



Maryland

Department of the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

April 22, 2020

Christopher J. Phipps, P.E., Director
Anne Arundel County Department of Public Works
2662 Riva Road
Annapolis, MD 21401

Dear Mr. Phipps:

The Maryland Department of the Environment (Department) has reviewed Anne Arundel County's 2019 Annual Report submitted on February 12, 2020 for its National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit 11-DP-3316 (MD0068306). This review is provided in the enclosed Attachment. Following are several key points from the Department's review.

The Department approved the County's impervious surface assessment and the restoration requirement of 4,996 acres in June 2019. In the 2019 Annual Report, the County offered an update on the restoration activities that have continued in fiscal year (FY) 2019. The County completed restoration efforts equivalent to 3,170 impervious acres, or 63.5% of its restoration requirement. The County has also used nutrient trading with its wastewater treatment plants to fulfill the remaining impervious area requirement, or 1,826 acres. The restoration requirements of PART IV.E.2 continue to be met, and the Department commends the County for this effort.

The County's current permit, which expired on February 11, 2019, is administratively continued until a new permit is issued. The County continues to be responsible for compliance with permit conditions. This includes submitting an annual report on the February 12, 2021 anniversary of the permit.

The Department recognizes the effort required in implementing a successful stormwater management program. This effort is essential in our mutual goal of restoring urban streams and the Chesapeake Bay, and the County is commended for its commitment to and accomplishments of this program. If you have any questions regarding this review, please contact me at 410-537-3567 or Raymond P. Bahr, Deputy Program Manager of the Sediment, Stormwater, and Dam Safety Program at 410-537-3561, or Raymond.bahr@maryland.gov.

Sincerely,

Jennifer M. Smith, P.E.
Program Manager
Sediment, Stormwater, and Dam Safety Program

cc: Raymond P. Bahr, Deputy Program Manager, Sediment, Stormwater and Dam Safety Program
Erik Michelsen, Watershed Protection and Restoration Program

Attachment

Attachment 1
Maryland Department of the Environment’s (MDE) Review of Anne Arundel County’s
2019 National Pollutant Discharge Elimination System (NPDES)
Municipal Separate Storm Sewer System (MS4) Annual Report

MS4 Permit Conditions	MDE Assessment and Recommendations
Annual Reporting	<ul style="list-style-type: none"> Anne Arundel County’s Annual Report, which covers fiscal year (FY) 2019 (i.e., July 1, 2018 to June 30, 2019), is the sixth report for the current, 4th generation permit. The report was received on February 11, 2020.
Permit Administration	<ul style="list-style-type: none"> Anne Arundel County submitted an updated organizational chart outlining the various County departments and their individual permit responsibilities (e.g., source identification, public education). The Department of Public Works (DPW) is responsible for coordinating permit related activities and for implementing the majority of permit conditions. The Department of Inspections and Permits (I&P), the Office of Planning and Zoning (OPZ), and the Department of Health (DoH) also contribute to meeting various permit conditions like construction and maintenance inspection, and stormwater management plan review.
Legal Authority	<ul style="list-style-type: none"> Anne Arundel County maintained adequate legal authority for compliance with all permit conditions.
Source Identification	<ul style="list-style-type: none"> The County has submitted information in the Department’s MS4 geodatabase format. Mandatory fields for all tables have been completed with a few exceptions. The County used error codes (e.g., 66666, 1/1/1899) where data did not fit into the geodatabase or were not available. In these cases, the County continues to work on obtaining the correct data and providing the Department with a completed geodatabase in future annual reports. The County continued to update its storm drain inventory. During FY2019, the County added 49 new major outfalls to the <i>Outfall</i> feature class and 18 minor outfalls to reflect dry weather screenings for the illicit discharge program. The total number of outfalls included in this feature class is 2,329 for the current reporting year. The drainage areas for the new outfalls have been added to the <i>OutfallDrainageArea</i> feature class. The County has removed 3 and added 40 major outfalls to the list of industrial and commercial sources for a total of 1,269 outfalls. These are a subset of the outfalls described above and reflect continued refinement of the storm drain system inventory. The County provided the geodatabase <u>Industrial & Commercial Sources</u> that included land use polygons and major outfalls located within these land use categories based on newly available 2017 land cover data. In FY2016, the County initiated efforts to update the urban best management practice (BMP) database. The current urban BMP database includes information on 25,615 BMPs confirmed as either active or removed. The

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Source Identification (cont.)	<p>database reflects 756 BMP records added in FY2019 and 191 BMPs with a status of “Removed.” The County completed its comprehensive Urban BMP Database Historic Records Review and acknowledges that the dataset is incomplete. The County continues to update the BMP database based on newly completed grading permits.</p> <ul style="list-style-type: none"> • The County continued to use null values (e.g., 99999) to signify where information was absent. The County stated that most existing data sources have been exhausted and has committed to continue improving data through other means, such as aerial imagery and further investigation into locating missing drawings. The Department considers this effort as meeting the requirement and the maximum extent practicable. • In 2017, the County initiated a project to update impervious surface coverage using newer imagery. The project was completed in January 2019. This FY2019 annual report reflects the impervious acres calculated based on the new 2017 imagery dataset. The newly calculated dataset includes 40,780 acres that were present in the previously used 2014 dataset, adds 1,821 new acres, and excludes 1,531 acres that were present in the 2014 dataset. The County currently reports 42,601 acres of imperviousness. Of these, 8,402 acres (approximately 20%) are State or federal properties, or within the City of Annapolis. • Information for the County’s three monitoring sites (i.e., Parole Plaza, Church Creek, and Picture Spring Branch) was included in the <i>MonitoringSite</i> feature class. Monitoring results were provided in the <i>ChemicalMonitoring</i> and <i>BiologicalMonitoring</i> tables. • The County provided water quality improvement project data in the MS4 geodatabase for the FY2019 reporting period. A portion of this data set was also submitted with the FY18 annual report. Data included the tables <i>RestBMP</i>, <i>AltBMPLine</i>, <i>AltBMPPoint</i>, and <i>AltBMPPoly</i> and associated inspections. • The County has met the requirements of PART IV.C.1 through 6.
Stormwater Management (SWM)	<ul style="list-style-type: none"> • The County provided information on its stormwater management program in the FY2019 annual report and in the <i>SWM</i> and <i>BMPInspections</i> tables in the geodatabase. • With the exception of County capital improvement projects (CIP), I&P is responsible for SWM plan review. An existing memorandum of understanding (MOU) allows DPW to affirm to OPZ that CIP projects meet State and local stormwater management requirements. • For FY2019, the County reported the following: <ul style="list-style-type: none"> ○ 110 concept plans, 149 site development plans, and 77 final plans were received; ○ 5 final redevelopment plans were received; and

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Stormwater Management (cont.)	<ul style="list-style-type: none"> ○ No exemptions were issued, nor were any waiver requests received. ● I&P conducts construction inspections for stormwater management as part of normal erosion and sediment control inspections. In FY2019, 2,352 stormwater management construction inspections were conducted, and 116 correction notices issued. ● The County reported the following maintenance inspections in FY2019: <ul style="list-style-type: none"> ○ 7,045 triennial maintenance inspections; ○ 577 correction notices as a result of those inspections; and ○ 22 Violation Notices. ● The County submitted inspection data in the <i>BMPInspections</i> table for FY2019 inspections. ● BMP maintenance is crucial for the proper functioning and pollutant removal capabilities of these facilities. The County has increased the number of maintenance inspections conducted since FY2018. The County is commended for its effort in this area. ● The Department’s last triennial review found that while the County needed to improve consistency and communication between plan review and field staff, the program was acceptable. The Department will be reviewing the County’s stormwater program in the summer of 2020 (FY2021).
Erosion and Sediment Control	<ul style="list-style-type: none"> ● In FY2019, there were 88 grading permits issued for projects that disturbed one acre or more and the County reported a total of 1,186 active permits and 1,420 acres of disturbed area. ● In FY2019, the County conducted 11,376 inspections. As a result of these inspections, the County issued 986 violations and 224 stop work orders, and collected four fines for a total of \$67,214. ● The Department’s last evaluation of the County’s erosion and sediment control (ESC) program was in December 2018. In that review, the Department found the majority of sites were in good condition and routine enforcement by the County inspection staff was generally effective in gaining compliance. However, the Department noted that timely stabilization and re-stabilization needed some improvement. The Department delegated enforcement authority to the County effective through June 30, 2021. This program is scheduled for reevaluation in 2020. ● The County has met the requirements of PART IV.D.2.
Illicit Discharge Detection and Elimination (IDDE)	<ul style="list-style-type: none"> ● As reported in the geodatabase, the County field-screened 153 unique outfalls within commercial, industrial, and residential land uses. The County observed dry weather flows and performed chemical tests at 58 outfalls, meeting permit requirements. ● As reported in the annual report narrative, the County rescreened seven outfalls where concentrations of tested contaminants were above action-criteria limits, six of which were reported in the geodatabase. Of these, five

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IDDE (cont.)	<p>continued to show results above the action-criteria limits. One was a swimming pool draining and was corrected. One discharge was concluded to result from natural conditions. The source of two discharges remained undetected after a complete investigation. One discharge was monitored until contaminant levels decreased below the action level. The source was not determined. One discharge that was resolved and the remaining investigations were inconclusive.</p> <ul style="list-style-type: none"> • The County provided a status on five investigations that were not resolved as of the end of the prior reporting year. All cases were reported to be resolved, although four investigations did not result in source identifications. The County stated that these outfalls will be monitored in the future if an illicit discharge is found again. • The Department recommends that outfalls that have inconclusive investigations be prioritized for future screenings. • The County conducted visual surveys in accordance with commercial and industrial area survey requirements. The County provided a summary and field reports for nine violations discovered in FY2019 and two discovered in FY2018, including improper grease and oil storage and waste management practices. All but one violation was resolved. The Department requests that the County continue to provide an update on outstanding investigations in each annual report. The Department also requests that the County provide the total number of visual surveys conducted per year to fully document the program. • The County continued to maintain a program to address and respond to illicit discharges, illegal dumping, and spills. The County offered a form on its website and a hotline number for reporting illicit discharges. The County also maintained a publicly available database that tracks complaints and resolutions. The County received 30 complaints regarding illicit discharges. • The County’s documentation of resolved cases demonstrates appropriate enforcement measures for investigating and eliminating illicit discharges, illegal dumping, and spills. Enforcement mechanisms include Violation Notices, Stop Work Orders, and civil citations. • The County has met the IDDE annual reporting requirements in accordance with PARTs IV.D.3 and V, with only a minor number of missing data. As requested in the previous annual report review, the County populated the discharge source for all observed flows. • On July 9, 2018, the Department conducted a field audit of the County’s IDDE program. The Department requested by June 1, 2019 a status update on storm drain system mapping, inter-department coordination, implementation of a new database, and updated standard operating procedures. The County provided this information and the Department determined that the submission was sufficient.

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IDDE (cont.)	<ul style="list-style-type: none"> The County’s efforts as documented in the FY2019 annual report demonstrate that the County continues to maintain compliance with the permit’s IDDE program requirements.
Litter and Floatables	<ul style="list-style-type: none"> The County continued ongoing efforts to identify and eliminate sources of litter by screening upland sources. In FY2019, the County reviewed and updated the Litter and Floatables Comprehensive Plan (submitted in Appendix F) that details existing conditions, current County and County-supported programs, and new legislation related to litter prevention. The County’s Waste Management Services (WMS) conducted public education and outreach on litter reduction and recycling. WMS staff participated in 22 fairs or festivals and provided recycling assistance to 14 events. Staff also provided information to 54 elementary, middle, and high school programs and 13 summer camps, and conducted 27 tours of the County’s Millersville landfill. Additionally, WMS provides roll-off bins to 163,000 residential households and removed 4.35 tons of trash. WMS also promoted recycling County-wide. The County-wide recycling rate was 40% in FY2019. The County offered a recycling program with weekly service to small businesses. In FY2019, over 269 businesses participated in the program. This is an increase of 64 new businesses from FY18. The County’s Office Recycling Program (CORP) has at least 121 sites that collected approximately 1,100 tons of single stream recycling in FY2019. The County hosted six household hazardous waste events that collected 161 tons of hazardous waste for proper disposal. The County’s Bureau of Highways (BoH), which is responsible for maintaining County roads, routinely collected litter during the work week and on weekends in partnership with the Department of Detention Facilities. BoH collected 9,662 thirty-gallon bags of litter in FY2019; 2,343 of these were collected by the weekend litter control program. BoH collected more than 776 tons of large debris (e.g., appliances, tires) from roadsides, a 48% decrease from FY2018. WMS and BoH also supported three stream clean-up events in FY2019. These efforts resulted in the removal of more than 4.65 tons of material. The above program activities are sufficient to meet litter and floatables requirements of PART IV.D.4 of the permit.
Property Management and Maintenance	<ul style="list-style-type: none"> Twice-monthly street sweeping of priority areas including main roads and commercial areas was done by a contractor. Approximately 6,654 curb miles were swept and 479 tons of material were collected. The County cleaned 4,932 structures including inlets and catch basins, vacuumed 3,987 structures, and cleaned 120,752 feet of storm drain pipes.

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Property Management and Maintenance (cont.)	<p>The feet of storm drain pipes cleaned is a significant increase from the previous reporting year. The County also cleaned debris from 180,217 feet of roadside curbs and ditches.</p> <ul style="list-style-type: none"> • The County used 12,894 tons of salt, 133,500 gallons of salt brine pretreatment, and 432 gallons of liquid calcium chloride in FY2019. The County provided information comparing application amounts and snowfall for previous years. Approximately 150 staff and 115 contractors attended snow management training, and topics discussed in training were described. • Approximately 231 staff attended training sessions held throughout the year at all staffed industrial facilities. Topics and training dates were listed. • The County maintained an integrated pest management (IPM) strategy and utilized a certified Pest Control Applicator contractor for highways. The County listed pesticides used during the reporting year, including approximately 51 gallons of herbicides used by the County Facilities Maintenance Division and 35 gallons of glyphosate used by BoH on public rights-of-way, and approximately 619 gallons of herbicides used by County Recreation and Parks. • At all 12-SW facilities, stormwater pollution prevention plans (SWPPPs) were maintained and regular inspections were conducted. The annual report included copies of inspection records and a summary of facilities and stormwater management efforts. • Overall, the Department finds the County’s Property Management and Maintenance program to be sufficient for meeting permit requirements. When the program was reviewed by the Department on January 22, 2018, the County demonstrated proactive, forward thinking program management, particularly with respect to winter weather activities.
Public Education	<ul style="list-style-type: none"> • The County’s I&P maintains several options for reporting complaints including spills and illegal dumping. These include a 24-hour environmental hotline, an on-line request for investigative service on its webpage, options for reporting through mobile apps, and by dialing 311. • In August of 2018, the County implemented a new complaint management system that categorizes complaints as building, environment, or zoning, with additional subcategories (e.g., illicit discharges). Inspector assignments and actions are recorded within the database and complaint data is available to the public. • In FY2019, more than 3,413 complaints were documented, 986 (29%) of these were environmental in nature (e.g., 30 illicit discharges, 17 stormwater management, 251 grading, and 229 general drainage complaints). • The County has several outreach programs that are designed to provide residents with information on water quality issues and environmental stewardship. The annual report included a summary of all outreach activities that were conducted, attended, and/or supported by County

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Public Education (cont.)	<p>agencies in FY2019. For example, DPW’s Watershed Protection and Restoration Program (WPRP) continued to provide information on numerous topics including rainwater reuse, rain gardens, permeable pavers, car maintenance, household hazardous waste, pet waste, and septic system maintenance.</p> <ul style="list-style-type: none"> • The County held six household hazardous waste events, collecting 161 tons of hazardous waste materials. • Likewise, DPW’s Bureau of Utilities attended 13 community outreach events and conducted three tours of the water reclamation and treatment facilities. • The County’s Watershed Stewards Academy (WSA) trained 30 new watershed stewards, and as a group, continued to implement projects and provide outreach and stormwater education to County residents. In FY2019, Certified Stewards installed 964,538 square feet of in-the-ground projects, planted 7,463 native plants and trees, donated 8,984 volunteer hours, removed 6,640 square feet (ft.) of invasive species, and collected 11,050 pounds of trash. • The requirements of PART IV.D.6 have been met, and the Department commends the County for its effort in public outreach and education. 																												
Restoration Plans and Total Maximum Daily Loads (TMDLs)	<ul style="list-style-type: none"> • The County’s completed watershed assessments and associated materials are available on DPW’s website. • By the end of FY2018, the County fulfilled the permit requirement to complete the following twelve watershed assessments: <table border="1" data-bbox="451 1213 1390 1472"> <thead> <tr> <th>Watershed</th> <th>MDE 8-Digit Watershed Code</th> <th>Watershed</th> <th>MDE 8-Digit Watershed Code</th> </tr> </thead> <tbody> <tr> <td>Bodkin Creek</td> <td>02130902</td> <td>Rhode River</td> <td>02131004</td> </tr> <tr> <td>Patapsco Tidal</td> <td>02130903</td> <td>West River</td> <td>02131004</td> </tr> <tr> <td>Patapsco Nontidal</td> <td>02130906</td> <td>Herring Bay</td> <td>02131005</td> </tr> <tr> <td>Magothy River</td> <td>02131001</td> <td>Middle Patuxent R.</td> <td>02131102</td> </tr> <tr> <td>Severn River</td> <td>02131002</td> <td>Upper Patuxent R.</td> <td>02131104</td> </tr> <tr> <td>South River</td> <td>02131003</td> <td>Little Patuxent R.</td> <td>02131105</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • The Department approved the County’s updated impervious area baseline assessment and 20% restoration requirement of 4,996 acres in correspondence dated June 6, 2019. • In this correspondence, the Department also confirmed that the County met the 20% restoration requirements set forth in PART IV.E.2. The County completed restoration efforts equivalent to 2,389 acres of impervious area (47.8% of the total requirement) and used nutrient trading with its wastewater treatment plants to fulfill the remaining impervious area requirement of 2,607 acres (52.2%). • In FY2019, Anne Arundel County completed an additional 800 acres of 	Watershed	MDE 8-Digit Watershed Code	Watershed	MDE 8-Digit Watershed Code	Bodkin Creek	02130902	Rhode River	02131004	Patapsco Tidal	02130903	West River	02131004	Patapsco Nontidal	02130906	Herring Bay	02131005	Magothy River	02131001	Middle Patuxent R.	02131102	Severn River	02131002	Upper Patuxent R.	02131104	South River	02131003	Little Patuxent R.	02131105
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Restoration Plans and TMDLs (cont.)	<p>restoration using ESD and structural BMPs (205 acres), stream restoration (549 acres), outfall stabilization (14.8 acres), and shoreline management (30.3 acres). When combined with annual practices (e.g., street sweeping), the cumulative total for restoration through FY2019 is 3,170 acres. The County has indicated that nutrient trades with its wastewater treatment plants will be used to fulfill the remaining requirement, or 1,826 acres.</p> <ul style="list-style-type: none"> • The County submitted the geodatabase AACountyFY19MS4Geodatabase_20200210 that includes data demonstrating compliance with the restoration requirements in the County’s permit. • The County provided the following data in the <i>AltBMPPointInspections</i>, <i>AltBMPPolyInspections</i>, <i>AltBMPLineInspections</i>, and <i>RestBMPInspections</i> tables of the FY2018 database: <ul style="list-style-type: none"> ○ 209 inspections related to septic system upgrades, connections to wastewater treatment plants (WWTPs), and septic system pump-outs; ○ 991 inspections related to alternative BMPs like street sweeping, inlet and catch basin cleaning, and tree planting; ○ 43 records for stream restoration and shoreline management projects; and ○ 49 inspections of restoration BMPs, including 24 triennial inspections of BMPs constructed in FY2016. • Although the restoration effort has increased (see above), estimates indicate that the County has still completed less than the 4,996 acres required. The County has submitted documentation to use nutrient trading to fulfill the remaining impervious acre requirement to remain in compliance with the MS4 permit. • The County continued to work with the Department’s Integrated Water Planning Program (IWPP) to refine the modeling of local TMDLs. The County provided updated information on its effort to comply with local nutrient (total nitrogen or “TN”, and total phosphorus or “TP”), PCB, bacteria, and sediment (total suspended sediments or “TSS”) TMDLs in Appendix H of its annual report. This included annual assessment reports for the following TMDLs: <ul style="list-style-type: none"> ○ Baltimore Harbor Nutrient TMDL; ○ Baltimore Harbor and Curtis Creek PCB TMDL; ○ Patuxent River Watershed PCB TMDL; and ○ Bacteria TMDLs associated with 19 County watersheds (one plan). • The County also included final restoration plans for the following sediment TMDLs: <ul style="list-style-type: none"> ○ Nontidal Lower & Middle Patuxent River; and ○ Nontidal Other West Chesapeake Watershed. • In addition to the above, three new sediment TMDLs were approved by EPA

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Restoration Plans and TMDLs (cont.)	<p>in FY2019. Implementation plans for the Nontidal Middle and Lower Patuxent River watersheds were included in Appendix H; the Nontidal West River Implementation Plan is still being developed.</p> <ul style="list-style-type: none"> • Anne Arundel County reported progress for the Chesapeake Bay nutrient and sediment TMDLs in the <i>Countywide Stormwater Watershed Assessment</i> table from the geodatabase. For the Chesapeake Bay nutrient and sediment TMDLs, the County reported the following progress: <table border="1" style="margin: 10px 0;"> <thead> <tr> <th>Pollutant</th> <th>2009 Baseline</th> <th>2025 Target</th> <th>Required Reduction</th> <th>Current Reduction</th> <th>% Reduction</th> </tr> </thead> <tbody> <tr> <td>TN (lbs/yr)</td> <td>657,383</td> <td>449,641</td> <td>207,742</td> <td>28,389</td> <td>13.7</td> </tr> <tr> <td>TP (lbs/yr)</td> <td>56,531</td> <td>30,147</td> <td>26,384</td> <td>7,355</td> <td>27.9</td> </tr> <tr> <td>TSS (lbs/yr)</td> <td>14,218,000</td> <td>4,646,000</td> <td>9,572,000</td> <td>5,042,974</td> <td>52.7</td> </tr> </tbody> </table> • The County also used the <i>Local Stormwater Watershed Assessment</i> table from the geodatabase for reporting progress on the local sediment, nutrient, and PCB TMDLs. <ul style="list-style-type: none"> ○ For the Baltimore Harbor nutrient TMDLs, the County reported the following: <table border="1" style="margin: 10px 0;"> <thead> <tr> <th rowspan="2">Watershed</th> <th colspan="3">SW-WLA (lbs/year)</th> <th colspan="2">Percent Reduction (%)</th> </tr> <tr> <th>Baseline (1995)</th> <th>Target</th> <th>Current</th> <th>Required</th> <th>Current</th> </tr> </thead> <tbody> <tr> <td>Baltimore Harbor TN</td> <td>228,361</td> <td>194,107</td> <td>218,397</td> <td>15.0</td> <td>4.4</td> </tr> <tr> <td>Baltimore Harbor TP</td> <td>11,888</td> <td>10,105</td> <td>11,140</td> <td>15.0</td> <td>6.3</td> </tr> </tbody> </table> ○ For the PCB TMDLs, the County reported the following: <table border="1" style="margin: 10px 0;"> <thead> <tr> <th rowspan="2">Watershed</th> <th colspan="3">PCB SW-WLA (g/year)</th> <th colspan="2">Percent Reduction (%)</th> </tr> <tr> <th>Baseline (2011)</th> <th>Target</th> <th>Current</th> <th>Required</th> <th>Current</th> </tr> </thead> <tbody> <tr> <td>Baltimore Harbor</td> <td>454.55</td> <td>40.45</td> <td>449.4</td> <td>91.1</td> <td>1.14</td> </tr> <tr> <td>Curtis Creek</td> <td>262.89</td> <td>17.09</td> <td>258.37</td> <td>93.5</td> <td>1.72</td> </tr> <tr> <td>Pax. R.– Tidal Fresh</td> <td>25.41</td> <td>0.03</td> <td>24.69</td> <td>99.9</td> <td>2.8</td> </tr> </tbody> </table> ○ For 19 of the bacteria TMDLs, the County reported the following: <table border="1" style="margin: 10px 0;"> <thead> <tr> <th rowspan="2">Watershed</th> <th colspan="3">Fecal Coliform</th> <th colspan="2">Percent Reduction (%)</th> </tr> <tr> <th>Baseline¹</th> <th>Target</th> <th>Current</th> <th>Required</th> <th>Current</th> </tr> </thead> <tbody> <tr> <td>Selby Bay</td> <td>1.055110e14</td> <td>1.055110e14</td> <td>8.38601e13</td> <td>0.0</td> <td>20.5</td> </tr> <tr> <td>Bear Neck Creek</td> <td>6.3684e13</td> <td>3.61088e13</td> <td>5.14057e13</td> <td>43.3</td> <td>19.28</td> </tr> <tr> <td>Cadle Creek</td> <td>3.2192e13</td> <td>8.94938e12</td> <td>3.01800e13</td> <td>72.2</td> <td>6.25</td> </tr> <tr> <td>Parish Creek</td> <td>2.2860e13</td> <td>1.07213e13</td> <td>2.27571e13</td> <td>53.1</td> <td>0.45</td> </tr> <tr> <td>Severn R. Mainstem</td> <td>4.93567e15</td> <td>3.99789e15</td> <td>2.44612e15</td> <td>19.0</td> <td>50.44</td> </tr> </tbody> </table> 	Pollutant	2009 Baseline	2025 Target	Required Reduction	Current Reduction	% Reduction	TN (lbs/yr)	657,383	449,641	207,742	28,389	13.7	TP (lbs/yr)	56,531	30,147	26,384	7,355	27.9	TSS (lbs/yr)	14,218,000	4,646,000	9,572,000	5,042,974	52.7	Watershed	SW-WLA (lbs/year)			Percent Reduction (%)		Baseline (1995)	Target	Current	Required	Current	Baltimore Harbor TN	228,361	194,107	218,397	15.0	4.4	Baltimore Harbor TP	11,888	10,105	11,140	15.0	6.3	Watershed	PCB SW-WLA (g/year)			Percent Reduction (%)		Baseline (2011)	Target	Current	Required	Current	Baltimore Harbor	454.55	40.45	449.4	91.1	1.14	Curtis Creek	262.89	17.09	258.37	93.5	1.72	Pax. R.– Tidal Fresh	25.41	0.03	24.69	99.9	2.8	Watershed	Fecal Coliform			Percent Reduction (%)		Baseline ¹	Target	Current	Required	Current	Selby Bay	1.055110e14	1.055110e14	8.38601e13	0.0	20.5	Bear Neck Creek	6.3684e13	3.61088e13	5.14057e13	43.3	19.28	Cadle Creek	3.2192e13	8.94938e12	3.01800e13	72.2	6.25	Parish Creek	2.2860e13	1.07213e13	2.27571e13	53.1	0.45	Severn R. Mainstem	4.93567e15	3.99789e15	2.44612e15	19.0	50.44
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Restoration Plans &TMDLs (cont.)	South R. Mainstem	2.074460e15	1.462500e15	9.156680e14	29.5	55.86																						
	Tracy & Rockhold Cr.	5.424070e14	9.98029e13	4.023580e14	81.6	25.82																						
	West R. Mainstem	1.760840e14	1.139260e14	8.19143e13	35.3	53.48																						
	Forked Creek	7.835000e13	5.7744e13	4.09692e13	26.3	47.71																						
	Magothy R. Mainstem	1.731130e15	1.509540e15	8.827010e14	12.8	49.01																						
	Tar Cove	8.827010e14	2.628550e14	2.101000e14	0.0	76.20																						
	Whitehall & Meredith	1.732220e14	1.73222e13	1.292580e14	90.0	25.38																						
	Mill Creek	2.343200e14	3.28048e13	1.502690e14	86.0	35.87																						
	Duval Creek	6.785400e13	3.69126e13	4.5754e13	45.6	32.57																						
	Ramsey Lake	1.091010e14	4.44041e13	8.01674e13	59.3	26.52																						
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	<ul style="list-style-type: none"> ○ Overall, the County is making progress toward meeting the bacteria goals through a combination of BMP retrofits, IDDE, sanitary sewer overflow abatement, and public outreach. This outreach includes multi-media pet waste programs and marina pump-out services. ● In summary, the Department recognizes Anne Arundel County’s progress toward meeting milestones for the Chesapeake Bay and local TMDLs. The County is behind in implementation in some areas, but expects that projects in the planning and design phases will realign progress back on schedule. The County needs to continue to reevaluate the implementation of restoration projects so that future project milestones can be met. 																											
Assessment of Controls	<ul style="list-style-type: none"> ● In the 2019 reporting year, Anne Arundel County monitored 9 storm events at the Church Creek subwatershed. The County also took 4 base flow measurements in the same time period, for a total of 13 samples. ● The County cites “a low number of opportunities to sample qualifying events” as the reason for sampling fewer than 12 storms this reporting period; further explanation is provided in page 115 of the Annual Report. The County may submit a baseflow sample in lieu of a storm sample if a storm sample is unable to be captured due to a dry spell or equipment failure, for a minimum total of 12 measurements. However, the County must continue to exercise all efforts to successfully monitor 12 storms in every reporting period. 																											

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Assessment of Controls (cont.)	<ul style="list-style-type: none"> • The County submitted its Assessment of Controls data via the MS4 geodatabase. This includes the ChemicalMonitoring, BiologicalMonitoring, MonitoringSite, and MonitoringDrainage area tables. The Department has reviewed these submissions and offers the following comments, organized by table: <ul style="list-style-type: none"> ○ ChemicalMonitoring <ul style="list-style-type: none"> ▪ There were 26 records, all from FY2019; 18 stormflow measurements (9 each from the Parole Plaza outfall and Church Creek instream stations) and 8 baseflow measurements ▪ All required fields have been completed for both stormflow and baseflow measurements; the County is commended for its efforts in successfully analyzing all parameters ▪ With 9 storms and 4 baseflows sampled, given the conditions mentioned previously, the intent of Part IV.F.1.a of the permit has been met this reporting year ○ MonitoringSite <ul style="list-style-type: none"> ▪ There were 9 records (7 biological, 2 chemical) ▪ All required fields have been completed ○ MonitoringDrainageArea <ul style="list-style-type: none"> ▪ There were 9 records ▪ All required fields have been completed ▪ County noted in GEN_COMMENTS that drainage area totals were updated this year to reflect recent changes ○ BiologicalMonitoring <ul style="list-style-type: none"> ▪ There were 7 records ▪ All required fields have been completed ▪ Maryland Biological Stream Survey (MBSS) protocols used ▪ The County notes in the narrative that BIBI scores for the four designated biological monitoring reaches rank “Poor” or “Very Poor”. In the past year, the rating at stations 1 and 4 remained at “Very Poor” from 2018 to 2019; station 2 improved from “Very Poor” to “Poor” and station 3 decreased from “Poor” to “Very Poor”. ▪ The requirements of Part IV.F.1.b have been met this reporting year • The County continued its physical monitoring in the Church Creek subwatershed. In total, five cross-sections are monitored; results are summarized in Table 46 (page 119) of the Annual Report. Detailed results were also submitted as Appendix C, fulfilling the requirements of Part IV.F.1.c of the permit. According to the notes, only one of the cross-sections appears stable. The County summarizes: “Values measured in 2019 were slightly higher than prior assessment results. This reflects the higher level of imperviousness in the study area, as compared to the lower impervious levels in the drainage areas used to develop the regional

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Assessment of Controls (cont.)	<p>relationship data, suggesting the stream has enlarged as a result of high imperviousness...” (pg 119, Annual Report)</p> <ul style="list-style-type: none"> • The County continued its Stormwater Management Assessment at Picture Spring Branch. The County monitors five cross-sections along this branch; full results were reported in Appendix D of the Annual Report, fulfilling the requirements of Part IV.F.2 of the permit. The County reports relatively consistent dimensions for three of the cross-sections compared to baseline (i.e., 2003) conditions; more significant changes (cross-sectional area increases) were noted at the other two stations. The County notes that “Overall, it appears that the BMPs installed as part of the development of the Odenton Regional Library site have been effective” in minimizing impacts (p. 121, Annual Report).
Program Funding	<ul style="list-style-type: none"> • Detailed information on the expenditures and budget related to the implementation of the permit were included in the <i>FiscalAnalyses</i> table of the geodatabase. The total annual cost for implementing the County’s NPDES MS4 program was \$25.34 million (M), and the operating and capital costs were \$17.03M and \$24M, respectively. These costs included \$22.02M collected through the County’s Watershed Protection and Restoration Program (WPRP). • The County indicated that the projected capital improvement program (CIP) budget for FY2019 through FY2024 is \$40.1M. • The County provided a Watershed Protection and Restoration Program (WPRP) Annual Report for FY2019 as required. • The County’s next Financial Assurance Plan (FAP) should be submitted as narrative files in the geodatabase by February 12, 2021, unless advised otherwise.