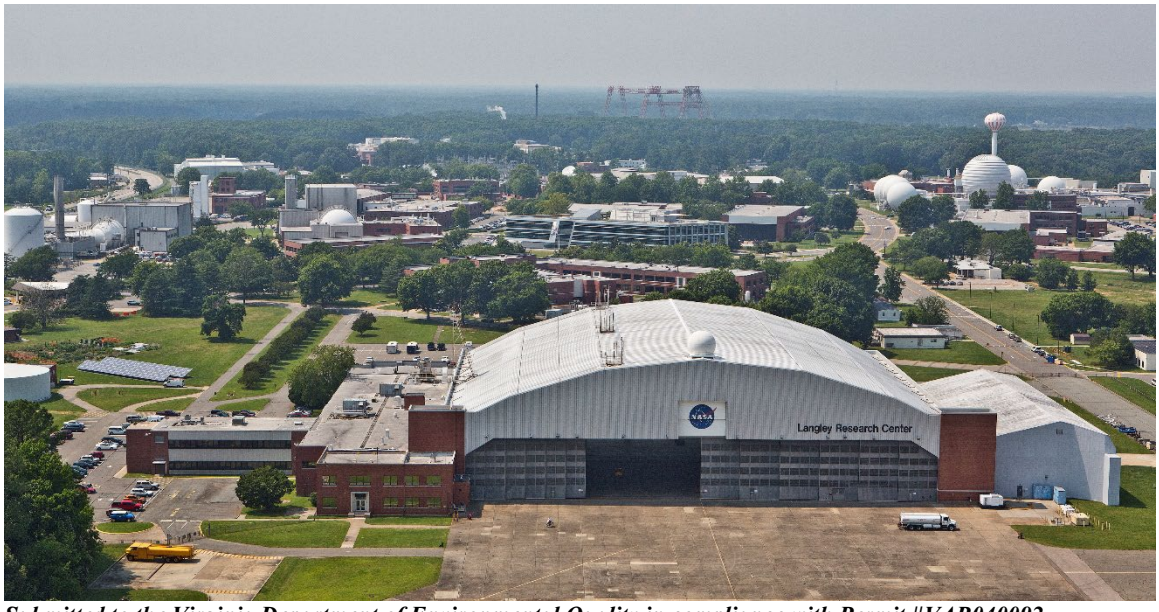
NASA Langley Research Center

Municipal Separate Storm Sewer System (MS4) Program Plan

Permit Year: July 1, 2024, to June 30, 2025

Permit #VAR040092



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

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Introduction

This document is NASA Langley Research Center's (LaRC) 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, 2024 – June 30, 2025.

NASA LaRC has reviewed and assessed existing stormwater management operations and policies at the Center against the General Permit requirements including the six minimum control measures and the Total Maximum Daily Load (TMDL) special conditions requirements. Based on that review, NASA LaRC has developed an appropriate and cost-effective Program Plan with the goal of minimizing stormwater pollution to the maximum extent practicable (MEP). This Program Plan outlines how LaRC will implement and enforce this Plan. The Environmental Management Office (EMO) is the organization primarily responsible for implementing this Plan.

MS4 Program Plan

This section of NASA LaRC's MS4 Program Plan describes how LaRC will implement and demonstrate compliance with each of the six stormwater minimum control measures (MCM) listed in Part I E of the MS4 General Permit (VAR040092). For each MCM, the Program Plan discusses LaRC's program, the goals of the program (now and into the future), addresses the requirements of the permit, and indicates program elements for compliance.

MCM 1: Public Education and Outreach

LaRC is a non-traditional permit holder (Federal facility) with no resident population. In terms of public education, and in keeping with EPA guidance, LaRC defines "public" as the employee and contractor population located within the fence line of the Center.

LaRC's MS4 Public Education 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 and repercussions 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

LaRC 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
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, or newspaper
Speaking engagements	Presentations to NASA community, school, church, industry, trade, special interest, community groups, or GIS story maps
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

LaRC's MS4 Public Education and Outreach Plan, as required by the General Permit, emphasizes at least three high-priority stormwater issues. These priorities were selected because they are currently the most pressing stormwater-related impacts that LaRC encounters. The following describes the high priorities selected, the rationale behind the selection, the target audience, strategies utilized from Table 1, and the anticipated time periods that messages will be communicated:

Priority 1 – Illicit Discharge Detection and Elimination (IDDE): Construction and Maintenance Best Management Practices (BMPs)

Rationale*:* Enhanced focus on education and outreach about construction and maintenance requirements will ensure proper implementation of BMPs to prevent illicit discharges and control erosion at project sites. Education efforts will cover the appropriate BMPs for specific processes at LaRC including concrete washout, dewatering, inlet protection, and street sweeping. Outreach materials will also inform center personnel about LaRC's environmental permitting and procurement process to help increase awareness of newly passed regulations and necessary changes to processes aimed to prevent illicit discharges from entering the stormwater system.

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

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

Anticipated time periods messages will be communicated or made available to the public: Throughout the permit year, including but not limited to annual stormwater training, quarterly MS4 articles, and targeted training.

Responsible Party: LaRC EMO personnel

Measurable Goal: Tracking the number of "views" for any article or outreach item posted to the program website and daily Inside Langley web announcements; track training attendance and feedback.

Priority 2 – IDDE: Floor Drains

Rationale: Increased outreach on the location and proper maintenance of floor drains will educate center personnel on the appropriate measures to prevent illicit discharges from entering the stormwater system. Awareness of how to identify wastewater, proper containment of oily waste, waste management, and litter cleanup especially around floor drains is a priority. Continued education on LaRC's IDDE Program and advertisement of reporting resources available to all LaRC personnel will continue to improve knowledge of the negative impacts resulting from illicit discharges into the storm system and enhance personnel participation in reporting pollution concerns.

Target Audience: All NASA LaRC personnel; Facility Coordinators (FCs) and Facility Environmental Coordinators (FECs)

Strategies from Table 1 of Part I E 1 d: Media materials; speaking engagements; training materials.

Anticipated time periods messages will be communicated or made available to the public: Throughout the permit year, including but not limited to annual stormwater and FEC trainings, quarterly MS4 articles, and meetings with FECs and FCs during annual multi-media audits.

Responsible Party: LaRC EMO personnel

Measurable Goal: Tracking the number of "views" for any article or outreach item posted to the program website and daily Inside Langley web announcements; tracking training attendance and feedback.

Priority 3 – Chesapeake Bay and Back River TMDL Education

Rationale: LaRC is under a TMDL for the Chesapeake Bay and a bacterial TMDL for the Back River watershed. LaRC continues to educate Center 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 LaRC 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. LaRC 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 LaRC employees for tips and habits they can carry out on Center and at their homes.

Target Audience: All NASA LaRC personnel, with emphasis on COD personnel (Facility Management Office (FMO) and the Master Planning Office)

Strategies from Table 1 of Part I E 1: Media materials; speaking engagements; training materials.

Anticipated time periods messages will be communicated or made available to the public: Throughout the permit year, including but not limited to annual stormwater and FEC trainings, quarterly MS4 articles, and targeted COD training.

Responsible Party: LaRC EMO personnel

Measurable Goal: Tracking the number of "views" for any article or outreach item posted to the program website and daily Inside Langley web announcements; tracking training attendance and feedback.

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

Any individual interested in finding out more information about the high-priority public education and outreach program, or any other aspects of LaRC's stormwater program, should contact the following:

Sarat Calamur, LaRC Water Program Manager
(757) 864-4791
Sarat.c.calamur@nasa.gov

Ande Remington, LaRC Environmental Compliance Lead
(757) 864-8332
Ande.remington@nasa.gov

LaRC will provide this information with each outreach activity and maintain up-to-date contact information on the public website, https://environmental.larc.nasa.gov/water/ms4/.

Annual Reporting Requirements – Part I E 1 g

LaRC 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 LaRC understands the importance of engaging with the public, participating in local events, and promoting participation with the surrounding communities. NASA management strongly encourages public involvement, and these efforts are strongly supported.

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

LaRC will notify the "public" (employees and contractors) and provide for receipt of comments on LaRC's MS4 Program Plan through the internal Inside Langley system and external public website. This notification will be made twice during the permit year, typically October and March, 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 LaRC 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.

Notice to LaRC employees that the Program Plan and Annual Report have been updated and published to the webpage will be made through the internal Inside Langley system. This system notifies all employees. Records of these actions will be kept on file with EMO and in the Inside Langley archives.

Public Involvement Opportunities – Part I E 2 d

LaRC 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 to provide an opportunity for public involvement to 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 – Joint Base Langley-Eustis (JBLE) Earth Week Clean-up Events

Category from Table 2: Restoration

Description: JBLE Earth Week is an annual event hosted every April at the Langley Air Force Base (LAFB). Volunteers help remove debris and litter from around the Back River, a waterway also shared by LaRC, and can participate in various other educational activities around LAFB. NASA LaRC participates in this event through promotion and encouraging participation of LaRC personnel. LaRC advertises the event, includes links to the LAFB cleanup opportunities via the Inside Langley announcement page, and provides volunteers to assist in cleanup efforts.

Anticipated time when activity will occur: April 2025

Metric to determine if activity is beneficial to water quality: Number of participants; attendance collected from LAFB events; and documenting any feedback received from LaRC participants.

Public Involvement Opportunity 2 – LaRC's Annual Earth Day and Arbor Day Events

Category from Table 2: Educational event

Description: During April, LaRC will hold annual events in observance of Earth Day and Arbor Day, which may include an expo, on-site and local off-site tours, and presentations. The events feature valuable information on environmental programs, including but not limited to energy and water conservation, sustainable design including green infrastructure at LaRC, recycling, hazardous materials and waste management, local natural resources, and stormwater pollution prevention. Through these in-person and/or online events, personnel will have the opportunity to network and interact with exhibitors, participate in tours to local sustainable places, and attend presentations where they can continue to learn about restoration initiatives and pollution prevention practices. The events will be promoted through the Inside Langley system, public blog, and Center-wide emails.

Anticipated period when activity will occur: April 2025

Metric to determine if activity is beneficial to water quality: Number of visitors ("views") received for Center-wide advertisements on Inside Langley; number of participants in activities (e.g., tours and speakers/trainings); and number of visitors received on External Webpage.

Public Involvement Opportunity 3 – Household Chemical Collection

Category from Table 2: Disposal or collection events

Description: LaRC 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 announcement page.

Anticipated period when activity will occur: Frequently 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).

Public Involvement Opportunity 4 – Clean the Bay Day

Category from Table 2: Restoration

Description: Clean the Bay Day (CTBD) is an annual stream and shoreline cleanup program where citizen volunteers participate to remove debris and litter from local creeks, streams, rivers, and the Chesapeake Bay. NASA LaRC participates in this event through promotion and encouraging participation of LaRC personnel and their friends, families, and neighbors. LaRC advertises the event and provides links to local cleanup opportunities via the Inside Langley announcement page. LaRC also provides volunteers annually to participate in CTBD events hosted by the LAFB.

Anticipated period when activity will occur: Late May/early June 2025

Metric to determine if activity is beneficial to water quality: Number of participants; attendance collected from LAFB events; and documenting any feedback received from LaRC participants.

Public Involvement Opportunity 5 – Plastic Bag and Film Recycling

Category from Table 2: Disposal or collection event

Description: LaRC 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 placed in high- traffic areas.

Anticipated period when activity will occur: October 2024 and April 2025

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

Annual Reporting Requirements – Part I E 2 i

LaRC 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)

LaRC has worked hard over the years to develop an effective IDDE program. This version of the Program Plan continues to support and build upon previous efforts taken to establish and grow this program over the last decade.

MS4 Map and Information Table – Part I E 3 a

LaRC will continue to maintain a robust GIS MS4 map that includes a storm sewer map and information table.

LaRC's current storm sewer map shows all conveyances, channels, ditches, direction of flow, location of MS4 outfalls with unique identifiers, required outfall information, topography, delineated drainage basins for each outfall, and the named receiving water bodies. The information table associated with the storm sewer system map contains information for each outfall, including a unique identifier as specified on the map, the latitude and longitude of the outfall or point of discharge, the estimated regulated acreage draining area, 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 LaRC 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), LaRC 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, also known as the "Environmental and Energy Program Manual." Section 5 provides information on applicable regulatory requirements and procedures related to water quality standards and permitted water discharges at LaRC, and Section 5.3 identifies roles and responsibilities for various personnel. These policies are made available to Center personnel through the Langley Management System (LMS), the Environmental web site, and are also included in various Environmental Training sessions.

IDDE Written Procedures – Part I E 3 c

NASA LaRC has written procedures to detect, identify, and address unauthorized non-stormwater discharges, including illegal dumping, to the MS4 with the goal of eliminating the unauthorized discharge. These procedures are written and maintained in LaRC's IDDE Handbook. This handbook serves as an IDDE program summary and adequately addresses all the requirements of General Permit Part I E 3 c. The Handbook discusses outfall screening, methodologies, inspection protocols, time frames, and source elimination.

Please see Appendix A for a copy of NASA LaRC's IDDE Handbook.

Physical Interconnections – Part I E 3 d (2)

LAFB is the only downstream MS4 that is physically interconnected with LaRC. LAFB is part of Joint Base Langley-Fort 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 LaRC.

NASA LaRC and LAFB communicate frequently regarding upcoming projects, National Environmental Policy Act (NEPA) reviews, interconnections, and possible project 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 10/24/2023 for the new MS4 permit cycle of 2023-2028. 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

LaRC 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 LaRC has developed Virginia Erosion and Sediment Control Act (VESMA) Annual Standards and Specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) that are integral components of LaRC's design, construction, maintenance, and management of the Center's facilities and operations. The primary regulatory driver for NASA LaRC VESMA Annual Standards and Specifications 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 LaRC's MS4 permit (VAR040092). The NASA LaRC VESMA Annual Standards and Specifications for ESC and SWM submittal have been developed to provide detailed information regarding LaRC's compliance with all regulatory requirements.

Any NASA LaRC 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)

NASA LaRC's VESMA Annual Standards and Specifications for ESC and SWM completely detail LaRC's stormwater construction program. The VESMA Annual Standards and Specifications have been reviewed and approved 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)

LaRC 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 NASA LaRC's VESMA Annual Standards and Specifications for ESC and SWM. Construction contracts include specific language requiring that the contractor remains compliant.

The NASA LaRC Environmental Specifications Section 01 35 40.00 99 is included in all construction contracts. This serves as LaRC's "regulatory mechanism" to ensure compliance.

Please see section "3.3 Water Quality" of the NASA LaRC 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)

Section 6.0 of NASA LaRC's VESMA Annual Standards and Specifications for ESC and SWM addresses stormwater construction inspection procedures. This document also has the necessary documents, checklists, and templates used during inspections such as inspection report forms and corrective action notices.

This document and all necessary written inspection procedures can be found in Appendix D.

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

Section 7.0 of NASA LaRC's VESMA Annual Standards and Specifications for ESC and SWM addresses LaRC'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 c (9)

Section 2.0 of NASA LaRC's VESMA Annual Standards and Specifications for ESC and SWM completely details NASA roles and responsibilities as related to the construction stormwater management program. NASA LaRC does not rely on any other entity to implement portions of the MS4 Program Plan.

This document can be found in Appendix D.

Dual Combined Administrator(s) on Staff:
Sarat Calamur, Certification #DCA0487 (Expires 9/22/2026)
(757) 864-4791
Sarat.c.calamur@nasa.gov

Ande Remington, Certification #DCA0291 (Expires 10/29/2025)
(757) 764-8332
Ande.remington@nasa.gov

ESC and SWM Inspector(s) on Staff:
James Griczin, Certification #DIN1872 (Expires 7/31/2026)
(757) 864-5030
James.griczin@nasa.gov

Kattie Iwanski, Certification #DIN1965 (Expires 2/6/2027)
(757) 864-6091
Kattie.iwanski@nasa.gov

Annual Reporting – Part I E 4 e

LaRC 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 annual standards and specifications for erosion and sediment control; and
   b. If any land disturbing projects were conducted without department approved annual 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 predevelopment hydrology of the property regarding temperature, rate, volume, and duration of flow. NASA LaRC understands that these functional BMPs require long-term inspection and maintenance. LaRC 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 Engineering Branch (PEB), Maintenance and Operations Branch (MOB), and the Grounds Maintenance contract.

Legal Authorities – Part I E 5 d (3)

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

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

Please see Appendix D for a copy of the NASA LaRC VESMA Annual 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 b, NASA LaRC has developed written inspection and maintenance procedures to ensure adequate long-term operation and maintenance of its stormwater management facilities.

NASA LaRC's VESMA Annual 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. Sections 3.1 – 3.9 of NASA LaRC's VESMA Annual Standards and Specifications for ESC and SWM address SWM facility design criteria. Section 10.0 of the document addresses 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 LaRC's VESMA Annual Standards and Specifications for ESC and SWM.

In addition to the NASA LaRC's VESMA Annual Standards and Specifications for ESC and SWM which help ensure compliance with planning and design, the contractual NASA LaRC 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 LaRC Environmental Specifications Section 01 35 40.00 99.

Moreover, NASA LaRC's Green Infrastructure Maintenance Handbook has been developed to ensure adequate long-term operation and maintenance of NASA LaRC's stormwater management facilities. 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 NASA LaRC's Green Infrastructure Maintenance Handbook.

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

NASA LaRC's VESMA Annual Standards and Specifications for ESC and SWM completely detail LaRC's stormwater post-construction program including roles and responsibilities. This document can be found in Appendix D.

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, Center Operations Directorate (COD) within NASA and EMO all have roles and responsibilities to ensure that SWM facilities are properly designed. As discussed in LaRC's VESMA Annual Standards and Specifications for ESC and SWM, each of the entities is responsible for participating during LaRC's design process.
- SWM Facility Inspection – EMO and LaRC'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 LaRC's grounds maintenance contractor all have various responsibilities related to SWM maintenance.

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

Stormwater Management Facility Spreadsheet – Part III

LaRC 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, LaRC 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, LaRC has been building a quality stormwater pollution prevention (P2) program. LaRC uses a variety of operational and maintenance BMPs to ensure that Center operations are accomplished in a way that minimizes or prevents pollutant discharges. LaRC's center maintenance contractor uses MAXIMO to track work orders, plan jobs, and costs of jobs. LaRC has installed several oil alarm systems in vulnerable locations to protect the stormwater network. These alarms are tracked within MAXIMO to ensure that they are operational and performing their function of pollution prevention.

In addition to the MS4 permit and MAXIMO, LaRC 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, LaRC implements the following written good housekeeping procedures for activities at facilities owned or operated by LaRC, 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

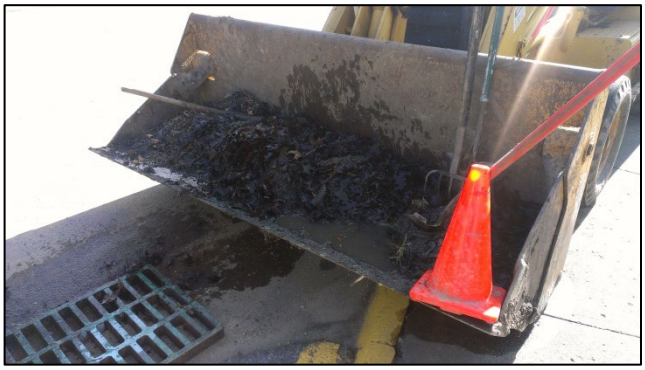
Inspections are performed and documented at least quarterly at MS4 outfalls by EMO. Any signs of pollution or poor water quality are investigated immediately and traced upstream. If any abnormal conditions are identified that require structural maintenance, a Work Order is sent to the LaRC maintenance 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 LaRC'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 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 LaRC VESMA Annual Standards and Specifications 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

LaRC has more than 700 catch basins on Center. Many of these are in streets and parking areas. These basins catch routine 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 cubic yards of debris collected, can be viewed by contacting EMO.

Ditch Maintenance

NASA LaRC has an extensive system of grass-lined ditches (~62,000 linear feet) and paved ditches (~2,800 linear feet). The grounds maintenance contractor has the responsibility for ditch maintenance. The contract has written procedures for ditch maintenance and requires that vegetative growth in drainage ditches be cut to a height of 2 inches on the bottom and sides. All wood and brush, cuttings, trash, and debris are removed and disposed of the same day of cleaning. 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 the same day of cleaning. All paved ditches surfaces are cleaned once per year per the contract. All non-paved ditches are cleaned and maintained four times per year. Ditch maintenance data, including cubic yards of debris collected, can be viewed by contacting 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 Big Bethel 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 issues. 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 which have required spill kits nearby in case of any spillage of paint. 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.

Building Power Washing
EMO reviews all power washing job plans. Power washing flow is redirected 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 use 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
LaRC dewaters utility pits, especially from the steam tunnels and electric manholes. Groundwater accumulates in utility pits, as they sit below the groundwater table. LaRC'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 proper disposal of the water such as discharge to HRSD (with written approval), pump and haul off Center, or discharge to the ground (if no pollutants are present).
- 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
The Building 1187 area 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. 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 LaRC 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.

Underground Storage Tanks (USTs) and Above-Ground Storage Tanks (ASTs)
NASA LaRC has six (6) active USTs on Center. All USTs at LaRC 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 SPCC regulations. Records of AST inspections are kept in the EMO files.

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

LaRC'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. All products shall be EPA-certified. LaRC has no applicable lands where nutrients are applied to a contiguous area of more than 1 acre.

Certification
NASA LaRC's Grounds contract requires the contractor have properly trained personnel to work on Center and the personnel 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, LaRC 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 LaRC. 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 LaRC 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. There are also no 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. All products are tracked in LaRC's Chemical Management Tracking System (CMTS) which is updated by the Facility Environmental Coordinator when products are purchased, used, transferred, or disposed of. The system also houses a Safety Data Sheet for each product so that LaRC 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 LaRC has assessed all facilities on Center for their potential to discharge pollutants. In general, LaRC has a low risk for facilities discharging pollutants due to various procedures in place and LaRC's practice of material storage with no exposure to stormwater. Additionally, many facilities addressed in the MS4 permit are already covered under LaRC'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. LaRC 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 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.

LaRC 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, LaRC 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, LaRC 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

LaRC will continue to strictly limit the use of nutrients and fertilizer application on pervious turf areas. LaRC'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. LaRC 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

LaRC 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. LaRC accomplishes this through language in procedural documents, including the Environmental and Energy Program Manual (LPR 8500.1), Construction Specifications, and LaRC's DEQ-approved VESMA Annual Standards and Specifications. The Center also utilizes a robust training plan that includes targeted training for contractors completing maintenance and construction tasks. Finally, LaRC relies on the Langley Form 461 (LF461), the "Environmental Project Planning Form." All proposed facility and infrastructure projects and all research and development projects conducted on LaRC's property or funded with government dollars must be reviewed for potential environmental impacts. 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 LaRC has developed an annual training plan including a schedule of training events that ensures implementation of the training requirements as follows:

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

Training Requirements	Selected Audience	Training Program(s) and Frequency
	Environmental Management Office (EMO) employees, Jacobs (primary Center contractor) Personnel, and any interested LaRC personnel	Illicit Discharge Specific Stormwater Management Training – 1 class
	Personnel who handle waste on Center.	LaRC 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
	Jacobs (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
	Jacobs (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	LaRC Annual Waste Management/ Spill Response Training – At least three instructor-led classes annually; virtual training available anytime
	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.

Training Requirements	Selected Audience	Training Program(s) and Frequency
(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	LaRC's Grounds Contract requires that the contractor have properly trained and certified personnel to work on Center.

LaRC 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

LaRC 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 LaRC to develop a Chesapeake Bay TMDL Action Plan ("Action Plan") and submit it to the DEQ. LaRC 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 LaRC's ability to ensure compliance with the Special Condition, and includes the means and methods LaRC will use to meet an additional 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.

LaRC's Phase III Action Plan was submitted to DEQ with the registration statement as required. Please see Appendix E for a copy of the Phase III Action Plan which addresses the requirements for Part II A.

For each reporting period, LaRC 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 LaRC to develop a Back River TMDL Action Plan ("Action Plan") and submit it to the DEQ. LaRC has developed an Action Plan to satisfy the Special Condition requirement.

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

LaRC's Action Plan was submitted to DEQ and is maintained and implemented by the NASA EMO. Please see Appendix F for a copy of the Action Plan which addresses the requirements for Part II B.

For each reporting period, LaRC will include in the annual report a summary of actions conducted to implement the TMDL Action Plan.

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."

Sarat Calamur Digitally signed by Sarat Calamur
Date: 2024.06.28 10:34:11 -04'00'

Sarat Calamur, 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 LaRC IDDE Handbook

Appendix B: NASA LaRC Green Infrastructure Maintenance Handbook

Appendix C: NASA LaRC Environmental Construction Specifications 01 35 40.00 99

Appendix D: NASA LaRC VESMA Annual Standards and Specifications for ESC & SWM

Appendix E: NASA LaRC DEQ Chesapeake Bay TMDL Action Plan

Appendix F: NASA LaRC DEQ Back River TMDL Action Plan

Appendix A: NASA LaRC's IDDE Handbook

Appendix B: NASA LaRC's Green Infrastructure Maintenance Handbook

Appendix C: LaRC Environmental Specifications Section 01 35 40.00 99

Appendix D: NASA LaRC's VESMA Annual Standards and Specifications for ESC and SWM; and DEQ Approval Letter

Appendix E: DEQ Chesapeake Bay TMDL Action Plan Phase 3

Appendix F: DEQ Back River TMDL Action Plan