



NASA Langley Research Center

Municipal Separate Storm Sewer System (MS4) Program Plan

Permit Year: July 1, 2025, to June 30, 2026

Permit #VAR040092



Submitted to the Virginia Department of Environmental Quality in compliance with Permit #VAR040092

TABLE OF CONTENTS

1	Introduction	1
2	MS4 Program Plan.....	1
	MCM 1: Public Education and Outreach.....	1
	MCM 2: Public Involvement and Participation.....	5
	MCM 3: Illicit Discharge Detection and Elimination (IDDE).....	9
	MCM 4: Construction Site Stormwater Runoff and Erosion and Sediment Control	11
	MCM 5: Post-Construction Stormwater Management.....	13
	MCM 6: Pollution Prevention/Good Housekeeping.....	15
	Daily Operations Pollution Prevention and Good Housekeeping Program.....	15
	Signed Certification Statement in accordance with 9VAC25-890-40.....	24
	Documents Incorporated by Reference.....	25
	Appendix A: NASA Langley IDDE Handbook.....	A-1
	Appendix B: NASA Langley Green Infrastructure Maintenance Guide	B-1
	Appendix C: NASA Langley Environmental Specifications.....	C-1
	Appendix D: NASA Langley Standards and Specifications for ESC and SWM; and DEQ Approval Letter	D-1



1 Introduction

This document is NASA Langley Research Center’s (NASA Langley) plan to meet the requirements of 9VAC25-890-40 “Virginia Pollutant Discharge Elimination System (VPDES) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s).” This Program Plan has been updated to ensure LaRC’s compliance with the General Permit for the Program Year from July 1, 2025 – June 30, 2026.

NASA Langley has conducted a comprehensive review of its existing stormwater management operations and policies to ensure alignment with the General Permit requirements, including the six Minimum Control Measures (MCMs) and Total Maximum Daily Load (TMDL) specifications. Based on that review, NASA Langley has developed a strategic and cost-effective Program Plan with the goal of minimizing stormwater pollution to the maximum extent practicable. The Environmental Management Office (EMO) is the organization that will be primarily responsible for implementation of the following plan.

2 MS4 Program Plan

The process in which NASA Langley will implement and maintain compliance with the six MCMs specified in Part I E of the MS4 General Permit (VAR040092) will be detailed in the sections below. For each MCM, the plan provides NASA Langley’s current and future goals, outlines how applicable permit requirements will be addressed, and identifies the specific elements that will support ongoing compliance.

MCM 1: Public Education and Outreach

NASA Langley is a non-traditional permit holder (Federal Facility) with no resident population. In terms of public education, and in keeping with EPA guidance, NASA Langley defines “public” as the employees and contractors that are located within the fence line of the Center.

NASA Langley’s MS4 Public Education and Outreach Program has **three primary goals**:

- Increase the public's knowledge of how to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns;
- Increase the public's knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications; and
- Implement a diverse program with strategies that are targeted toward individuals or groups most likely to have significant stormwater impacts.

Strategies for Public Outreach and Education – Part I E 1 d

NASA Langley will use two or more of the strategies listed in Table 1 below to communicate with the public the high-priority stormwater issues identified in accordance with Part I E 1 b including how to reduce stormwater pollution.



Table 1 Strategies for Public Outreach and Education	
Strategies	Examples (provided as examples and are not meant to be all inclusive or limiting)
Traditional written materials	Informational brochures, newsletters, fact sheets, or recreational guides for targeted groups
Alternative materials	Bumper stickers, refrigerator magnets, t-shirts, or drink koozies
Signage	Temporary or permanent signage in public places or facilities, vehicle signage, billboards, or storm drain stenciling
Media materials	Information disseminated through electronic media, radio, televisions, movie theater, newspaper, or GIS story maps
Speaking engagements	Presentations to NASA community, school, church, industry, trade, special interest, or community groups
Training materials	Materials developed to disseminate during workshops offered to local citizens, trade organization, or industrial officials
Public education activities	Booth at community fair, demonstration of stormwater control projects, presentation of stormwater materials to schools to meet applicable education Standards of Learning or curriculum requirements, or watershed walks
Public meetings	Public meetings on proposed community stormwater management retrofits, green infrastructure redevelopment, ecosystem restoration projects, TMDL development, voluntary residential low impact development, or other stormwater issues

Education Priorities Rational and Target Audience – Part I E 1 f

NASA Langley’s MS4 Public Education and Outreach Plan, as required by the General Permit, emphasizes at least three high-priority stormwater issues. These priorities were carefully chosen based on their significance to NASA Langley’s stormwater management efforts. The following sections outline each selected priority, rationale behind the selection, intended target audience, communication strategies (as referenced in Table 1), and the projected timeline for distribution.

Priority 1 – Illicit Discharge Detection and Elimination (IDDE): Field Response

Rationale: Given NASA Langley field personnel’s essential role in identifying, reporting, and mitigating illicit discharges, it is critical that these individuals have streamlined access to procedural guidance and regulatory requirements on the job. The distribution of educational materials that incorporate detailed procedural checklists and reference materials outlining applicable federal, state, and local stormwater regulations will support compliance and consistency in response actions. Empowering personnel with real-time decision-making tools and information enables the proactive prevention of polluted discharges.



Target Audience: Onsite construction and maintenance personnel, contractors, and project managers.

Strategies from Table 1 of Part I E 1 d: Traditional written materials, signage, training materials.

Anticipated time periods messages will be communicated or made available to the public: Continuous throughout the permit year, including but not limited to annual stormwater training, field reference guides, informational poster displays, storm drain signage, and/or other relevant training opportunities.

Responsible Party: NASA Langley EMO

Measurable Goal: Tracking of training attendance, amount of outreach materials distributed, number of signs posted, and documentation of feedback.

Priority 2 – Environmental Impacts of NASA Langley Processes: The Importance of the Langley Form (LF) 461

Rationale: The LF 461, Environmental Project Planning Form, is a requirement by NASA Langley EMO to evaluate the potential environmental impacts of proposed projects at the Center (construction, rehab, research and development activities, facility closure, etc.). This form functions as a critical mechanism for ensuring project-level compliance with applicable environmental permits and for identifying and mitigating risks that could result in unauthorized discharges. To support consistent completion, targeted efforts will be undertaken to ensure personnel are aware of the LF 461, its applicability across project types, and its role in NASA Langley's broader environmental compliance and stormwater pollution prevention framework.

Target Audience: All NASA Langley personnel, Facility Coordinators (FCs), Facility Environmental Coordinators (FECs), and project managers.

Strategies from Table 1 of Part I E 1 d: Traditional written materials, speaking engagements, training materials.

Anticipated time periods messages will be communicated or made available to the public: Continuous throughout the permit year, including but not limited to annual stormwater training, meeting and distributing outreach materials to FECs and FCs during annual multi-media audits, and other relevant training opportunities.

Responsible Party: NASA Langley EMO

Measurable Goal: Tracking of training attendance, amount of outreach materials distributed, and documentation of feedback.

Priority 3 – Chesapeake Bay and Back River TMDL Education

Rationale: NASA Langley is under a TMDL for the Chesapeake Bay and a bacterial TMDL for the Back River watershed. The Center continues to educate its personnel to meet the challenges of these TMDLs. Meeting the reductions required will be a long-term challenge, as laid out respectively in the DEQ-approved Chesapeake Bay TMDL Action Plan and the Back River Action Plan. The Center Operations Directorate (COD) will be the primary organization responsible for meeting the challenges of the TMDLs. COD is responsible for managing long term maintenance of SWM facilities, grounds



maintenance, ensuring projects are designed appropriately, etc. Targeted outreach and trainings to COD personnel and to the general NASA Langley workforce is needed to bring awareness and understanding of current Center-wide initiatives and future requirements. For the Chesapeake Bay TMDL, outreach is needed to ensure requirements continue to be incorporated in plans for building construction, renovations, infrastructure improvements, as well as general Center-wide stormwater control management. For the Back River bacterial TMDL, outreach is needed to ensure awareness and understanding of Center strategies to reduce bacterial loading. NASA Langley will emphasize its policy of not feeding wildlife on Center and execute targeted outreach for dumpsters, picnic tables, facilities, and recreational areas. General outreach and educational materials will also be provided for interested NASA Langley employees outlining tips and habits they can adopt on Center and at home.

Target Audience: All NASA Langley personnel, with an emphasis on the Facility Management Office and Master Planning Office within COD.

Strategies from Table 1 of Part I E 1: Traditional written materials, public education activities, training materials.

Anticipated time periods messages will be communicated or made available to the public: Continuous throughout the permit year, including but not limited to annual stormwater training, informational poster displays, specialized training for associated personnel and FECs, and other relevant training opportunities.

Responsible Party: NASA Langley EMO

Measurable Goal: Tracking of training attendance, amount of outreach materials distributed, number of signs posted, and documentation of feedback.

Public Contact Information – Part I E 1 c (4)

Any individual interested in finding out more information or providing feedback about the high-priority public education and outreach program, or any other aspects of NASA Langley’s stormwater program, should contact the NASA Langley Water Program Manager listed here: <https://environmental.larc.nasa.gov/program-contacts/>.

Additional information can also be obtained on the public website: <https://environmental.larc.nasa.gov/water/ms4/>. NASA Langley will provide contact information with each outreach activity and maintain up-to-date information on the website.

Annual Reporting Requirements – Part I E 1 g

NASA Langley will include the following information in each annual report:

- (1) A list of the high-priority stormwater issues the permittee addressed in the public education and outreach program;
- (2) A summary of the public education and outreach activities conducted for the report year, including the strategies used to communicate the identified high-priority issues;
- (3) A description of any changes in high-priority stormwater issues, including, strategies used to communicate high-priority stormwater issues or target audiences for the public education and outreach plan. The permittee shall provide a rationale for any of these changes; and



- (4) A description of public education and outreach activities conducted that included education regarding climate change.

MCM 2: Public Involvement and Participation

NASA Langley recognizes the importance of fostering public engagement and encouraging collaboration with surrounding communities. Center management actively supports these initiatives as a means to strengthen stakeholder relationships and promote shared environmental stewardship.

Public Input on the MS4 Program – Part I E 2 a (2)

NASA Langley will notify the “public” (employees and contractors) and provide for receipt of comments on NASA Langley’s MS4 Program Plan through the internal Inside Langley system and external public website. This notification will be made twice during the permit year to ensure adequate time for public comment and consideration. EMO will respond to all public comments received and maintain documentation of comments and responses.

Additionally, the public is reminded and encouraged to provide comments or input on the MS4 Program at any time. This can be done through the public webpage: <https://environmental.larc.nasa.gov/water/ms4/>

MS4 and Stormwater Pollution Prevention Webpages – Part I E 2 b

NASA Langley maintains webpages dedicated to the MS4 program and stormwater pollution prevention. The following information is included in the webpages and will be maintained throughout the permit:

- (1) The effective MS4 permit and coverage letter;
- (2) The most current MS4 Program Plan or location where the MS4 Program Plan can be obtained;
- (3) The annual report for each year of the term covered by this permit no later than 30 days after submittal to the department;
- (4) The most current Chesapeake Bay TMDL action plan or location where the Chesapeake Bay TMDL action plan can be obtained;
- (5) The Chesapeake Bay TMDL implementation annual status reports for each year of the term covered by this permit no later than 30 days after submittal to the department;
- (6) A mechanism for the public to report potential illicit discharges, improper disposal, or spills to the MS4, complaints regarding land disturbing activities, or other potential stormwater pollution concerns in accordance with part I E 2 a (1);
- (7) Methods for how the public can provide comments on the MS4 program in accordance with part I E 2 a (2).

The webpages dedicated to the MS4 program and stormwater pollution prevention can be found at: <https://environmental.larc.nasa.gov/water/ms4/>. Personnel are able to report any concerns or potential pollution activities through contact information provided on the webpages at: <https://environmental.larc.nasa.gov/reporting-water-pollution/>. Additionally, information on how to report is included in outreach material and water quality trainings.

The internal Inside Langley system will serve as the notification platform to inform all NASA Langley employees about recent updates and publication of the Program Plan and Annual Report on the webpage. This system notifies all employees. Records of these actions will be kept on file with EMO.



Public Involvement Opportunities – Part I E 2 d

NASA Langley will implement, promote, participate in, or coordinate no fewer than four activities per year from two or more of the categories listed in Table 2 below. These efforts are designed to engage the public in initiatives that improve water quality and support local restoration and clean-up projects.

Table 2 Public Involvement Opportunities	
Public Involvement Opportunities	Examples (Provided as an example and are not meant to be all inclusive or limiting)
Monitoring	Establish or support citizen monitoring group
Restoration	Stream, watershed, shoreline, beach, or park clean-up day, adopt-a-waterway program, tree plantings, and riparian buffer plantings
Public education activities	Booth at a community fair, demonstration of stormwater control projects, presentation of stormwater materials to schools to meet applicable education Standards of Learning or curriculum requirements or watershed walks
Disposal or collection events	Household hazardous chemicals collection, vehicle fluids collection
Public meetings	Public meetings on proposed community stormwater management retrofits, green infrastructure redevelopment, ecosystem restoration projects, TMDL development, voluntary residential low impact development, or other stormwater issues
Pollution prevention	Adopt-a-storm drain program, implement a storm drain marking program, promote use of residential stormwater BMPs, implement pet waste stations in public areas, adopt-a-street program

Public Involvement Opportunity 1 – Informational Tabling

Category from Table 2: Public education activities

Description: To enhance public engagement and raise awareness of the Center’s stormwater system, EMO will host an outreach table in the breezeway of Building 2102, a high-traffic area adjacent to the Center cafeteria. Scheduled during peak lunch hours to maximize visibility, the event will provide NASA Langley personnel with educational handouts covering various water quality topics. EMO staff will be available to answer questions and engage with employees directly. The event will be promoted through the Inside Langley system and a center-wide email announcement.

Anticipated time when activity will occur: September 2025

Metric to determine if activity is beneficial to water quality: Amount of outreach materials distributed, number of visitors, and documentation of feedback.

Public Involvement Opportunity 2 – Trivia



Category from Table 2: Public education activities

Description: EMO will host a stormwater-focused trivia event open to all NASA personnel. Held at an on-center location, the event will feature questions designed to engage participants with NASA Langley-specific environmental topics, including stormwater management policies, procedures, and applicable regulatory requirements. The activity aims to promote awareness and reinforce knowledge of the Center's local waterways and environmental responsibilities in an interactive format. The event will be promoted through the Inside Langley system and a center-wide email announcement.

Anticipated period when activity will occur: April 2026

Metric to determine if activity is beneficial to water quality: Number of participants and documentation of feedback.

Public Involvement Opportunity 3 & 4 – Plastic Bag and Film Recycling

Category from Table 2: Disposal or collection event

Description: NASA Langley will continue to partner with the York/Poquoson Master Gardeners to recycle plastic bags and film packaging. Collecting and recycling this material prevents the waste from entering out local waterways and landfills and educates participants on the importance of pollution prevention. The event will be promoted through the Inside Langley system and collection boxes will be placed in the high-traffic areas of the breezeway of Building 2102.

Anticipated period when activity will occur: October 2025 and April 2026

Metric to determine if activity is beneficial to water quality: Weight of plastic material collected.

Public Involvement Opportunity 5 – Household Chemical Collection

Category from Table 2: Disposal or collection events

Description: NASA Langley will promote various local household chemical collection events held around Hampton Roads. Advertising collection events for proper disposal of household chemicals prevents the waste from potentially entering our local landfills and waterways. These events will be promoted through the Inside Langley system.

Anticipated period when activity will occur: As events occur throughout the permit year.

Metric to determine if activity is beneficial to water quality: Number of participants (attendance collected during Annual Waste Management and Spill Response Training).

Annual Reporting Requirements – Part I E 2 i
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NASA Langley will include the following information in each annual report:

- (1) A summary of any public comments on the MS4 program received and how the comments were responded to;



- (2) A summary of stormwater pollution complaints received under the procedures established in Part I E 2 a (1), excluding flooding complaints, and how the permittee responded;
- (3) A webpage link to the MS4 program and stormwater website;
- (4) Provide evidence of the current internal MS4 program and stormwater pollution prevention webpage;
- (5) A description of the public involvement activities implemented by the permittee, including any efforts to reach out and engage all economic and ethnic groups;
- (6) A description of public education and outreach activities conducted that also included education regarding climate change;
- (7) A report of the metric as defined for each activity and an evaluation as to whether or not the activity is beneficial to improving water quality; and
- (8) The name of other MS4 permittees with whom the permittee collaborated in the public involvement opportunities.



MCM 3: Illicit Discharge Detection and Elimination (IDDE)

NASA Langley will continue to maintain an effective IDDE program. This updated Program Plan reinforces established practices while advancing the program’s effectiveness in identifying, addressing, and preventing illicit discharges.

MS4 Map and Information Table – Part I E 3 a

NASA Langley will continue to maintain a comprehensive GIS-based MS4 map, which includes storm sewer locations and an associated information table. The current mapping system displays all known stormwater conveyances, channels, ditches, flow directions, and MS4 outfall locations—each assigned a unique identifier. The information table associated with the storm sewer system map includes detailed data for each outfall, such as geographic coordinates (latitude and longitude), estimated regulated drainage area (acreage), the name of the receiving water, the 6th Order Hydrologic Unit Code of the receiving water, an indication as to whether the receiving water is listed as impaired in the Virginia 2020 305(b)/303(d) Water Quality Assessment Integrated Report, and the name of any applicable TMDLs.

The MS4 map layer can be found at (inside NASA Langley firewall only):

<https://gis-portal.ndc.nasa.gov/arcgis/home/webmap/viewer.html?webmap=3a47a3cece5543339c8ac7d47ce65e4a>.

The associated information table is maintained by EMO and is available upon request.

In compliance with Part I 3 a (3) and (4), NASA Langley will submit to DEQ a GIS-compatible shapefile of the MS4 map and associated table no later than 24 months after permit issuance. The map and information table will be updated no later than October 1 of each year.

Illicit Discharge Prohibition – Part I E 3 b

Illicit discharges are prohibited via the Langley Procedural Requirements (LPR) 8500.1, titled the Environmental and Energy Program Manual. Sections 5.1 and 5.2 of the document outline the regulatory requirements and procedures associated with water quality standards and permitted discharges at NASA Langley, while Section 5.3 defines the roles and responsibilities of applicable personnel in ensuring compliance. These policies are accessible to Center personnel via the Langley Management System (LMS), the internal environmental website, and are reinforced through various environmental training sessions.

IDDE Written Procedures – Part I E 3 c

NASA Langley has established written procedures to detect, identify, and address unauthorized non-stormwater discharges, including illegal dumping, to the MS4. These procedures are documented in the NASA Langley IDDE Handbook, which serves as the comprehensive summary of the Center’s program. The handbook fully addresses the requirements outlined in General Permit Part I E 3 c, and includes detailed guidance on outfall screening, field methodologies, inspection protocols, response timeframes, and procedures for source investigation and elimination.

Please see Appendix A for a copy of NASA Langley’s IDDE Handbook.

Physical Interconnections – Part I E 3 d (2)

Langley Air Force Base (LAFB) is the only downstream establishment with a MS4 that is physically interconnected with NASA Langley. LAFB is part of Joint Base Langley-Eustis which is comprised of two geographically separate entities: LAFB in Hampton and Fort Eustis in Newport News. LAFB’s MS4



permit was reissued in November 2023. Fort Eustis has an MS4 permit; however, it is not physically interconnected to NASA Langley.

NASA Langley and LAFB communicate frequently regarding National Environmental Policy Act (NEPA) reviews, system interconnections, and potential project-related environmental impacts. Both facilities also promote one another's environmental outreach events, including cleanups, workshops, and speaker events.

Official written notification for the previous permit cycle was completed on October 24, 2023 for the new MS4 permit cycle of 2023-2028, and is maintained on file by EMO. The primary connection points are the stormwater ditch by the Durand Gate and the stormwater ditch running parallel to the taxiway onto LAFB.

Annual Reporting – Part I E 3 e

NASA Langley will include the following information in each annual report:

- (1) A confirmation statement that the MS4 map and outfall information table have been updated to reflect any changes to the MS4 as of June 30th of the reporting year;
- (2) The total number of outfalls and observation points screened during the reporting period as part of the dry weather screening program; and
- (3) A list of illicit discharges to the MS4 including spills reaching the MS4 with information as follows:
 - a. The location and source of illicit discharge;
 - b. The date that the discharge was observed, reported, or both;
 - c. Whether the discharge was discovered by the permittee during dry weather screening, reported by the public, or other method (describe);
 - d. How the investigation was resolved;
 - e. A description of any follow-up activities; and
 - f. The date the investigation was closed.



MCM 4: Construction Site Stormwater Runoff and Erosion and Sediment Control

NASA Langley has developed Virginia Erosion and Stormwater Management Act (VESMA) Standards and Specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) that are integral components of NASA Langley’s design, construction, maintenance, and management of the Center’s facilities and operations. The primary regulatory driver for NASA Langley’s Standards and Specifications for ESC and SWM is the Virginia Erosion and Stormwater Management Regulation (9 VAC 25-875), the General VPDES Permit for Discharges of Stormwater from Construction Activities (9 VAC 25-880/VAR10), Energy Independence and Security Act of 2007 (EISA) Section 438, and NASA Langley’s MS4 permit (VAR040092). The NASA Langley Standards and Specifications for ESC and SWM has been developed to provide detailed information regarding NASA Langley’s compliance with all regulatory requirements.

Any NASA Langley employees and contractors serving as plan reviewers, inspectors, program administrators, and construction site operators shall obtain the appropriate certifications as required under the Virginia Erosion and Stormwater Management Act and its attendant regulations.

VESMA Specifications and Standards – Part I E 4 d (3)

The NASA Langley Standards and Specifications for ESC and SWM completely detail the Center’s stormwater construction program. The Standards and Specifications are reviewed for approval by DEQ.

This document and a copy of the most recent approval letter can be found in Appendix D.

Legal Authorities/Oversight Requirements – Part I E 4 d (4)

NASA Langley uses design standards and construction specifications to ensure compliance with our MS4 program, DEQ’s VPDES permit (9 VAC 25-880), DEQ’s Erosion and Stormwater Management Regulation (9 VAC 25-875), and the NASA Langley Standards and Specifications for ESC and SWM. Construction contracts include specific language requiring that the contractor remains compliant.

As a regulatory mechanism, the NASA Langley Environmental Specifications Section 01 35 40.00 99 are included in all construction contracts to formally enforce environmental compliance requirements on construction activities.

Please see section 3.3 - Water Quality of the NASA Langley Environmental Specifications located in Appendix C for language requiring the contractor to comply with all applicable environmental requirements.

Inspection Procedures – Part I E 4 d (6)

The NASA Langley Standards and Specification for ESC and SWM addresses stormwater construction inspection procedures. All necessary supporting inspection documentation is maintained by EMO and is available upon request.

This document can be found in Appendix D.

Compliance and Enforcement Action – Part I E 4 d (8)



The NASA Langley Standards and Specifications for ESC and SWM addresses NASA Langley’s stormwater construction program including strategies for requiring compliance through corrective action or enforcement action to the extent allowable.

This document can be found in Appendix D.

Roles and Responsibilities – Part I E 4 d (9)

The NASA Langley Standards and Specifications for ESC and SWM details NASA roles and responsibilities as related to the construction stormwater management program. NASA Langley does not rely on any other entity to implement portions of the MS4 Program Plan.

This document can be found in Appendix D.

EMO shall be the authority for the administration, plan review, and compliance inspection of projects under NASA Langley’s S&S for ESC and SWM. Certifications shall be in accordance with 9VAC25-875-400.

Annual Reporting – Part I E 4 e

NASA Langley will include the following information in each annual report:

- (1) Total number of erosion and sediment control inspections conducted;
- (2) Total number of each type of compliance action and enforcement action implemented; and
- (3) For nontraditional permittees:
 - a. A confirmation statement that land disturbing projects that occurred during the reporting period have been conducted in accordance with the current department approved standards and specifications for erosion and sediment control; and
 - b. If any land disturbing projects were conducted without department approved standards and specifications, a list of all land disturbing projects that occurred during the reporting period with erosion and sediment control plan approval dates for each project.



MCM 5: Post-Construction Stormwater Management

VESMA regulations, state and federal water permitting requirements, and the federal EISA Section 438 requirements have reinforced the importance of an effective post-construction stormwater management program. Permanent stormwater management facilities are used to limit/reduce pollutant loads and to maintain or restore pre-development hydrology of the property regarding temperature, rate, volume, and duration of flow. NASA Langley understands that these functional BMPs require long-term inspection and maintenance. NASA Langley has worked to develop a post-construction stormwater management program within the available resources of the Center. The efforts are combined among EMO, COD, Projects and Engineering Branch, Maintenance and Operations Branch, and the grounds maintenance contract.

Legal Authorities – Part I E 5 d (3)

NASA Langley ensures that required design criteria for stormwater runoff controls are implemented on development and re-development projects, and that adequate post-construction stormwater management is implemented primarily through the NASA Langley Standards and Specifications for ESC and SWM. This document has all the necessary written procedures for a successful program. In addition to the NASA Langley Standards and Specifications for ESC and SWM, projects are expected to comply with NASA Langley Environmental Specifications Section 01 35 40.00 99, NASA Environmental Design Standards, and feedback through the design review process. These documents are incorporated by reference into the NASA Langley Standards and Specifications for ESC and SWM. In combination these documents guide projects on proper ESC and SWM program implementation. The NASA Environmental Design Standards apply to design work. The NASA Langley Environmental Specifications Section 01 35 40.00 99 apply to construction activities.

Please see Appendix C for a copy of the NASA Langley Environmental Specifications Section 01 35 40.00 99.

Please see Appendix D for a copy of the NASA Langley Standards and Specifications for ESC and SWM.

Inspections and Maintenance Written Procedures – Part I E 5 d (4)

In compliance with Part I E 5 d (4), NASA Langley has developed written inspection and maintenance procedures to ensure adequate long-term operation and maintenance of its stormwater management facilities.

The NASA Langley Standards and Specifications for ESC and SWM addresses post-construction stormwater management. This document is being included by reference into MCM 5; the entire document should be considered when evaluating compliance with Permit requirements. The NASA Langley Standards and Specifications for ESC and SWM also addresses SWM facility design criteria and post-construction SWM inspections. At a minimum, all SWM facilities shall be inspected at least annually, and shall include a plan review prior to site visit, a field visit with photographs, and a completed SWM Facility inspection report form.

Please see Appendix D for a copy of the NASA Langley Standards and Specifications for ESC and SWM.

In addition to the NASA Langley Standards and Specifications for ESC and SWM which help ensure compliance with planning and design, the contractual NASA Langley Environmental Specifications Section 01 35 40.00 99 utilizes language to help ensure compliance with MCM 5 during construction. Section 3.3.4 of the specifications has written procedures for SWM facilities.

Please see Appendix C for a copy of the NASA Langley Environmental Specifications Section 01 35 40.00 99.



Moreover, to ensure adequate long-term operation and maintenance of the Center's stormwater management facilities the NASA Langley Green Infrastructure Maintenance Guide has been written into the Grounds Performance Work Statement for compliance. The handbook lists routine maintenance, non-routine maintenance, and industry best practice information for each system. Manufacturer specifications for proprietary systems are also included in the appendix section of the handbook.

Please see Appendix B for a copy of the NASA Langley Green Infrastructure Maintenance Guide.

Roles and Responsibilities – Part I E 5 d (5)

The NASA Langley Standards and Specifications for ESC and SWM details the Center's stormwater post-construction program including roles and responsibilities.

Please see Appendix D for a copy of the NASA Langley Standards and Specifications for ESC and SWM.

Basic roles and responsibilities are as follows:

- MS4 MCM 5 Oversight – EMO is the primary entity responsible for updating and implementing the MS4 Program Plan, as well as advocating for funding to implement the programs.
- SWM Facility Design – Architecture & Engineering contractors, COD, and EMO all have roles and responsibilities to ensure that SWM facilities are properly designed. As discussed in the NASA Langley Standards and Specifications for ESC and SWM, each of the entities is responsible for participating during NASA Langley's design process.
- SWM Facility Inspection – EMO and NASA Langley's construction inspection contractor are the primary entities on Center for SWM facility inspection. EMO and the support contractor conduct inspections during construction and long-term maintenance inspections.
- SWM Maintenance – EMO, COD, and NASA Langley's grounds maintenance contractor all have various responsibilities related to SWM maintenance.

NASA Langley does not rely on any other entity to implement portions of the MS4 Program Plan.

Stormwater Management Facility Spreadsheet – Part III

NASA Langley will maintain an electronic spreadsheet of all owned stormwater management facilities that discharge into the MS4. The spreadsheet will also include all BMPs implemented to meet applicable TMDLs as required in Part II A and Part II B, and all parts identified in Part III C. The spreadsheet is maintained by EMO and will be uploaded to the DEQ BMP Warehouse by October 1st of each year.

Annual Reporting – Part I E 5 e

In each Annual Report, NASA Langley will submit the following:

- (1) The total number of inspections conducted on stormwater management facilities owned or operated by the permittee;
- (2) A description of the significant maintenance, repair, or retrofit activities performed on the stormwater management facilities owned or operated by the permittee to ensure it continues to perform as designed. This does not include activities such as grass mowing or trash collection;
- (3) A confirmation statement that the permittee electronically reported stormwater management facilities using the DEQ BMP warehouse in accordance with Part III B 1 and 2; and
- (4) A confirmation statement that the permittee electronically reported stormwater management facilities inspected using the DEQ BMP Warehouse in accordance with Part III B 5.



MCM 6: Pollution Prevention/Good Housekeeping

Over the last several MS4 permit cycles, NASA Langley has been building a quality stormwater pollution prevention (P2) program. This program incorporates a range of operational and maintenance BMPs designed to minimize or eliminate the discharge of pollutants from Center activities. NASA Langley's center maintenance contractor utilizes the MAXIMO system to manage and track work orders, job planning, and associated costs. As part of the Center's pollution prevention efforts, oil detection alarm systems have been strategically installed at key locations to protect the stormwater network. These alarms are tracked within MAXIMO to ensure that they are operational and performing their function.

In addition to the MS4 permit and MAXIMO, NASA Langley operates under an individual VPDES permit that covers a few select industrial processes.

Written Procedures for Operations and Maintenance Activities – Part I E 6 a and b

In compliance with MS4 requirements, NASA Langley implements the following written good housekeeping procedures for activities at facilities owned or operated by NASA Langley, such as road, street, sidewalk, and parking lot maintenance and cleaning; application and storage of deicing materials, renovation and significant exterior maintenance activities, discharging water pumped from construction and maintenance activities, temporary storage of landscaping materials, equipment maintenance, and the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers.

These written procedures are designed to:

1. Prevent illicit discharges;
2. Ensure the proper disposal of waste materials and prevent waste materials from entering the MS4, including landscape wastes;
3. Prevent the discharge of wastewater, or permittee vehicle wash water, or both into the MS4 without authorization under a separate VPDES permit;
4. Minimize the pollutants in stormwater runoff;
5. Prohibit the application of any anti-icing or deicing agent containing urea, or other forms of nitrogen or phosphorus;
6. Prevent pollutant discharges from leaking permittee vehicles and equipment;
7. Ensure application of materials, including pesticides, herbicides, and fertilizers shall not exceed manufacturer's recommendations.

Daily Operations Pollution Prevention and Good Housekeeping Program

Outfall Booms and Treatment Devices

Inspections are performed and documented at least quarterly at MS4 outfalls by EMO. Any signs of pollution or poor water quality are investigated immediately and traced upstream. If any abnormal conditions are identified that require structural maintenance, a Work Order is sent to the NASA Langley maintenance contractor to correct the problem. Absorbent pads and booms are placed at Outfalls 003, 008, 009, and 012 as a cautionary pollution prevention measure. The Center's maintenance contractor performs weekly preventive maintenance (PM) at these four outfalls. The weekly PM consists of: (1) Visually inspecting the outfall; (2) Inspecting the outfall for evidence of oil sheen and/or trash; (3) Removing any trash accumulated in the outfall; (4) Replacing the oil boom and/or absorbent pads as needed; and (5) Reporting any abnormal conditions or corrective actions needed to EMO.



Street Sweeping and Road/Parking Lot Maintenance

Street sweeping is NASA Langley's primary method to prevent stormwater pollution by collecting debris and litter prior to them being washed into the MS4 and discharged into local waterways. Street sweeping is scheduled quarterly through a contracted service company. Grounds maintenance oversees managing the street sweeping contract and reporting street sweeping data to EMO for tracking and reporting. Street sweeping data, including weight or cubic yards of debris collected, can be viewed by contacting EMO.

All road and parking lot maintenance that involves milling and repaving requires an approved ESC Plan compliant with the NASA Langley Standards and Specifications for ESC and SWM prior to initiating land disturbance. ESC Plans are also required for land-disturbing activities of at least 10,000 square feet or when deemed necessary by the government (to a minimum of 2,500 square feet). The ESC Plan includes methodology for protecting inlets and preventing runoff of sediment. Concrete and asphalt debris is collected and recycled when applicable. Any saw cutting of concrete requires liquids to be captured/disposed of properly to prevent runoff to a drain or ditch. Contractors utilize ESC BMPs when making repairs to potholes and similar minor activities.



Catch Basin Maintenance

NASA Langley has more than 700 catch basins on Center. Many of these are in streets and parking areas. These basins catch sediment and debris that accumulates over time. The grounds maintenance contractor removes debris from basins twice per year and disposes of or composts the debris. Catch basin maintenance data, including weight or cubic yards of debris collected, can be viewed by contacting EMO.

Ditch Maintenance

The Center has an extensive system of grass-lined ditches (~62,000 linear feet) and paved ditches (~2,800 linear feet). The grounds maintenance contractor is responsible for ditch maintenance and has been provided written procedures for ditch maintenance, which require that vegetative growth in drainage ditches be cut to a height of 2 inches on the bottom and sides. All wood, brush, cuttings, trash, and debris are removed and disposed of, and mouths of ditches, inlets, and outlets are cleared of sediment, vegetation, and debris to allow unrestricted flow of water. Where ditch bottoms are paved, all mud and debris are removed from the paved surface and disposed of properly. Per contract requirements, paved ditches are cleaned annually, while non-paved (grass-lined) ditches are cleaned and maintained four times per year. Records of ditch maintenance activities, including the volume of debris collected (measured in cubic yards), are available through EMO.

Leaf Collection Activities

The grounds maintenance contract requires leaf collection and removal of pine straw, pinecones, gumballs, limbs, and other debris across the Center three times per year (typically October, November, and January). All leaf debris collected is composted on Center or at Big Bethel Landfill's composting operation. Leaf collection data, including cubic yards of debris collected, can be viewed by contacting EMO.

Landscape Maintenance/Debris

LPR 8500.1 prohibits the grounds maintenance contractor from blowing or sweeping yard trimmings into the stormwater system. Grass clippings are returned to the lawn to restore important nutrients. The grounds maintenance contractor also periodically trims shrubs, bushes, and trees. This type of woody debris is collected and composted off-Center at an approved landfill.

“Municipal” Yard Inspections



EMO inspects all yard-type areas, including the warehouse areas and the hazardous waste storage facility, throughout the year. EMO inspectors also look for good housekeeping and if any additional pollution-prevention practices could be implemented.

Multi-Media Environmental Audits

EMO conducts at least 40 multi-media environmental audits per fiscal year in facilities with the largest potential environmental impacts. These audits include identifying potential improper discharges to the stormwater system (e.g., leaking equipment, improperly maintained sump pumps or secondary containment for drums, etc.) and providing ways to reduce any identified issues. Any deficiencies are addressed through a Corrective Action Plan with the facility to address root cause and prevent reoccurrence.

Painting and Roof Resealing

Most spray painting is conducted indoors in paint booths that have associated hazardous waste containers to collect the aerosol cans. Any outdoor painting or roof resealing is highly encouraged to use brushes and rollers, and no application is permitted before or during rain events. Roofing products, waste paint, and paint related materials (e.g., used paint brushes, rags, tyveks, washout, etc.) are required to be kept in appropriately labelled waste containers located away from storm drains and in airtight containers to avoid rainwater contamination. All projects are encouraged to keep spill kits nearby in case of spills or emergencies.

Building Power Washing

EMO reviews all power washing job plans. Power washing flow is re-directed to grass when practicable to avoid storm drains. If drains cannot be avoided, they are protected with flexible berms or covers. Only potable water is used. Soap or chemical utilization is especially limited and requires EMO approval. Unit operators observe wash waters for any discoloration or surface sheen and cease work if any is detected.

HVAC Coil Cleaning

Only potable water is used for coil cleaning with processed wash water being prohibited from entering the storm system. HVAC technicians are encouraged to wash equipment in grassy areas when practicable. Depending on the severity of dirt build up, technicians will either use a pressure washer or garden hose. Select jobs require chemical use; all wastewater generated during these tasks is collected for disposal.

Equipment Maintenance

Dewatering of Utility Construction and Maintenance Activities

NASA Langley dewateres utility pits, especially from the steam tunnels and electric manholes. Groundwater accumulates in utility pits, as they sit below the groundwater table. NASA Langley's center-wide maintenance contractor is responsible for dewatering activities and EMO has developed the following procedures that they must follow:

- If any water shows any signs of sediment-related issues, the dewatering operation must use a dewatering bag prior to discharge over a grassy area.
- Activities requiring dewatering shall filter water through dewatering bags or other approved BMP.
- Dewatering devices shall be placed onto grassy areas and away from stormwater inlets and ditches, where practicable.
- If the water has any potential for pollutants (heavy metals, oil/grease from hydraulic lines, etc.) the contractor notifies EMO so a water sample can be obtained for analysis by a local lab. Once the analysis of the water is complete, EMO determines the appropriate disposal method, which may include discharge to the HRSD system with written approval, pump-and-haul off-site disposal, or discharge to the ground if no pollutants are detected.
- Projects with a General VPDES Permit for Discharges of Stormwater from Construction Sites (CGP) shall not allow any dewatering discharge to enter the storm system



Spill Containment Areas for Equipment Storage

An area located at Building 1187 is the primary storage area for many pieces of maintenance equipment, such as emergency generators. This equipment is stored under a permanent canopy to limit exposure to stormwater. In addition, this equipment is stored in a large-poured concrete/asphalt spill containment berm. In addition, the area also has easy access to spill containment kits. Employees working in this area are trained to look for illicit discharges and on proper spill response. Portable secondary containment structures are also stored in this area for deployment under mobile equipment. This area is inspected monthly.

Salt Storage

NASA Langley uses salt and brine solutions on roadways and sidewalks during wintery conditions. Winter salt products are stored inside/under roofs or in tanks and have minimal to no exposure to stormwater. The use of deicing agents containing urea or other forms of nitrogen or phosphorus are prohibited on Center per LPR 8500.1. In addition, NASA Langley is currently working to develop a new deicing plan.



Underground Storage Tanks (USTs) and Above-Ground Storage Tanks (ASTs)

NASA Langley has six active USTs on Center. All USTs at NASA Langley are equipped with electronic leak-detection systems. In addition, product inventory records are maintained by operating personnel at each facility where USTs are located. Operators inspect ASTs monthly & when filling tanks. For tanks with secondary containment, facilities document rainwater inspections prior to draining water. In addition, documented AST inspections are performed in accordance with Virginia AST and EPA Spill Prevention, Control, and Countermeasure regulations. Records of AST inspections are kept in the EMO files.

Application, Storage, Transport and Disposal of Pesticides, Herbicides, and Fertilizers

The Center's policy regarding the use of pesticides, herbicides, and fertilizers is to follow Integrated Pest Management (IPM) practices whenever possible and to utilize the absolute minimum number of pesticides, herbicides, and fertilizers on Center as necessary. All products shall be EPA-certified. NASA Langley has no applicable lands where nutrients are applied to a contiguous area of more than 1 acre.

Certification

NASA Langley's grounds maintenance contract requires the contractor have properly trained personnel to work on Center and the personnel are to be certified in accordance with the Virginia Pesticide Control Act.

Fertilizers

Much of the Center's land and foliage is allowed to grow naturally, without any fertilizer. Grass clippings are returned to the lawn to restore important nutrients and avoid the need for fertilizers. In general, NASA Langley does not routinely apply fertilizers and they are only used when planting new trees, shrubs, and grass areas (post disturbance, etc.) to help establish the new vegetation. Once established, vegetation is not fertilized unless the health of the vegetation (spot treatments) requires it.

Pesticides

Of the Center's 764 acres of land, less than one-twentieth of one percent is treated with pesticides. These treatments are on an as-needed basis and applications are limited to minimal quantities. The grounds maintenance contractor manages the pesticide program at NASA Langley. Pesticides include insecticides,



herbicides, rodenticides, and termiticides. The contractor uses only EPA approved/registered pesticides upon approval and issuance of a NASA safety permit for the use of potentially hazardous materials. The pesticides are mixed and stored inside. They are applied according to their current Federal use restrictions. As required by law, records of restricted use pesticides are maintained by the contractor. IPM practices are used by the contractor wherever possible, and application is performed or supervised by state-certified applicators and/or registered technicians. Chemical spraying is performed only on windless days and is delayed when unfavorable weather or other conditions exist which would unduly increase the hazard to personnel or the environment.

General pest control at NASA Langley is performed by way of service request and involves the mitigation of cockroaches, water bugs, ants, rodents, fleas, mites, spiders, and wasps, among others. Wood destroying pest control, animal and bird control, and ornamental and turf pest control are other operations performed by the contractor on an as-needed basis. The contractor also performs scheduled and preventative maintenance pesticide applications in food processing areas, such as the cafeteria area of Building 2102, which is treated on a twice-monthly preventative maintenance schedule.

Herbicides

Herbicide application provides non-crop control of emerged annual and perennial weeds with glyphosate used exclusively. Herbicides are not applied to large grassy areas; these areas are allowed to grow naturally and only receive routine mowing. Herbicides are typically only used to treat area fence lines, right of ways, outdoor electrical substations, and large gravel fenced enclosures. Application rates are based on product label recommendations.

Storage of Pesticides, Herbicides, and Fertilizers

All products are stored in Building 1285 - Landscape Maintenance and Storage Facility and have no exposure to stormwater. The facility does not possess any floor drains, and the building has the necessary equipment to clean up any spills. All products are stored in elevated locked cabinets at Building 1285 to minimize flooding-related issues and are tracked in NASA Langley's Chemical Management Tracking System (CMTS). CMTS is updated by the FEC when products are purchased, used, transferred, or disposed of. The system also houses a Safety Data Sheet for each product, so that NASA Langley has accurate data on all products currently stored on Center.

Disposal

The grounds maintenance contract is written with specific language requiring the proper disposal of these products. All products are disposed of in accordance with product labels and state regulations.

High Priority Facilities Analysis- Part I E 6 g

NASA Langley has assessed all facilities on Center for their potential to discharge pollutants. In general, NASA Langley has a low risk for facilities discharging pollutants due to various procedures in place and NASA Langley's practice of material storage with no exposure to stormwater. Additionally, many facilities addressed in the MS4 permit are already covered under NASA Langley's VPDES Permit #VA0024741. Facilities covered under a separate VPDES permit shall adhere to the conditions established in that permit and are excluded from this requirement. NASA Langley only identified the grounds maintenance yard and composting facility area as a high priority facility.

Grounds Maintenance Yard/Composting Facility – The Center operates an informal composting area and landscape material storage area in the fields near Building 1285 and Building 1286. This area is primarily used for composting leaves and other landscaping debris (gumballs, small branches, mulch, etc.). The area selected is surrounded by grass and has very few storm inlets or ditches nearby. The potential for any stormwater runoff is limited. This operation poses the greatest risk (not covered by another DEQ permit) for organics and sediment discharge in stormwater runoff. Barrier walls were installed in 2017 to create a



NASA Langley Research Center – MS4 Program Plan

designated, contained area for landscaping debris stockpiles. This BMP has further reduced the potential for organics or sediment from discharging from the site to the storm sewer system.

NASA Langley has developed and implemented a specific stormwater pollution prevention plan (SWPPP) for this high-priority facility. Inspections are conducted and documented two times a year (March and September). The SWPPP is kept on file with EMO and utilized as part of staff training.

A copy of the SWPPP can be obtained by contacting EMO.

No later than June 30 of each year, NASA Langley will review other areas on Center for which a SWPPP has not been developed to determine if the facility has a high potential to discharge pollutants as described in Part I E 6 g. If the facility is determined to be a high-priority facility with a high potential to discharge pollutants, NASA Langley will develop a SWPPP meeting the requirements of Part I E 6 h no later than December 31 that same year.

Nutrients and Turf Management – Part I E 6 r

NASA Langley will continue to strictly limit the use of nutrients and fertilizer application on pervious turf areas. NASA Langley's policy regarding the use of pesticides, herbicides and fertilizers is to follow Integrated Pest Management (IPM) practices whenever possible and to use the absolute minimum number of pesticides, herbicides, and fertilizers on Center as necessary. If nutrients are being applied to achieve final stabilization of a land disturbance project, application shall follow the manufacturer's recommendations. NASA Langley has no applicable lands where nutrients are applied to a contiguous area of more than 1 acre. The total acreage of lands where turf and landscape nutrient management plans apply is zero. The acreage of lands upon which turf and landscape nutrient management plans have been implemented is zero.

Mechanisms for Contractor Compliance - Part I E 6 c

NASA Langley requires all contractors engaging in activities with the potential to discharge pollutants to use appropriate control measures to minimize the discharge of pollutants to the MS4. NASA Langley accomplishes this through language in procedural documents, including the Environmental and Energy Program Manual (LPR 8500.1), Construction Specifications, and the NASA Langley Standards and Specifications for ESC and SWM. The Center also utilizes a robust training plan that includes targeted training for contractors completing maintenance and construction tasks. Finally, NASA Langley relies on the LF 461 to evaluate proposed projects for potential environmental impacts. All facility and infrastructure projects, as well as research and development activities conducted on NASA Langley property or funded with government dollars, are required to undergo this environmental review process. Through this electronic form, EMO can review a project and provide feedback or requirements to reduce negative environmental impacts, including illicit discharges to the MS4.

Annual Training Plan – Part I E 6 d

NASA Langley has developed an annual training plan including a schedule of training events that ensures implementation of the training requirements as follows:



NASA Langley Research Center – MS4 Program Plan

Training Requirements	Selected Audience	Training Program(s) and Frequency
(1) Field personnel receive training in the recognition and reporting of illicit discharges no less than once per 24 months	Facility Environmental Coordinators (FECs)	Annual FEC Training – At least two instructor-led classes annually; virtual training available anytime
	Construction Inspectors in the Facility Management Office and any interested NASA Langley personnel.	Illicit Discharge Specific Stormwater Management Training – 1 class
	Personnel who handle waste on Center.	NASA Langley Annual Waste Management/ Spill Response Training – At least three instructor-led classes annually; virtual training available anytime
(2) Employees performing road, street, and parking lot maintenance receive training in pollution prevention and good housekeeping associated with those activities no less than once per 24 months	Grounds Maintenance Contractor	Grounds Specific Stormwater Management Training – 1 class
	Amentum (primary Center contractor) personnel	Maintenance and Construction Specific Stormwater Management Training – 1 class
(3) Employees working in and around maintenance, public works, or recreational facilities receive training in good housekeeping and pollution prevention practices associated with those facilities no less than once per 24 months	Facility Environmental Coordinators	Annual FEC Training – At least two instructor-led classes annually; virtual training available anytime
	Amentum (primary Center contractor) personnel	Maintenance Specific Stormwater Management Training – 1 class
	Grounds Maintenance Contractor	Grounds Specific Stormwater Management Training – 1 class
(4) Employees working in and around high-priority facilities with a SWPPP shall receive training in applicable site specific SWPPP procedures no less often than once per 24 months	Grounds Maintenance Contractor	Grounds Specific Stormwater Management Training – 1 class
(5) Employees whose duties include emergency response have been trained in spill response	All applicable Center personnel	NASA Langley Annual Waste Management/ Spill Response Training – At least three instructor-led classes annually; virtual training available anytime



Training Requirements	Selected Audience	Training Program(s) and Frequency
	Emergency responders such as firefighters and law-enforcement officers	Emergency responders receive training on the handling of spill releases as part of a larger emergency response training.
(6) Employees and contractors hired by the permittee who apply pesticides and herbicides are trained or certified in accordance with the Virginia Pesticide Control Act	Grounds Maintenance Contractor	NASA Langley's Grounds Contract requires that the contractor have properly trained and certified personnel to work on Center.

NASA Langley will maintain documentation of each training event conducted, to include the date of the event, the number of employees in attendance, and the objective of the training, for a minimum of three years after the training event.

Annual Reporting - Measurable Goals – Part I E 6 y

NASA Langley will include the following information in each annual report:

- (1) A summary of any written procedures developed or modified on accordance with Part I E 6 a and b during the reporting period;
- (2) A confirmation statement that all high-priority facilities were reviewed to determine if SWPPP coverage is needed during the reporting period;
- (3) A list of any new SWPPPs developed in accordance Part I E 6 i during the reporting period;
- (4) SWPPPs modified in accordance with Part I E 6 j, 6 l, or 6 m;
- (5) The rationale of any high-priority facilities delisted in accordance with Part I E 6 l or m during the reporting period;
- (6) The status of each nutrient management plan as of June 30th of the reporting year (e.g., approved, submitted and pending approval, and expired);
- (7) A list of the training activities conducted in accordance with Part I E 6 d, including the following information:
 - a. The completion date for the training activity;
 - b. The number of employees who completed the training activity; and
 - c. The objectives and good housekeeping procedures covered by the training activity.



Chesapeake Bay TMDL Special Conditions – Part II A

The Special Condition for the Chesapeake Bay TMDL within the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (VAR04) requires NASA Langley to develop a Chesapeake Bay TMDL Action Plan (“Action Plan”) and submit it to the DEQ. NASA Langley has developed an Action Plan for Phase III to satisfy the Special Condition requirement.

This Phase III Action Plan provides a review of the current MS4 program, demonstrates NASA Langley’s ability to ensure compliance with the Special Condition, and includes the means and methods NASA Langley will use to meet the remaining 60.0% of the Level 2 (L2) scoping run reduction for existing development during the second permit cycle. In combination with the 40.0% reduction of L2 that has already achieved, this will result in a total reduction of 100% of L2 no later than October 31, 2028. Level 2 implementation equates to an average reduction of 9.0% of nitrogen loads, 16% of phosphorus loads, and 20% of sediment loads from impervious regulated acres, and 6.0% of nitrogen loads, 7.25% of phosphorus loads, and 8.75% of sediment loads from pervious regulated acres beyond 2009 progress loads and beyond urban nutrient management reductions for pervious regulated acreage.

NASA Langley’s Phase III Action Plan was submitted to DEQ with the registration statement as required and was approved by the DEQ on April 23, 2025. Please see the [external public website](#) for a copy of the Phase III Action Plan which addresses the requirements for Part II A.

For each reporting period, NASA Langley will include in the annual report items identified in Part II A 14.

Local TMDL Special Condition – Part II B

The Special Condition for the Back River TMDL within the General Permit for Discharges of Stormwater from Municipal Separate Storm Sewer Systems (VAR04) requires NASA Langley to develop a Back River TMDL Action Plan and submit it to the DEQ. NASA Langley has developed an Action Plan to satisfy the Special Condition requirement.

The Action Plan reviews the current MS4 program, demonstrates NASA Langley’s ability to ensure compliance with the Special Condition, and includes the means and methods NASA Langley will use to meet the required reductions. NASA Langley’s daily waste load allocation (WLA) is $2.80\text{E}+10$, requiring a reduction of 35.5%. NASA Langley’s WLA allowable annual load is $4.58\text{E}+12$, requiring a reduction of 35.4%. The estimated annual load for fecal coliform is $2.98\text{E}+12$ and will require a reduction of 34.93%.

NASA Langley submitted their Phase Two Action Plan for the 2023-2028 permit cycle to DEQ on April 30, 2025. In this update, NASA Langley evaluated the effectiveness of their previous permit cycle’s action plan (2018-2023) and determined it to be successful. Additionally, NASA Langley identified urban wildlife as the primary source of bacterial discharges and outlined plans to implement measures to meet the required reductions. Finally, outreach strategies have been developed for each reporting period, and NASA Langley will include a summary of the actions taken to implement the TMDL Action Plan in their annual reports.

Please see [external public website](#) for a copy of the Action Plan which addresses the requirements for Part II B.



Signed Certification Statement in accordance with 9VAC25-890-40

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Ande Remington, Water Program Manager,
Environmental Management Office

Date

Note: The Center Director has authorized the position of Environmental Management Office Head, Acting Environmental Management Office Head, and Water Program Manager to have signatory authority for all MS4 related submittals (excluding the registration statement). This was done in a letter dated September 10, 2023.



Documents Incorporated by Reference

[Appendix A: NASA Langley IDDE Handbook](#)

[Appendix B: NASA Langley Green Infrastructure Maintenance Guide](#)

[Appendix C: NASA Langley Environmental Construction Specifications 01 35 40.00 99](#)

[Appendix D: NASA Langley VESMA Standards and Specifications for ESC & SWM](#)



Appendix A: NASA Langley IDDE Handbook



Appendix B: NASA Langley Green Infrastructure Maintenance Guide



Appendix C: NASA Langley Environmental Specifications
Section 01 35 40.00 99



Appendix D: NASA Langley Standards and Specifications for ESC and SWM; and DEQ Approval Letter