Maryland's 2018 – 2019 Programmatic Two-Year Milestones

Target	Milestone	Deliverable	Lead	Comments/Status Updates
Date			Agency	1
Point Sources	5			
December 2019	Improve point source data quality through NetDMR implementation. - MDE will work to ensure all of the remaining facilities with NPDES permits that are required to adopt the Net DMR system complete their registration	Report NetDMR implementation.	MDE - WSA	99% of facilities are using NetDMR.
Point Sources	s/Major Municipal			
December 2019	Upgrade Major WWTPs to ENR with State grant/loan support.	A cumulative total of 65 of 67 major WWTPs will have completed construction.	MDE - WQFA	63 out of 67 major WWTPs have completed construction and are in operation, 3 more are in construction, and 1 in the planning phase.
	s/Minor Municipal			
December 2019	Upgrade minor WWTPs to ENR with State grant/loan support.	A cumulative total of 8 minor WWTPs will have completed construction. The Phase II WIP goal required 5 minor plant upgrades, which has been met. MDE will provide an inventory of WWTPs that have been upgraded and those scheduled for upgrades based on EPA template.	MDE - WQFA	 9 out of 29 upgrades completed within the State. 2 minor WWTPs were updated in 2018 & 2019. 5 facilities are in the construction phase, and another 5 in design. The remaining 10 are in the planning phase.

Point Source	s/Minor Industrial			
December 2019	Continue to update minor industrial nutrient load data.	Summary of the minor industrial load data updates.	MDE – WSA, WWPP	This information is updated on an annual basis and provided to EPA through the annual progress submission.
Septic System	ms			
December 2019	Continue to facilitate implementation of septic connections to ENR facilities in Critical Area and other areas of Maryland with funding support of BRF funds. - Provide technical and policy assistance to local governments to facilitate connections of septic tanks to WWTPs. - Market recent changes in the eligible use of BRF as a funding source for septic connections to	Report number of Septic Connections to ENR facilities. Continue to include program as part of solicitation.	MDE WSA/ WQFA, MDP	Septic Connections: FY18: 102 connections FY19: 183 connections
December 2019 December 2019	ENR facilities. Improve county programs for installation of BAT units in areas of special concern or focus areas. Amend regulations to include loading rate decreases	Status report on review of local problem areas relative to water quality issues and contaminated areas based on soil conditions. Develop criteria for evaluation and selection of new MBR	MDE - WWPP MDE - WWPP	The State has begun investing in research for this, but it is still in the development phase. The State is actively working to get funding for areas identified as part of this process. An amendment was completed for systems discharging >5,000 gallons per
2017	when Best Available Technology (BAT) or Membrane Bioreactor (MBR) technology is utilized	technology; improve the operation and maintenance component for BAT and MBR technologies.	vv vv11	day. Another amendment for systems discharging <5,000 gallons per day is being proposed.

Urban Storm	nwater/Phase I MS4			
July 2019	Report Phase I MS4 BMP implementation for Progress via newly developed GIS database. The use of this database will be a requirement in all MS4 Phase I permits.	Annual database output beginning with the first annual report of the next Phase I permits.	MDE – WSA, SSDS	Completed the annual database output beginning with the first annual report of the next generation Phase 1 permits.
July 2019	Maryland developed an MS4 permit template for EPA review that articulates the requirements of the Phase I permits set to expire in 2018. MDE will continue working with environmental groups, the Maryland Association of Counties, and EPA to issue timely final MS4 determinations.	Provide final MDE template to EPA by the end of 2018; final determinations for each individual permit to be issued within 6 months following the permit's expiration.	MDE- WSA	MDE extended the date of the permit issuance to correspond with the delay in the completions of the Phase III Watershed Implementation Plan. MDE provided a template to EPA at the end of 2019; this milestone has been extended to 2020 – 2021 Milestone period pending EPA review.
December 2019	Montgomery County Phase I MS4 Permit	MDE to develop annual checklists and permit reviews and appropriate enforcement of Montgomery County's Consent Agreement compliance and submit them to EPA.	MDE – WSA, SSDS	Montgomery County has met the terms of the Consent Agreement; appropriate information will be submitted to EPA

December 2019	Maryland will review, approve, and/or take appropriate enforcement action according to established SOP on Phase I MS4 Restoration Plans submitted during or prior to the 2018/2019 period.	Annually, MDE will provide review documents to EPA.	MDE – WSA, SSDS	Project is on-going. 70 Phase I MS4 Restoration Plans have received final approval of their plans. Many plans are under conditional approval. This means elements of their plans are being updated to satisfy MDE requirements.
July 2019	Keep MS4 Guidance up-to-date. – Include latest BMP efficiencies and flexibility in meeting permit requirements and 2025 goals.	Annually keep MS4 permittees updated on all new Bay Program BMP approvals and finalize MS4 Accounting Guidance by June 30, 2019.	MDE - WSA	MDE updated the current permit MS4 guidance through Departmental Memo's to jurisdictions. Significant updates are related to stream restoration and smart ponds. MDE has completed a draft updated "MS4 guidance" consistent with the Phase III WIP, the Phase 6 modeling tools and for use in the next round of Phase 1 permits. The draft updated MS4 Accounting Guidance was shared with EPA.
December 2019	Continue to market BRF as an eligible funding source for SWM Retrofit implementation.	Annually report on number of projects funded.	MDE - WQFA	MDE funded 1 stream restoration in SFY19 using BRF funding.
December 2019	Maryland to review the Phase I MS4 Financial Assurance Plans (FAP) according to the specific criteria in Maryland law.	Annually, MDE will provide FAP review documents to EPA.	MDE- WSA	MDE has completed their evaluations and they can accessed here: https://mde.maryland.gov/programs/Water/StormwaterManagementProgram/Pages/WPRPFinancialAssurancePlans.aspx

Urban Storm	water/Phase II MS4			
2018-2019	 Issue Final Determination for Phase II MS4 permits Review Draft Phase II permits for consistency with outcomes of the legal issues associated with Phase I MS4 permits. Review and incorporate EPA's final stormwater general permitting rule, published by EPA in November 2016, into Maryland's Phase II MS4 general permits. Final Determination for Phase II MS4 permit 	April 27, 2018	MDE - WSA	The Phase II permits were issued in October 2018.
Urban Storm				
December 2019	Publish tentative determination of General Permit for Discharges from Stormwater Associated with Industrial Activity	Tentative determination of permit	MDE- WSA	Partially completed, anticipate completion in December 2020 and will be submitted for tentative determination
December 2019	Publish tentative determination of General Permit for Stormwater Associated with Construction Activity	Tentative determination of permit	MDE- WSA	EPA is currently reviewing our Draft of the General Permit for Construction, anticipate completion in July 2020 and will be submitted for tentative determination

December 2018	Maryland to target education and outreach efforts in the unregulated Urban/Suburban Stormwater sector	Annually, MDE will provide a summary of outreach efforts to EPA regarding unregulated Urban/Suburban Stormwater sector	MDE- WSA	December 10, 2018, MDE held a symposium entitled "Emerging Trends in Stormwater Programs" as part of its continued outreach in this sector. A follow up symposium entitled "Fundamentals of Success: Past, Present, and Future" was conducted on June 4, 2019. MDE Staff have been in routine contact with Non-MS4 stormwater communities throughout the State through its WIP Inventory, and PIII WIP implementation efforts.
December 2019	Maryland to review MS4 compliance with the 20 percent restoration requirement outlined in the Phase II WIP and determine the most appropriate course for the Phase III WIP to achieve reductions in the Urban/Suburban Stormwater Sector.	Maryland's draft and final WIP III will be submitted to EPA for review and advisement.	MDE- WSA	Maryland submitted its final WIPIII to EPA for review and assessment on August 23, 2019.
December 2019	Assess documentation and reporting options for fertilizer sales data and/or fertilizer application data to support future urban fertilizer data usage.	Summary of reporting options	MDE- MDA	MDE and MDA continue to work together to improve our knowledge of the relevant fertilizer sales data. However, the process in which this data is handled within the model will need to be improved, with Chesapeake Bay Partnership coordination, for the State of Maryland.

Agriculture				
December 2019	Solicit proposals for funding that will support demonstrations for alternative technologies that use and manage animal waste, including manure-to-energy technologies.	Solicitations will be forthcoming in FY2018 and FY2019.	MDA - DNR	During FY18, MDA awarded \$2 million in grants for 2 animal waste technologies: 1) \$1.85 million grant to Kilby Farm, LLC in Cecil County to install an anaerobic digester at its 400-head dairy operation, and 2) \$220,000 to Planet Found Energy Development, LLC to install a soil blending and bagging system on an existing 1,250 ton/year combined anaerobic digestion and nutrient capture system facility. No awards were made in FY19.
December 2019	Facilitate participation and provide continued financial incentives in FY 2018 and 2019 for the Manure Transport Program in support of the Maryland Phosphorus Initiative.	Provide financial assistance to farmers who cannot use manure in accordance with a Nutrient Management Plan to transport the manure to a producer or alternative use that can utilize it.	MDA	Ongoing.
December 2019	Implement the Maryland Phosphorus Initiative -Refine soils data collection to track Phosphorus Management Tool use and assure implementation Tiers as farms transition	Report status on PMT Initiative	MDA	2018 begins the Tier transition schedule to implement the PMT. Operations that have a P-FIV >450 are placed into tier C. Those operations that are in Tier B P-FIV 300-450 begin transition in 2019. Regulations adopted in 2015 still place a ban on P application on fields with an P-FIV >500. Implementation reviews will be initiated to confirm adherence to the regulations.

December 2019	Certify the verifiers for the Agricultural Certainty program.	Work closely with the Nutrient Trading Program and anticipate the Certainty Program will be used to prequalify producers for participation in trading. Continued outreach to local farm community	MDA	Soils data refinement is ongoing as we are doing implementation reviews to obtain the data for operations that were not initially reported. One new verifier is in the process of being certified, and all verifiers will be provided with training when the calculation tool calibration to the Chesapeake Bay Watershed Model 6 is officially released later this year.
December 2019	Increase public awareness of agriculture's conservation efforts	Provide public, web-based tools demonstrating conservation implementation within Maryland's agricultural sector MDA will develop an interactive Dashboard to demonstrate conservation implementation levels of multiple BMP types at county and/or basin scales.	MDA	Ongoing.

December 2019	CAFO Permit/Registrations/Renewal	Renew general CAFO permit by December 1, 2019. Register remaining CAFOs under 2014 general permit: unregistered CAFOs and CAFOs with administratively extended registrations under 2009 general permit by December 1, 2019. This should total 141 registrations between January 2018 and December 2019.	MDE/ LMA	Issuance of the new General Discharge Permit for Animal Feeding Operations was delayed by an extension of the comment period. Currently we have about 19 facilities left to register under the 2014 permit. These facilities will be a priority inclusion under the new permit.
December 2019	Improve documentation and increase BMP implementation to decrease nitrogen loads from agricultural lands	Conduct site inspections to document appropriate livestock exclusion setbacks consistent with state nutrient management regulations Conduct site inspections to improve documentation of farmer-funded BMP installation (i.e. resource improvements) for submission to CBP Increased outreach with nutrient management program and service providers to increase compliance with nutrient management regulations and increase acreage of precision practices.		Ongoing

Nutrient and	Sediment Trading Program			
July 2018	Finalize proposed COMAR 26.08.11, Maryland Water Quality Trading Program.	2018 Final Regulations COMAR 26.08.11	MDE - MDA	COMAR 26.08.11 Regulations were promulgated on July 16, 2018.
December 2018	Develop forms for certification, verification and registration of credits.	2018 - Final Forms for certification, verification and registration of credits.		Forms for certification, verification and registration of credits were posted to the MDE trading website in Summer 2019. The forms were developed for Stormwater
December 2018	Update April 2017 Maryland Trading and Offset Guidance Manual be consistent with the adopted COMAR 26.08.11	Updated Trading and Offset Guidance Manual		& Alternative practices (e.g. Tree planting, shoreline management), Wastewater, and Oyster Aquaculture.
December 2018	Incorporate specific language on trading permits, e.g. if MS4s will be allowed to use trading to fulfill its restoration requirements or WWTPs plan to use credits in the market.	Update permits		MDE has begun creating 6 trading guidance documents which address how to generate and purchase credits to provide clear information to potential participants and the public. 7 Phase I MS4s and over 12 WWTPs have modified their permits to participate in this program.
December 2019	Regulations that establish the requirements and standards for the generation and certification of nutrient and sediment credits on agricultural land.	Final Regulations	MDA	Revised regulations were adopted July 16, 2018.

Growth				
December 2019	Growth Updates - MDE will update CBP modeling tools with new local data on a two year basis in coordination with MDP, and explore the use of the MDP Growth Simulation Model as an alternative to the CBP modeling tools to account for 2025 projected growth	Provide Growth Documentation	MDE, IWPP/ MDP	MDE provided the relevant LU change information to the Chesapeake Bay Program as part of the Phase III WIP process.
December 2019	Accounting for Growth	Policy on AfG -Continue formulation of an accounting for growth policy and regulations if appropriate as part of the Phase III WIP	MDE	Maryland outlined a "4-pronged" strategic approach to AfG in its Phase III WIP. The State will assess sector specific loads in future milestones.
December 2019	Sector Growth Demonstration	Documentation	MDE	The results were incorporated into the Phase III WIP document.
December 2019	Accounting for growth in the Poultry Industry	Document current and future growth in the poultry industry though CAFO/MAFO permits numbers and reconcile those against NASS annual numbers. Estimate nutrients associated with manure incrementally over two year milestone period	MDA	MDA, in cooperation with MDE's CAFO/MAFO permit authority, will review expected poultry inventory for comparison with NASS data. Concurrently, MDA will pursue information from industry partners on poultry inventory both for new growth versus replacement inventory. Data sources for submission to CBPO modelers to align with Poultry Litter Subcommittee Report for inclusion in the model is TBD

Other				
December 2019	Maryland will continue its involvement in the Federal Facilities Workgroup (FFW) to assist federal agencies track and report BMP implementation on federal lands.	Continued coordination with federal agencies to ensure federal facility targets, the use of the Phase 6 watershed model, and federal facility-content in the Phase III WIP are fully supportive of Maryland's WIP implementation.	MDE	Maryland has continued to be an active partner in the FFW, and has provided multiple feedback loops. The ratio of BMPs credited to DOD in the model is the highest of the 4 jurisdictions with DOD land at 89% of BMPs getting credit in the model.
December 2019	Continue to market 2017 approved eligible uses of BRF and other State Funding Programs to increase implementation of Septic Strategies, SWM retrofits, Minor WWTP upgrades.	WQFA has already started with the solicitation to fund minor WWTPs and will continue to offer these funding opportunities to over 600 eligible applicants.	MDE - WQFA	Project is ongoing
December 2019	Clean Water Commerce Act -Complete regulation promulgation -Implement Request for Proposals for the purchase of nutrient and sediment reductions -Complete the purchase of up to \$4M for reductions in SFY2018; \$6M in SFY 2019	- Regulations - RFP SFY2018 & SFY2019 - Report status of Purchase	MDE – WQFA	Regulations were completed in April 2018 and therefore funds were not available for SFY2018. In SFY 2019 \$4.4 million dollars were spent on 1 Stream Restoration Project Effort is ongoing in SFY2020

December 2019	Water Reuse Initiative -MDE will investigate water re- use as a new initiative	Develop recommendations for policy changes	MDE	MDE has begun working on greywater regulations and Class IV water resuse reguations. We are also working with a consortium to increase water reuse in agriculture. Currently two larger scale water resuse projects moving forward.
December 2019	Fully implement BMP Verification Program and update Maryland's BMP Verification Program Plan (Quality Assurance Project Plan) with any relevant changes	Full reporting of BMP verification and updates to Maryland's BMP Verification QAPP.	MDE, MDA, DNR	Maryland's BMP verification program is fully operational, and any updates to existing verification methodologies will be updated annually.
December 2019	Chesapeake and Atlantic Coastal Bays Trust Fund: Cost- Effective Non-Point Source Pollution Reduction Projects	Increase funding available for competitive solicitations of the most cost-effective, efficient nonpoint source pollution reduction projects by exploring opportunities for private capital and continued leveraging of public funds.	DNR - Bay Agencies	The SFY20 request for proposals was issued on March of 2019 and approximately \$21 million was awarded in summer 2019. The SFY21 request for proposals was issued on November 20, 2019 with a February 14, 2020 due date. Anticipate awarding \$23 million in July 2020. Trust Fund managers will continue to target the funds based on cost-efficiency, geographic targeting, and readiness and ability to proceed, while exploring legislative and grant mechanism changes to leverage more private capital and investment in non-point source pollution reduction.

December 2019	Chesapeake & Atlantic Coastal Bays Trust Fund: Strategic & Targeted Monitoring	Continue to monitor targeted Trust Fund projects sites for efficacy and annually issue a Restoration Research grant in partnership with Chesapeake Bay Trust to answer key scientific questions about Non- point Source pollution reduction projects.	DNR	A solicitation for SFY20 projects was issued in the fall of 2019 for the next round of research proposals. The SFY19 projects were awarded in the summer of 2019. In addition to these monitoring efforts, Resource Assessment Service at DNR continues to provide long-term monitoring of isolated BMPs to determine efficacy and efficiency of state investments
December 2019	Chesapeake & Atlantic Coastal Bays Trust Fund: Technical Support through Restoration Specialists	Provide continued hands-on landscape level technical assistance to local governments and non-governmental organizations implementing restoration projects in the watershed	DNR	Restoration specialists at the Center for Habitat Restoration and Conservation at DNR continue to provide technical assistance to local governments, watershed organizations, private landowners and others interested in addressing water quality and natural resource management issues with latest science and techniques. These specialists also work with applicants to Chesapeake Bay Trust's Watershed Assistance Grant, the Trust Fund competitive solicitation and Natural Filters funding to promote best management practice techniques that advance restoration science, outcomes, and cost-efficiency.
December 2019	Chesapeake & Atlantic Coastal Bays Trust Fund: Technical Support through Soil Conservation District staff	Provide continued technical support to evaluate, design, and assist farmers with the installation of BMPs.	DNR - MDA	The SFY20 Trust Fund budget, and proposed SFY21 budget, continues supporting 66 soil conservation district positions (41 state and 25 local costshare).

December 2019	Chesapeake and Atlantic Coastal Bays Trust Fund: Innovative Technology Fund	Develop new non-point source BMPs for nitrogen, phosphorus and sediment reduction by: (1) Annually fund 2-6 research and development projects, and invest in one commercial project; (2) Expand partnerships with other programs that develop emerging technologies and products; (3) Applicable new innovative BMPs will be reviewed using the Bay Partnership approval process or other appropriate implementation review avenue.	DNR	The SFY20 budget, and proposed SFY21 budget, at \$1million will continue research and development projects and seed capital investments.
December 2019	BMP Calculator	Design and develop a publicly available open-source application that enables applicants and grantees to estimate the nitrogen, phosphorus and sediment reductions expected from their implementation projects.	DNR	FieldDoc.com was updated with the Phase 6 Watershed Model loading sources, loading rates and BMPs.
December 2019	Chesapeake and Atlantic Coastal Bays Trust Fund: Watershed Assistance Collaborative	Provide leadership with a dedicated DNR staff and continue funding for Maryland's Watershed Assistance Collaborative's (WAC) effort to expand the communities it works with and improve outreach. Fund and manage two Watershed Specialists' outreach in 9 counties.	DNR	In addition to the five restoration specialists, long-term financing strategy development is provided by the Environmental Finance Center to local communities. These strategies will address local community stormwater financing and help craft strategies that best meet local needs.

December 2019	Local WIP Implementation Funding	Annually provide at least \$1 million in funding to support local two-year milestone implementation.	DNR - MDE	Beginning in FFY14 MDE, DNR and the Chesapeake Bay Trust (CBT) began a collaborative process of administering federal funds to support local 2-year milestone implementation. This is an extension of the Watershed Assistance Grant Program (WAGP) initiated by DNR and CBT. This funding goes toward program development planning and the design of urban stormwater projects. The latter leads to shovel-ready projects for larger capital grant funding of restoration. Funding continued in FFY19 and is in the FFY20 budget. Request for proposals for FFY20 were issued with awards expected to be announced in winter 2020.
December 2019	Create a Maryland Stream ReLeaf Implementation Plan for 2015-2020 through the multi- stakeholder Stream ReLeaf Coordinating Committee	Maryland Stream ReLeaf Implementation Plan for 2015- 2020	DNR	Focus on buffer monitoring and NFWF grant to address invasive species and concentrated flow issues. Collect data on increasing function over time of previously planted buffers, and the transformative nature for streams. Investments in CREP easements show good progress. FSA surveys of those not re-enrolling in CREP found that a third of forest buffers can't reenroll because they are in easements now.

December 2019	Stormwater and Nutrient Abatement Program (SNAP)	Implementation of a program to identify, evaluate, prioritize and implement restoration projects on DNR lands to assist the State Highway Administration in reaching its allocated TMDL reduction.	DNR - SHA	A Memorandum of Understanding between DNR and SHA was executed in October 2016 to provide restoration projects on DNR lands funded by SHA.
December 2019	Coastal Resiliency Grant Program	Design and implement innovative climate-resilient coastal restoration projects	DNR	The goal of this program is to utilize natural and nature-based features to help protect coastal residents, economies and public resources from the full impacts of flooding, erosion, storm surge, and sea level rise. Four projects are currently underway in Prince George's, St. Mary's, Dorchester, and Somerset counties, with two additional projects planned for Anne Arundel County. CCS plans to competitively solicit projects for FY 2019 and will work with grantees through all phases of completion, including design, permitting, construction, adaptive management, outreach, and monitoring.
December 2019	A resilient and ready Maryland	Utilize restoration for resiliency	DNR	To address the immediate and increasing threat of flooding and higher intensity storms, we will develop a Resiliency Financing Institute to identify sustainable funding sources for investments that reduce risk; undertake priority resiliency projects to protect vulnerable coastal communities and ecosystems, and launch a local adaptation certification program that will enable local government agencies to gain better knowledge to address local risks. This will be accomplished through: 1) utilizing natural features to protect against flooding, erosion, storm surge and sea level rise; 2) develop a resiliency financing tool; 3) advancing the

				science of thin layered dredge applications for habitat management and climate co-benefits; 4) continue resilient communities grants; 5) making state parks more resilient via green infrastructure; 6) partner with federal military bases on landuse study; 7) incorporate resiliency benefits onto land conservation acquisitions
December 2019	Accelerate Oyster Restoration and Aquaculture for Water Quality	Increase oyster biomass for use in Bay Program crediting	DNR	Increasing biomass will be achieved by: 1) developing oyster cooperatives with MDOT, ORP and others to fund and implement oyster biomass production;and, 2) connecting private capital to aquaculture
December 2019	Establish Maryland Climate Leadership Academy	Launch the nation's first state- led Climate Leadership Academy that will be a forum to educated and train government officials, nonprofits, and infrastructure organizations on the basics of climate change.	DNR	At a launch event on the first day of Maryland's inaugural State of the Coast conference, senior state and local officials and decision-makers developed a vision for the academy, which will be an important resource to help public and private sector incorporate the impacts of climate change into their decision-making and planning.
December 2019	WORK2LIVE WELL	Initiate an apprenticeship program for job skills training in the natural resources field.	DNR	Civil justice corps and MD conservation corps providing work place training in conservation through work at MD state parks.
December 2019	Carbon Farming on DNR Owned Agricultural Land	A new initiative called "Carbon Farming" that would use DNR owned agricultural land to pilot implementation of practices that increase the concentration of carbon in the soil.	DNR	DNR has begun mapping lease sites and working with state land managers to identify potential project opportunities.