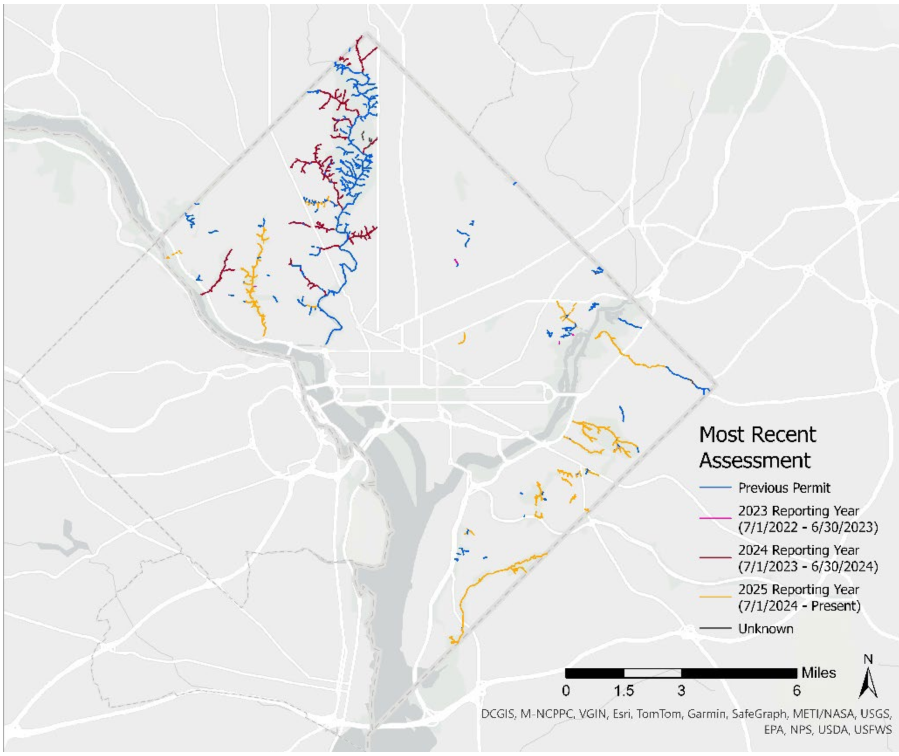

Figure 5 Rapid Stream Assessment Achievements

4.2 Wet Weather Discharge Monitoring

The Permittee shall conduct wet weather discharge monitoring for all the pollutants in Table 7 for a minimum of three wet weather events, as defined in Subsection 4.2.4 of this permit, each year. The Permittee shall report the results of each event in the DMR.

DOEE continues to implement a wet weather monitoring program at representative outfalls, Table 3. The minimum number of three wet weather sampling events per site could not be achieved at all monitoring sites. The limitations encountered include:

- Lack of sufficient qualifying wet weather events.
  - This was an uncharacteristically dry reporting year. See, https://www.potomacriver.org/news/junes-water-supply-outlook/.
  - Additionally, in recent years, the intensity, frequency, duration, and spatial distribution over the MS4 Permit Area have not met EPA's guidance for qualifying rainfall. The rainfalls are more intense, less frequent, and of short duration. It is common that rain will occur in one part of the city but not in areas where out outfalls are scheduled for sample collection.

The wet weather sampling summary data for the required monitoring parameters is detailed in Table 4, Table 5, and Table 6. The geometric mean for each parameter was calculated to represent the event mean concentration (EMC).

Table 3 Monitoring Site Information

Site	Outfall	Watershed
SW1	Outfall 999 - Gallatin	Anacostia
SW2	Outfall 124 - Oxon Run	Potomac
SW3	Outfall 851 - Soapstone Creek	Rock Creek
SW4	Outfall 1035 - Kenilworth and Douglas	Anacostia
SW5	Outfall 260 - 53rd and Dix Street	Anacostia
SW6	Outfall 950 - Potomac Tributary	Potomac
SW7	Outfall 103 - Oxon Run	Potomac
SW8	Outfall 825 - Tilden and Reno	Rock Creek
SW9	Outfall 901 - Tributary to Pinehurst Br.	Rock Creek

Table 4 Potomac Watershed Wet Weather Sampling Data 2023-2024, geometric mean

		Potomac River Watershed		
Parameter	**Unit**	**SW2**	**SW6**	**SW7**
Total Suspended Solids	mg/L	2.7203	23.9164	105.8773
Nitrogen, Total as N	mg/L	2.9767	2.9183	3.0447
Phosphorus, Total (as P)	mg/L	0.0367	0.2705	0.6859
Copper	mg/L	0.0070	0.0154	0.0358
Lead	mg/L	0.0010	0.0028	0.0081
Zinc	mg/L	0.0154	0.0580	0.2072
Cadmium	mg/L	0.0003	0.0003	0.0003
E. Coli	MPN/100ml	456.0702	1600.0000	1213.2601

Table 5 Anacostia Watershed Wet Weather Sampling Data 2023-2024, geometric mean

		Anacostia River Watershed		
Parameter	**Unit**	**SW1**	**SW4**	**SW5**
Total Suspended Solids	mg/L	17.3205	6.0967	17.7172
Nitrogen, Total as N	mg/L	3.5430	2.1030	1.0583
Phosphorus, Total (as P)	mg/L	0.3477	0.0902	0.0820
Copper	mg/L	0.0094	0.0051	0.0042
Lead	mg/L	0.0028	0.0013	0.0014
Zinc	mg/L	0.1417	0.0374	0.0349
Cadmium	mg/L	0.0003	0.0003	0.0003
E. Coli	MPN/100ml	1600.0000	1600.0000	748.3315

Table 6 Rock Creek Watershed Wet Weather Sampling Data 2023-2024, geometric mean

		Rock Creek Watershed		
Parameter	**Unit**	**SW3**	**SW8**	**SW9**
Total Suspended Solids	mg/L	42.1851	35.2177	18.6626
Nitrogen, Total as N	mg/L	3.2994	2.7796	2.1602
Phosphorus, Total (as P)	mg/L	0.6116	0.2695	0.3086
Copper	mg/L	0.0216	0.0153	0.0141
Lead	mg/L	0.0046	0.0038	0.0014
Zinc	mg/L	0.0872	0.0885	0.0459
Cadmium	mg/L	0.0003	0.0003	0.0003
E. Coli	MPN/100ml	1600.0000	1600.0000	1600.0000

Table 6 provides the annual cumulative pollutant load occurring in the three main watersheds within the District.

Table 7 Annual Cumulative Pollutant Load in Each Watershed

4.18. Per Subsection 4.6.2.1, Estimated Annual Cumulative Pollutant Loads in this Reporting Year (Reporting Period July1, 2023 – June 30, 2024).					
	Rock Creek	**Anacostia River**	**Potomac River**	**Total**	**Units**
Total Suspended Solids	545.99	937.85	998.48	2,482.32	Tons
Total Nitrogen	86,154.38	408,848.98	133,394.36	628,397.73	pounds
Total Phosphorous	14,354.53	36,061.65	14,873.65	65,289.82	pounds
Copper	544.67	575.11	872.57	1,992.35	pounds
Lead	117.46	163.07	178.65	459.18	pounds
Zinc	2,361.95	7,226.01	4,219.94	13,807.90	pounds
Cadmium	8.89	19.83	12.15	40.88	pounds
E. Coli	6.41E+13	9.36E+14	2.19E+14	1.22E+15	MPN

DOEE calculated the potential pollutant load and volume reductions achieved through the annual BMP implementation, Table 7. The load and volume reduction estimates were developed using the District's Implementation Plan Modeling Tool (IPMT). With the permit's green roof installation requirement being met this reporting period, DOEE has also included the square footage of green roofs installed in each watershed to date, Table 8.

Table 8 Pollutant Load Reductions, 07/01/2023 - 06/30/2024

Watershed	**Runoff Retained (gallons)**	**TN (lbs)**	**TP (lbs)**	**TSS (lbs)**	**Copper (lbs)**	**Lead (lbs)**	**Cadmium[1] (lbs)**	**Zinc (lbs)**	**E. *coli* (Billion MPN)**
Anacostia	47,484,934	1,371	160	32,330	21.90	6.68	7.32	50.38	10,371
Rock Creek	9,024,208	257	29	3,723	4.04	1.22	1.34	7.75	1,905
Potomac River	10,155,171	289	33	3,734	4.57	1.39	1.52	8.75	2,159
Total	**66,664,313**	**1,918**	**222**	**39,787**	**30.5**	**9.3**	**10.2**	**66.88**	**14,435**

1. An EPA report (402-R-99-004B- linked below) that reviewed several studies with varied site conditions has documented mean partition coefficients for metals. DOEE used these metal-specific partition coefficients (Kd) and associated particle associated fraction (fp) values to model pollutant reduction for these metals through BMP

implementation. Since many of the relevant low impact development (LID) practices have similar removal rates for lead and cadmium, the relationship between these two metals, their fp values, and the areas retrofitted were used to estimate cadmium reductions achieved through the Retrofit Program. DOEE will continue to use this methodology to estimate the pollutant load reduction for cadmium in Annual Reports.
EPA Report: http://www.epa.gov/sites/production/files/2015-05/documents/402-r-99-004b.pdf
2. Note that summations include MS4, Direct Drainage, and CSS areas.

As required, DOEE has attached all WLA benchmarks to this annual report, Table 11. This table provides a watershed scale summary that includes load reductions from the MS4 and direct drainage area for each non-CSS watersheds. The color coding indicates whether the Wasteload Allocation (WLA) has been achieved for that waterbody/pollutant combination, Table 9.

Table 9 Table Key

Green cells indicate that the WLA has already been achieved for that waterbody and pollutant combination.
Blue cells indicate that the benchmark load reduction was achieved or exceeded for that waterbody and pollutant combination.
Orange cells indicate that the benchmark load reduction was not achieved for that waterbody and pollutant combination.
Grey cells indicate that there is no MS4 WLA for that waterbody and pollutant combination, and therefore no benchmark has been established. Load reductions are provided for informational purposes only.

Table 10 Overall Summary of WLA Benchmark Achievements, 07/01/2023 - 06/30/2024

WLA Achieved	26
Benchmark Achieved	30
Benchmark Not Achieved	106
No WLA or benchmark	894

Table 11 Pollutant Load Reductions from BMP Implementation with WLA Benchmarks, 07/01/2023 to 06/30/2024

Watershed	Runoff Retained (gallons)	TN (lbs)	TP (lbs)	TSS (lbs)	Fecal Coliform (billion MPN)	BOD (lbs)	Oil and Grease (lbs)	Arsenic (lbs)	Copper (lbs)	Lead (lbs)	Cadmium[1] (lbs)	Mercury (lbs)	Zinc (lbs)	Chlordane (lbs)	DDD (lbs)	DDE (lbs)	DDT (lbs)	Dieldrin (lbs)	Heptachlor Epoxide (lbs)	PAH 1 (lbs)	PAH2 (lbs)	PAH 3 (lbs)	TPCB (lbs)	*E. coli* (Billion MPN)
Anacostia	34,014,210	988.17	116.02	23,676.5	18,599	10,319	1,304.9	4.6E-01	1.6E+01	4.8E+00	5.3E+00	5.6E-02	3.6E+01	2.8E-03	8.9E-04	4.0E-03	1.0E-02	8.2E-05	2.7E-04	1.9E-01	1.2E+00	8.1E-01	2.4E-02	7,464.5
Anacostia Lower	18,392,735	523.04	61.29	11,824.2	9,906	5,516	733.4	2.4E-01	8.4E+00	2.6E+00	2.8E+00	3.0E-02	1.9E+01	1.5E-03	4.8E-04	2.1E-03	5.5E-03	4.5E-05	1.5E-04	1.0E-01	6.5E-01	4.3E-01	1.3E-02	3,975.6

Anacostia Upper	15,621,475	465.13	54.72	11,852.3	8,693	4,803	571.5	2.1E-01	7.3E+00	2.3E+00	2.5E+00	2.6E-02	1.7E+01	1.3E-03	4.2E-04	1.9E-03	4.8E-03	3.8E-05	1.2E-04	8.6E-02	5.6E-01	3.8E-01	1.1E-02	3,488.9
ANATF_DC	30,338,120	694.78	84.56	20,229.1	13,063	7,089	982.1	3.2E-01	1.1E+01	3.4E+00	3.7E+00	3.9E-02	2.5E+01	2.0E-03	6.3E-04	2.8E-03	7.2E-03	5.6E-05	1.9E-04	1.3E-01	8.4E-01	5.7E-01	1.7E-02	5,242.5
ANATF_MD	4,696,260	94.78	10.72	2,027.9	1,711	981	99.7	4.2E-02	1.5E+00	4.4E-01	4.8E-01	5.2E-03	3.3E+00	2.7E-04	8.3E-05	3.7E-04	9.4E-04	7.9E-06	2.6E-05	1.8E-02	1.1E-01	7.4E-02	2.2E-03	686.6
Battery Kemble Creek	86,916	2.60	0.30	33.2	48	20	2.4	1.2E-03	4.0E-02	1.2E-02	1.4E-02	1.4E-04	7.7E-02	7.2E-06	2.3E-06	1.0E-05	2.6E-05	2.1E-07	6.9E-07	4.8E-04	3.1E-03	2.1E-03	6.1E-05	19.1
Broad Branch	806,707	22.90	2.60	400.7	418	159	27.9	1.0E-02	3.6E-01	1.1E-01	1.2E-01	1.3E-03	6.9E-01	6.6E-05	2.0E-05	9.0E-05	2.3E-04	2.0E-06	6.4E-06	4.4E-03	2.8E-02	1.8E-02	5.4E-04	167.6
C&O Canal	729,022	20.29	2.32	256.0	377	171	20.4	9.4E-03	3.2E-01	9.7E-02	1.1E-01	1.2E-03	6.1E-01	6.0E-05	1.8E-05	8.1E-05	2.1E-04	1.8E-06	5.8E-06	4.0E-03	2.5E-02	1.6E-02	4.9E-04	151.5
Dalecarlia Tributary	788,488	21.96	2.51	276.8	408	185	22.0	1.0E-02	3.5E-01	1.0E-01	1.1E-01	1.3E-03	6.6E-01	6.5E-05	2.0E-05	8.8E-05	2.3E-04	1.9E-06	6.3E-06	4.3E-03	2.7E-02	1.8E-02	5.3E-04	163.8
Dumbarton Oaks	9,515	0.26	0.03	4.7	5	2	0.3	1.2E-04	4.2E-03	1.3E-03	1.4E-03	1.5E-05	8.1E-03	7.8E-07	2.4E-07	1.1E-06	2.7E-06	2.3E-08	7.6E-08	5.2E-05	3.3E-04	2.1E-04	6.4E-06	2.0
Fenwick Branch	52,788	1.52	0.17	26.2	27	10	1.8	6.8E-04	2.3E-02	7.0E-03	7.7E-03	8.4E-05	4.5E-02	4.3E-06	1.3E-06	5.9E-06	1.5E-05	1.3E-07	4.2E-07	2.9E-04	1.8E-03	1.2E-03	3.6E-05	11.0
Fort Chaplin Tributary	41,233	1.39	0.15	25.2	21	12	1.3	5.3E-04	1.8E-02	5.5E-03	6.0E-03	6.5E-05	4.2E-02	3.4E-06	1.0E-06	4.6E-06	1.2E-05	1.0E-07	3.3E-07	2.3E-04	1.4E-03	9.2E-04	2.8E-05	8.6
Fort Davis Tributary	947,787	27.05	3.28	892.1	491	284	28.9	1.2E-02	4.2E-01	1.3E-01	1.4E-01	1.5E-03	9.6E-01	7.8E-05	2.4E-05	1.1E-04	2.7E-04	2.3E-06	7.6E-06	5.2E-03	3.3E-02	2.1E-02	6.4E-04	196.9
Fort Dupont Tributary	19,550	0.60	0.07	12.0	10	6	0.6	2.5E-04	8.6E-03	2.6E-03	2.8E-03	3.1E-05	2.0E-02	1.6E-06	4.9E-07	2.2E-06	5.6E-06	4.7E-08	1.6E-07	1.1E-04	6.8E-04	4.4E-04	1.3E-05	4.1

Fort Stanton Tributary	30,131	0.85	0.10	18.4	16	9	0.9	3.9E-04	1.3E-02	4.0E-03	4.4E-03	4.8E-05	3.0E-02	2.5E-06	7.5E-07	3.3E-06	8.6E-06	7.3E-08	2.4E-07	1.7E-04	1.0E-03	6.7E-04	2.0E-05	6.3
Foundry Branch	33,303	0.92	0.11	11.7	17	8	0.9	4.3E-04	1.5E-02	4.4E-03	4.9E-03	5.3E-05	2.8E-02	2.7E-06	8.3E-07	3.7E-06	9.5E-06	8.1E-08	2.7E-07	1.8E-04	1.2E-03	7.5E-04	2.2E-05	6.9
Hickey Run	2,643,420	81.44	10.04	1,948.8	1,592	793	166.5	3.8E-02	1.3E+00	4.2E-01	4.6E-01	4.7E-03	3.1E+00	2.3E-04	7.6E-05	3.4E-04	8.8E-04	6.4E-06	2.1E-05	1.5E-02	9.9E-02	7.1E-02	2.0E-03	638.9
Kingman Lake	86,678	3.14	0.36	73.3	58	26	2.6	1.4E-03	4.8E-02	1.5E-02	1.7E-02	1.7E-04	1.1E-01	7.7E-06	2.8E-06	1.3E-05	3.2E-05	2.1E-07	6.9E-07	4.8E-04	3.4E-03	2.7E-03	7.2E-05	23.4
Klingle Valley Run	83,468	2.61	0.30	46.4	47	16	2.9	1.1E-03	4.0E-02	1.2E-02	1.3E-02	1.4E-04	7.7E-02	7.0E-06	2.3E-06	1.0E-05	2.6E-05	2.0E-07	6.7E-07	4.6E-04	3.0E-03	2.1E-03	6.0E-05	18.9
Lower Beaverdam Creek																								
Luzon Branch	1,266,240	36.32	4.20	661.9	681	250	49.1	1.7E-02	5.8E-01	1.8E-01	1.9E-01	2.1E-03	1.1E+00	1.0E-04	3.3E-05	1.5E-04	3.8E-04	3.1E-06	1.0E-05	7.0E-03	4.5E-02	3.0E-02	8.8E-04	273.2
Melvin Hazen Valley Branch	70,214	2.01	0.23	34.9	36	14	2.4	9.0E-04	3.1E-02	9.3E-03	1.0E-02	1.1E-04	6.0E-02	5.8E-06	1.8E-06	7.8E-06	2.0E-05	1.7E-07	5.6E-07	3.9E-04	2.4E-03	1.6E-03	4.7E-05	14.6
Nash Run	3,015,139	88.74	10.23	2,014.9	1,675	935	101.5	4.1E-02	1.4E+00	4.3E-01	4.7E-01	5.0E-03	3.3E+00	2.5E-04	8.0E-05	3.6E-04	9.2E-04	7.3E-06	2.4E-05	1.7E-02	1.1E-01	7.3E-02	2.1E-03	672.1
Normanstone Creek	167,188	4.63	0.53	83.0	87	33	5.8	2.1E-03	7.4E-02	2.2E-02	2.4E-02	2.7E-04	1.4E-01	1.4E-05	4.2E-06	1.9E-05	4.8E-05	4.0E-07	1.3E-06	9.2E-04	5.8E-03	3.7E-03	1.1E-04	34.7
Northwest Branch	4,163,203	118.91	13.50	2,574.0	2,173	1,249	126.8	5.4E-02	1.9E+00	5.6E-01	6.1E-01	6.6E-03	4.2E+00	3.4E-04	1.0E-04	4.7E-04	1.2E-03	1.0E-05	3.3E-05	2.3E-02	1.5E-01	9.4E-02	2.8E-03	872.0
Oxon Run	3,187,804	90.02	10.34	1,141.2	1,673	750	94.0	4.1E-02	1.4E+00	4.3E-01	4.7E-01	5.1E-03	2.7E+00	2.6E-04	8.1E-05	3.6E-04	9.2E-04	7.7E-06	2.5E-05	1.8E-02	1.1E-01	7.3E-02	2.2E-03	671.4
Pinehurst Branch	109,399	3.10	0.35	54.3	57	22	3.8	1.4E-03	4.8E-02	1.5E-02	1.6E-02	1.7E-04	9.3E-02	9.0E-06	2.7E-06	1.2E-05	3.1E-05	2.6E-07	8.7E-07	6.0E-04	3.8E-03	2.4E-03	7.4E-05	22.7

Piney Branch	11,621	0.32	0.04	5.8	6	2	0.4	1.5E-04	5.1E-03	1.5E-03	1.7E-03	1.8E-05	9.9E-03	9.5E-07	2.9E-07	1.3E-06	3.3E-06	2.8E-08	9.3E-08	6.4E-05	4.0E-04	2.6E-04	7.8E-06	2.4
Pope Branch	32,554	0.97	0.11	19.9	17	10	1.0	4.2E-04	1.4E-02	4.3E-03	4.7E-03	5.2E-05	3.3E-02	2.7E-06	8.2E-07	3.6E-06	9.3E-06	7.9E-08	2.6E-07	1.8E-04	1.1E-03	7.3E-04	2.2E-05	6.8
Portal Branch	12,687	0.35	0.04	6.3	7	3	0.4	1.6E-04	5.6E-03	1.7E-03	1.8E-03	2.0E-05	1.1E-02	1.0E-06	3.2E-07	1.4E-06	3.6E-06	3.1E-08	1.0E-07	7.0E-05	4.4E-04	2.8E-04	8.5E-06	2.6
Potomac Lower	4,159,820	117.14	13.43	1,482.5	2,176	978	121.2	5.4E-02	1.9E+00	5.6E-01	6.1E-01	6.6E-03	3.5E+00	3.4E-04	1.1E-04	4.7E-04	1.2E-03	1.0E-05	3.3E-05	2.3E-02	1.4E-01	9.4E-02	2.8E-03	873.3
Potomac Middle	2,364,226	70.38	8.12	912.3	1,308	554	72.9	3.2E-02	1.1E+00	3.4E-01	3.7E-01	3.9E-03	2.1E+00	2.0E-04	6.3E-05	2.8E-04	7.2E-04	5.7E-06	1.9E-05	1.3E-02	8.4E-02	5.8E-02	1.7E-03	524.8
Potomac Upper	3,343,189	93.10	10.64	1,176.4	1,734	784	93.5	4.3E-02	1.5E+00	4.5E-01	4.9E-01	5.3E-03	2.8E+00	2.7E-04	8.4E-05	3.7E-04	9.6E-04	8.1E-06	2.7E-05	1.8E-02	1.2E-01	7.5E-02	2.3E-03	695.8
POTTF_DC	11,256,249	186.80	21.43	2,534.3	3,458	1,500	204.4	8.5E-02	2.9E+00	8.9E-01	9.8E-01	1.1E-02	5.6E+00	5.4E-04	1.7E-04	7.4E-04	1.9E-03	1.6E-05	5.2E-05	3.6E-02	2.3E-01	1.5E-01	4.5E-03	1,387.8
POTTF_MD	851,068	14.69	1.68	184.7	272	123	14.7	6.8E-03	2.3E-01	7.0E-02	7.7E-02	8.3E-04	4.4E-01	4.3E-05	1.3E-05	5.8E-05	1.5E-04	1.3E-06	4.2E-06	2.9E-03	1.8E-02	1.2E-02	3.5E-04	109.3
Rock Creek Lower	449,845	12.88	1.47	228.4	237	89	15.6	5.9E-03	2.0E-01	6.1E-02	6.7E-02	7.2E-04	3.9E-01	3.7E-05	1.1E-05	5.1E-05	1.3E-04	1.1E-06	3.6E-06	2.5E-03	1.6E-02	1.0E-02	3.1E-04	95.0
Rock Creek Upper	2,810,407	79.98	9.16	1,428.9	1,480	555	102.6	3.7E-02	1.3E+00	3.8E-01	4.2E-01	4.5E-03	2.4E+00	2.3E-04	7.1E-05	3.2E-04	8.2E-04	6.8E-06	2.2E-05	1.5E-02	9.8E-02	6.4E-02	1.9E-03	594.0
Soapstone Creek	124,297	3.50	0.40	61.7	64	25	4.3	1.6E-03	5.5E-02	1.7E-02	1.8E-02	2.0E-04	1.1E-01	1.0E-05	3.1E-06	1.4E-05	3.5E-05	3.0E-07	9.9E-07	6.8E-04	4.3E-03	2.8E-03	8.4E-05	25.8
Texas Avenue Tributary	256,365	9.24	1.71	1,231.2	133	77	7.8	3.3E-03	1.1E-01	3.4E-02	3.7E-02	4.1E-04	2.6E-01	2.1E-05	6.4E-06	2.8E-05	7.3E-05	6.2E-07	2.0E-06	1.4E-03	8.9E-03	5.7E-03	1.7E-04	53.3
Tidal Basin																								

Washington Ship Channel	1,020,170	28.78	3.33	368.6	539	239	32.0	1.3E-02	4.6E-01	1.4E-01	1.5E-01	1.6E-03	8.8E-01	8.4E-05	2.6E-05	1.2E-04	3.0E-04	2.5E-06	8.1E-06	5.6E-03	3.6E-02	2.3E-02	7.0E-04	216.2
Watts Branch	676,419	22.37	2.57	554.5	442	242	20.6	1.0E-02	3.7E-01	1.2E-01	1.3E-01	1.3E-03	8.6E-01	5.9E-05	2.1E-05	9.6E-05	2.4E-04	1.6E-06	5.4E-06	3.8E-03	2.6E-02	2.0E-02	5.5E-04	177.5
Watts Branch - Lower	316,230	10.45	1.23	297.8	232	134	9.6	5.4E-03	1.9E-01	6.2E-02	6.8E-02	6.6E-04	4.5E-01	2.9E-05	1.1E-05	5.1E-05	1.3E-04	7.7E-07	2.5E-06	1.8E-03	1.3E-02	1.1E-02	2.8E-04	93.0
Watts Branch - Upper	360,188	11.93	1.34	256.7	211	108	11.0	5.1E-03	1.8E-01	5.5E-02	6.0E-02	6.3E-04	4.1E-01	3.1E-05	1.0E-05	4.5E-05	1.2E-04	8.7E-07	2.9E-06	2.0E-03	1.3E-02	9.3E-03	2.7E-04	84.5
CSS - Anacostia	13,470,723	383.14	43.91	8,654.0	7,242	4,165	410.4	1.8E-01	6.1E+00	1.9E+00	2.0E+00	2.2E-02	1.4E+01	1.1E-03	3.5E-04	1.6E-03	4.0E-03	3.3E-05	1.1E-04	7.4E-02	4.8E-01	3.2E-01	9.3E-03	2,906.5
CSS - Potomac	287,936	8.71	1.00	162.5	163	57	10.0	3.9E-03	1.4E-01	4.3E-02	4.7E-02	4.9E-04	2.7E-01	2.4E-05	7.8E-06	3.5E-05	8.9E-05	7.0E-07	2.3E-06	1.6E-03	1.0E-02	7.3E-03	2.1E-04	65.3
CSS - Rock Creek	5,763,957	164.09	18.71	2,065.9	3,030	1,351	161.2	7.5E-02	2.6E+00	7.8E-01	8.5E-01	9.2E-03	4.9E+00	4.7E-04	1.5E-04	6.5E-04	1.7E-03	1.4E-05	4.6E-05	3.2E-02	2.0E-01	1.3E-01	3.9E-03	1,216.1

Note that summations include MS4 and Direct Drainage areas. There is no distinction between runoff draining into a water body and runoff that is conveyed in collection system within the three CSS segments.

"'-'" indicates no reductions resulted from BMP implementation.

1. An EPA report (402-R-99-004B- linked below) that reviewed several studies with varied site conditions has documented mean partition coefficients for metals. DOEE used these metal-specific partition coefficients (Kd) and associated particle associated fraction (fp) values to model pollutant reduction for these metals through BMP implementation. Since many of the relevant low impact development (LID) practices have similar removal rates for lead and cadmium, the relationship between these two metals, their fp values, and the areas retrofitted were used to estimate cadmium reductions achieved through the Retrofit Program. DOEE will continue to use this methodology to estimate the pollutant load reduction for cadmium in Annual Reports. http://www.epa.gov/sites/production/files/2015-05/documents/402-r-99-004b.pdf.

4.7.2.2 Estimate Progress Towards all Numeric Limits

The Permittee shall estimate annual progress towards all numeric limits in Subsection 1.5.3.1 of this permit for acres managed and pounds of trash in the Anacostia River.

The District continues to implement and enforce its Stormwater Management Program in accordance with the MS4 Permit and the Revised Stormwater Management Plan. The District is on track to achieve the numeric limits of section 1.5.3.1 of the District's MS4 Permit

Table 12 Annual Progress Towards Numeric Limits of the MS4 Permit for Acres Managed, 07/01/2023 - 06/30/2024

Major Drainage Basin	Sewershed	Regulated PROW (square feet)	Regulated Non-PROW Parcels (square feet)	Voluntary Retrofits (square feet)	Total (square feet)	Total (acres)	TMDL IP Target (acres)
Anacostia	CSS	828,527	1,034,899	273,648	2,137,074	49	
	DD	355,790	2,310	225,209	583,308	13	
	MS4	3,331,352	1,090,310	839,003	5,260,664	121	
	MS4 + DD	3,687,141	1,092,619	1,064,211	5,843,972	134	**125**
	MS4 + DD + CSS	4,515,669	2,127,518	1,337,859	7,981,04 6	183	
Potomac	CSS	-	3,408	25,618	29,026	1	
	DD	-	142,583	11,534	154,117	4	
	MS4	5,282	642,243	210,496	858,021	20	
	MS4 + DD	5,282	784,826	222,030	1,012,138	23	**76**
	MS4 + DD + CSS	5,282	788,234	247,648	1,041,164	24	
Rock Creek	CSS	9,125	439,300	199,697	648,122	15	
	DD	-	39,242	6,192	45,434	1	
	MS4	1,517	147,764	149,409	298,690	7	
	MS4 + DD	1,517	187,006	155,601	344,124	8	**34**
	MS4 + DD + CSS	10,642	626,306	355,298	992,246	23	

TOTAL	**CSS**	837,652	1,477,607	498,962	2,814,222	65	
	DD	355,790	184,135	242,935	782,859	18	
	MS4	3,338,151	1,880,316	1,198,908	6,417,375	147	
	MS4 + DD	3,693,940	2,064,451	1,441,842	7,200,234	165	**235**
	MS4 + DD + CSS	4,531,592	3,542,058	1,940,805	10,014,455	230	

Table 13 Annual Progress Towards Numeric Limits of the MS4 Permit for Trees Planted and Trash Removed

Numeric Requirement	Achievement During Reporting Year	Percent Complete	Achievement During Permit Term
Achieve a minimum net increase of 38,850 trees in the MS4 Permit Area	6,660	17%	The District is constantly updating SGS data to accurately capture number of trees planted
Remove 108,347 pounds of trash annually from the Anacostia River	1,931,887 pounds	NA	Meeting annual trash reduction goal

4.7.2.3 Multi-faceted Suite of Indicators

Using all other data and information collected per the water quality assessment requirements of Part 4 of this permit, the Permittee shall continue to implement the suite of indicators identified in the 2022 SWMP that address discharge quality as well as receiving water quality. These indicators shall balance current status with long-term trends in order to determine elements of the program that are effective and those needing additional improvement. Any changes/additions to the suite of indicators shall be included with the updated SWMP submitted to EPA as part of the application package for permit renewal per Section 2.10 of this permit.

DOEE is on track to meet this permit requirement and will be working with EPA and stakeholders to develop a multi-faceted suite of indicators that address discharge and receiving water quality.

4.7.3 Synthesis of Strengths and Areas of Improvement

In each annual report the Permittee shall provide a short synthesis of areas of the program deemed effective with ongoing effort, and areas where additional strategies are needed to effectively address certain pollutants or sources, supported by interpretation of both programmatic and watershed indicators. Conclusions shall be based on interpretations of the indicators.

Strengths

DOEE has had continued success implementing many stormwater management programs. Notable achievements include:

1. The District has retrofitted 165.29 acres in the MS4 Permit area during this reporting period.
2. Planted 6,660 net trees in MS4 area during this reporting period (accounting for mortality).
3. Installed 29.24 acres of green infrastructure through the Stormwater Retention Credit (SRC) Price Lock Program, with another 14.74 acres in design, permitting, and/or construction.
4. Started assessing wadable streams in the District for a second time as part of the Rapid Stream Assessment program.
5. Continued the targeted trash and litter source control programs that include any food service product designed for single use, which includes foam and straws.
6. Steady increase in compliance rates for bag law and coal tar ban inspections.
7. Continued macroinvertebrate, fish, habitat, and ambient water quality monitoring each year.
8. DOEE established a green infrastructure maintenance team and conducted maintenance of GI on District property.

Areas of Improvement

DOEE has identified several program areas where we are making improvements:

1. While there have been no qualifying snow events to test the snow pilot program in the last two years, DOEE, DPW, and the Center for Watershed Protection collaboratively developed a Smart Salting Training for winter maintenance staff.

2. DOEE has a new contract in place for the outfall monitoring program; efforts are being made to identify solutions to challenges over the last few years.
3. Since the last permit, the District has made large strides in District Pollution Prevention implementation. All District critical source facilities have an approved SWPPP. However, not all sister agencies are meeting all compliance requirements. Strategies that DOEE is using to improve this program are: O&M compliance performance measures, at least quarterly interagency coordination, targeted Stormwater Pollution Prevention Plan development efforts, increased municipal staff training, and mock inspections and site walkthroughs.
4. DOEE released a Request for Applications to help create a strategy to support diversity, equity, and inclusion into stormwater programs that work in the MS4 area.
5. DOEE has continuously updated data capture and analysis methods for BMP installations, tree plantings, and acres managed. This ensures the most accurate and up-to-date information is being reported.