ANNUAL REPORT UPDATE

Reporting Period
1 July 2024 to 30 June 2025

Arlington National Cemetery

1 Memorial Drive
Arlington, VA 22211

VPDES Permit Number: VAR40139
Permit Effective Date: November 1, 2023
Permit Expiration Date: October 31, 2028

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MS4 ANNUAL REPORT

Arlington National Cemetery
Arlington, Virginia

Prepared for:

NAVFAC Washington
1314 Harwood Street SE
Bldg. 212, 2nd floor
Washington, DC 20374

Arlington National Cemetery
1 Memorial Avenue
Arlington, VA 22211

Prepared by:

Bluestone-InterSpec JV
301 Lindenwood Drive, Suite 102
Malvern, PA 19355

Submitted: September 2025

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General Information

Permittee: Arlington National Cemetery
System Name: Arlington National Cemetery
Permit Number: VPDES Permit VAR40139
Reporting Period: 1 July 2024 to 30 June 2025

Authorized Program Signature Certification

Certification, as required by Virginia Administrative Code (9VAC25-890-40)[1]:

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 gathered and evaluated 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.

Name: COL Andrew J. Wiker WIKER.ANDREW.JACOB.1059327182 Digitally signed by WIKER.ANDREW.JACOB.1059327182 Date: 2025.09.30 11:58:47 -04'00'

Title: Director of Engineering, Arlington National Cemetery

Date: September 30th, 2025

[1]For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this chapter, a principal executive officer of a public agency includes: (1) The chief executive officer of the agency, or (2) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

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1.0 INTRODUCTION

Arlington National Cemetery (ANC) submits this Annual Report in accordance with the General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s) (9 Virginia Administrative Code [VAC] 25-890-1, et seq.) Part I D. The Annual Report contains an evaluation of ANC's MS4 program implementation, a review of each minimum control measure, and the status of the Total Maximum Daily Load (TMDL) Action Plan.

Each section below describes the effectiveness of ANC's MS4 program and a discussion of whether or not ANC must update the MS4 Program Plan.

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2.0 MINIMUM CONTROL MEASURE REPORTING AND EVALUATION

2.1 Public Education and Outreach

(1) ANC addressed the following high-priority stormwater issues in the public education and outreach program:		
Illicit Discharge Detection and Elimination; Good Housekeeping; Minimizing Potential Pollutants		
(2) ANC used the following strategies to communicate each high-priority stormwater issue:		
Strategies	**Strategies used by ANC (check all used during permit year)**	**Issue addressed**
Traditional written materials	☒ Informational brochures and flyers (English and Spanish)	ANC prepared informational brochures during previous reporting years. Brochures continue to be distributed each year to new employees. Approximately 35 brochures were distributed during this reporting period. The brochures address illicit discharge detection and elimination and good housekeeping. **Appendix A-1** contains supporting documentation.
	☒ Flyers posted in employee common areas (e.g., break rooms, restrooms, information bulletin boards)	ANC posts MS4 flyers on bulletin boards by breakrooms and in hallways. These flyers focus on good housekeeping and minimizing potential pollutants.
	☒ Facility-wide emails or newsletters	ANC distributed the DoD Chesapeake Bay Program Journal, Fall 2024 Edition electronically to 300+ employees. This edition included an article (p. 5) titled, *Conducting BMP Inspection and Maintenance for Protection of Water Quality and Installation Readiness.* The article highlighted ANC's BMP maintenance activities to minimize potential pollutants. **Appendix A-2** contains supporting documentation.
Alternative materials	☐ Printed water bottles for employees	
	☐ Stickers or magnets distributed at employee training events and/or tours for the visiting public	

Strategies	Strategies used by ANC (check all used during permit year)	Issue addressed
Signage	☐ Mark storm drains with "Dump No Waste Drains to Chesapeake Bay"	**No new drains were marked this year**; however, ANC's road projects include a standard inlet style to include "Dump No Waste Drains to Chesapeake Bay." These markings support ANC's goals of eliminating illicit discharges and minimizing potential pollutants. **Appendix A-3** contains supporting documentation.
	☐ Signs posted in employee common areas (e.g., break rooms, restrooms, information bulletin boards)	
	☐ Temporary signs at construction sites highlighting new stormwater management facilities or strategies	
Media materials	☒ Information disseminated through electronic media, radio, televisions, movie theater, or newspaper	ANC uses their official social media pages on Facebook, Instagram, YouTube, X, and Flickr to promote general environmental awareness and ANC's initiatives. ANC shared posts promoting their Arbor Day and Arboretum tours. Facebook posts have more than 31,000 views. Examples of social media posts are included in **Appendix A-4**. This information supports ANC's goals of minimizing potential pollutants.
Speaking engagements	☒ Host educational arboretum and rain garden tours and events for the visiting public and distribute brochures to attendees	ANC hosted six public walking tours focused on horticulture and the Arboretum. The tours included information about ANC's rain gardens and supported ANC's goal of minimizing potential pollutants. ANC announced tour dates on social media and linked them to a post on their website. Approximately 50 people attended the tours. An example of the tour announcement posts on their website is provided in **Appendix A-5**.

Strategies	Strategies used by ANC (check all used during permit year)	Issue addressed
Curriculum materials	☐Host educational arboretum and rain garden tours and events geared toward visiting children and school groups	
Training materials	☒Employee training presentations focused on stormwater management, spill response, recognition and reporting of illicit discharges, good housekeeping, and pollution prevention	Section 2.6 discusses training. ANC maintains a stormwater training presentation. Training was conducted using existing training materials during this reporting period. Approximately 350 people attended training events. Training addressed all three high-priority stormwater issues.
(3) 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 and the rationale for the change(s):		
None		
(4) Public education activities conducted that included education regarding climate change:		
None		

MCM 1 Review and Evaluation Public Education and Outreach				
BMP	**Measurable Goal**	**Evaluation Results**	**If not effective, provide discussion of MS4 Program Plan changes required**	**High-priority Stormwater Issue Addressed**
Informational brochures or flyers	100 brochures or flyers distributed	☒ Effective ☐ Not Effective	N/A	☒ Illicit Discharge Detection and Elimination ☒ Good Housekeeping ☐ Minimizing Potential Pollutants
Facility-wide emails or newsletters	200 people reached via email	☒ Effective ☐ Not Effective	N/A	☐ Illicit Discharge Detection and Elimination ☐ Good Housekeeping ☒ Minimizing Potential Pollutants
Information disseminated through social media posts and ANC website	10,000 people reached	☒ Effective ☐ Not Effective	N/A	☐ Illicit Discharge Detection and Elimination ☐ Good Housekeeping ☒ Minimizing Potential Pollutants

MCM 1 Review and Evaluation Public Education and Outreach				
BMP	**Measurable Goal**	**Evaluation Results**	**If not effective, provide discussion of MS4 Program Plan changes required**	**High-priority Stormwater Issue Addressed**
Host educational tours for the visiting public	4 tours with 10 attendees each	☒ Effective ☐ Not Effective	N/A	☐ Illicit Discharge Detection and Elimination ☐ Good Housekeeping ☒ Minimizing Potential Pollutants
Training Materials	250 employees trained	☒ Effective ☐ Not Effective	N/A	☒ Illicit Discharge Detection and Elimination ☒ Good Housekeeping ☒ Minimizing Potential Pollutants

2.2 Public Involvement and Participation

(1) Summary of public input on ANC's MS4 program		
Public Input Comment		**ANC's Response**
Any public input or comments on MS4 program via email, phone, or in-person?	None	N/A

(2) Webpage link to the ANC's MS4 program and stormwater website:

ANC MS4 Program documents are available to the public in on its website: https://www.arlingtoncemetery.mil/About/Policies-and-Public-Notices/Public-Notices

(3) Public involvement activity implemented by ANC	**Strategies used by ANC (check all used during permit year)**	**Efforts to reach and engage all economic and ethnic groups**	**Metric to determine if beneficial to water quality**	**Evaluation of metric as to whether or not the activity is beneficial to improving water quality**	**Other MS4 permittees who participated with ANC in public involvement opportunities**
Voluntary clean-up days along stream channels, outfalls, interconnections, and storm drains	☐ ANC employees participate in Clean the Bay day to remove litter around the site	This event is for ANC employees only. All employees are invited to volunteer.	Number of participants	☐ Effective ☐ Not Effective	Joint Base Myer-Henderson Hall, Pentagon
Events, tours, and online presentations for ANC public and/or visiting public	☒ ANC presented six tours to people interested in learning about ANC's goal of minimizing pollutants in stormwater. Approximately 20 people attended each tour.	Tours are posted on publicly accessible websites and are free to participate.	Number of participants	☒ Effective ☐ Not Effective	None
Online and in-person educational classes or presentations	☒ Design a Cemetery teacher module. As part of the lesson, students must address stormwater management and consider environmental impacts.	Classes and presentations are available online, free of charge.	Number of participants	☒ Effective ☐ Not Effective	None

(4) Public involvement activity implemented by ANC	Strategies used by ANC (check all used during permit year)	Efforts to reach and engage all economic and ethnic groups	Metric to determine if beneficial to water quality	Evaluation of metric as to whether or not the activity is beneficial to improving water quality	Other MS4 permittees who participated with ANC in public involvement opportunities
Pollution prevention activity focused on storm drain marking	☐ **No new drains were marked this year**; however, ANC's road projects include a standard inlet style to include "Dump No Waste Drains to Chesapeake Bay." These markings support ANC's goals of eliminating illicit discharges and minimizing potential pollutants. **Appendix A-3** contains supporting documentation.	N/A – activity is conducted by contractors	Number of new storm drains are marked	☒ Effective ☐ Not Effective	None
(5) Public outreach activities conducted that included education regarding climate change					
None					

MCM 2 Review and Evaluation Public Involvement and Participation			
BMP	**Measurable Goal**	**Evaluation results**	**If not effective, provide discussion of MS4 Program Plan changes required**
Events, tours, and online presentations for ANC public and/or visiting public	4 tours with 10 attendees each	☒ Effective ☐ Not Effective	N/A
Online and in-person educational classes or presentations	5 groups utilize curricular activities	☒ Effective ☐ Not Effective	N/A

2.3 Illicit Discharge Detection and Elimination

(1) ANC confirms that the MS4 map and information table are up to date as of June 30 of this reporting year.	☒ Confirm ☐ Not Confirmed, ANC will update the MS4 map
(2) ANC performed dry weather screening of outfalls during the reporting period, as part of the dry weather screening program. ANC performs dry weather field screening of all nine MS4 outfalls and interconnections annually. Several discharge points are underground or otherwise inaccessible, and screening occurs at the nearest upstream visible access point. Methods for completing the dry weather screenings include: • Observing outfall or upstream location identified in the MS4 Program Plan and documenting results. • If discharge observed: 1) Estimate flow rate; 2) Test for chlorine; and 3) Look for visual characteristics (e.g., odor, color, clarity, floatables, deposits, stains, vegetation, structural condition, etc.) To investigate potential illicit discharges, ANC will: • Work progressively up from the outfall or interconnection and observe intakes; • Split the facility into equal drainage segments and investigate manholes at strategic points; and/or • Work progressively down the trunk.	Total Outfalls Screened 9 . **Appendix C** contains supporting documentation.

(3) List of illicit discharges to ANC's MS4 including spills reaching ANC's MS4

Location and source of the illicit discharge	Date		Discovery method of discharge	Investigation resolution(s)	Follow-up activities	Date investigation closed
	Observed	Reported				
Dry weather flow observed at outfalls OF8-SEC74, IN1A-SEC52, IN1B-SEC52, and IN10-B123. OF8-SEC74 was determined to be groundwater infiltration. Sampling detected chlorine at IN1A-SEC52, IN1B-SEC52, and IN10-B123. Irrigation and street washing are routinely performed in each drainage area routinely. Based on the quantity of water and the de minimis concentration, these flows are not considered illicit. **Appendix C** contains spill reporting documentation.	10/28/2024	N/A	☒ Dry Weather Screening ☐ Reported by the Public ☐ Other, describe: _____	N/A	None	N/A

MCM 3 Review and Evaluation Illicit Discharge Detection and Elimination			
BMP	**Measurable Goal**	**Evaluation results**	**If not effective, provide discussion of MS4 Program Plan changes required**
Update MS4 storm sewer system map and informational table	Accuracy of ANC's storm sewer system map and information table	☒ Effective ☐ Not Effective	N/A
Perform dry weather screening of MS4 outfalls	Number of dry-weather inspections	☒ Effective ☐ Not Effective	N/A
Implement IDDE written procedures when illicit discharges or spills are reported	Number of illicit discharges reported, investigated, and corrected, if needed	☒ Effective ☐ Not Effective	N/A

2.4 Construction Site Stormwater Runoff Control

(1) ANC requires contractors to implement a construction site stormwater runoff program in accordance with the MS4 General Permit Part I E 4 a (3) and (4). ANC, as a federal entity, has not developed their own standards and specifications in accordance with Virginia Erosion and Sediment Control Law (§ 62.144.15:51 et seq. of the Code of Virginia) and Virginia Erosion and Sediment Control Regulations (9VAC25-840). ANC requires contractors to perform inspections for land-disturbing activities as defined in § 62.144.15:51 of the Code of Virginia resulting in disturbance activities greater than 2,500 square feet.	☐ NA, ANC did not conduct land disturbing activities during the reporting period ☒ Confirmed ☐ Not Confirmed (see below) The Southern Expansion project is the only land-disturbing activity conducted at ANC during the reporting period; however, ANC will not take ownership of the property until the project is complete and the site is released to ANC.
	Appendix D contains a table listing ANC's Construction General Permits associated with Southern Expansion.
If one or more of ANC's land disturbing projects were not conducted with the department approved standards and specifications. Explain why the project(s) did not conform to the approved standards and specifications: All land disturbing projects at ANC occurring during the reporting period have been conducted in accordance with the current VDEQ approved standards and specifications for erosions and sediment control.	
(2) Total number of construction site inspections conducted during the reporting period at ANC:	Erosion and Sediment inspections: 14
(3) Total number of compliance and enforcement actions:	0

Compliance/Enforcement Action Number	Compliance/Enforcement Action Implemented	Type of Compliance/Enforcement Action
N/A	N/A	N/A

MCM 4 Review and Evaluation Construction Site Stormwater Runoff Control			
BMP	**Measurable Goal**	**Evaluation results**	**If not effective, provide discussion of MS4 Program Plan changes required**
Perform ESC inspections	Number of ESC inspections performed	☒ Effective ☐ Not Effective	N/A
Correct compliance issues when found or reported	Number of issues found and corrected	☒ Effective ☐ Not Effective	N/A

2.5 Post-Construction Stormwater Management for New Development and Development on Prior-Developed Lands

(1) ANC has not developed their own standards and specifications in accordance with the Virginia Stormwater Management Act (§ 62.1-44.15:24 et seq. of the Code of Virginia) and Virginia Stormwater Management Regulations (9VAC25-870). ANC addresses post-construction stormwater runoff control by requiring compliance with 9VAC25-870.	
(2) Total number of stormwater management facility inspections conducted on stormwater management facilities owned or operated by ANC.	36 **Appendix E** contains Stormwater BMP inspection forms**.**
(3) Description of the significant activities performed on ANC's stormwater management facilities to ensure they continue to perform as designed. (This does not include activities such as grass mowing or trash collection.)	
The following underground manufactured treatment devices were cleaned during the reporting year: STC-7 (October 2024 and February 2025); STC-9 (October 2024); and STF-2 (October 2024 and February 2025). ANC has an active contract to provide quarterly and bi-annual cleaning of these BMPs.	
(4) Confirmation Statements (confirm one)	
☒	ANC submitted stormwater management facility information through the Virginia Construction Stormwater General Permit database for those land disturbing activities for which ANC was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities in accordance with Part I E 5 f.
☐	ANC did not complete any projects requiring coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities.
(5) ANC electronically reported BMPs using the VDEQ BMP Warehouse in accordance with Part I E 5 g.	☐ Yes, Date submitted: _____ ☒ NA

MCM 5 Review and Evaluation Post-Construction Stormwater Management for New Development and Development on Prior-Developed Lands			
BMP	**Measurable Goal**	**Evaluation results**	**If not effective, provide discussion of MS4 Program Plan changes required**
Inspect stormwater management facilities	100% of stormwater management facility inspections performed	☒ Effective ☐ Not Effective	N/A
Submit stormwater facility database updates to VDEQ	Submit stormwater facility database updates to VDEQ when facilities are added or retrofitted	☒ Effective ☐ Not Effective	N/A

2.6 Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by ANC

(1) Summary of any written procedures developed or modified in accordance with Part I E 6 a and b during this reporting period:	
N/A - ANC does not apply deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, sidewalks, or other paved surfaces. ANC will develop and implement a SOP on how to handle the salt distribution across the Cemetery by 1 November 2025.	
(2) ANC reviewed all high-priority facilities to determine if SWPPP coverage was needed during the reporting period	☒ Confirmed ☐ Not Confirmed (Describe)
(3) List of any SWPPPs developed in accordance with Part I E 6 i during the reporting period:	
ANC's SWPPP was updated in January 2025 to address administrative changes and did not identify new high-priority areas.	
(4) Summary of any SWPPPs modified in accordance with Part I E 6 j, 6 l, or 6 m:	
SWPPP modifications during this reporting cycle included adding the party responsible for providing training and the frequency or training events.	
(5) Rationale of any high-priority facilities delisted in accordance with Part I E 6 l or m during the reporting period:	
N/A – no high priority facilities were delisted	
(6) Status of each nutrient management plan as of 30 June of the reporting year:	
Existing NMPs are still in effect and no new NMPs were developed during the reporting year.	

(7) Training events conducted in accordance with Part I E 6 m	**(a) The date(s) of training event(s)**	**(b) Number of employees attending**	**(c) Objective of the training event.**
Quarterly Stormwater Awareness Training for ANC Newcomers	August 2024 November 2024 February 2025	20 13 5	Stormwater Awareness Training, Handouts, and Slides cover the following topics: • Recognition and reporting of illicit discharges • Pollution prevention and good housekeeping associated with road, street, and parking lot maintenance • Pollution prevention and good housekeeping associated with maintenance, public works, or recreational facilities • General stormwater topics, and • Spill response. **Appendix F-1** includes stormwater training slides.
Quarterly Stormwater Slides for ANC Town Hall	August 2024 November 2024 February 2025 May 2025	102 130 80	
Stormwater Handouts for ANC Personnel at Newcomer Training	Distributed at each training and Town Hall meeting	38	

MCM 6 Review and Evaluation Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by ANC			
BMP	**Measurable Goal**	**Evaluation results**	**If not effective, provide discussion of MS4 Program Plan changes required**
NMP Plan implementation	NMP effectiveness	☒ Effective ☐ Not Effective	N/A
SWPPP implementation	SWPPP effectiveness at preventing illicit discharges and promoting good housekeeping	☒ Effective ☐ Not Effective	ANC will investigate compiling SWPPPs into single document following completion of relocation of the service center and southern expansion project (estimated for completion by 2029).
Training program events	250 attendees at training events	☒ Effective ☐ Not Effective	N/A

3.0 CHESAPEAKE BAY TMDL IMPLEMENTATION ANNUAL STATUS REPORT

ANC updated the Chesapeake Bay TMDL Action Plan in March 2025. ANC has met and exceeded the required 100% reduction of pollutants of concern required by the end of the third permit cycle. The Chesapeake Bay TMDL Implementation Annual Status Report is being submitted to VADEQ as a separate document.

4.0 SUMMARY

ANC's MS4 program is effective based on BMPs implemented and measures of effectiveness used.

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Appendix A

Public Education and Outreach Supporting Documentation

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Appendix A-1 - Informational Brochure

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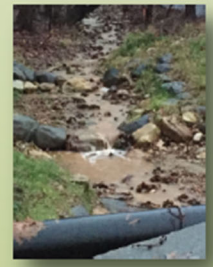
What is Stormwater?

Stormwater (i.e., rain or snowmelt) flows over the ground and impervious surfaces, such as parking lots, roads, sidewalks, and rooftops instead of being absorbed into the ground.

Why is Stormwater Runoff a Problem?



As stormwater runoff flows over surfaces, it collects pollutants, such as trash, chemicals, nutrients, and sediment. This untreated runoff flows into storm drains that lead directly to rivers, streams, wetlands, or coastal waters. The runoff carries pollutants into the waterbodies we use for drinking, swimming, and fishing.

- Sediment can cloud the water, making it difficult for aquatic plants to grow.
- Excess nutrients from pesticides and fertilizers can cause algae blooms.
- Bacteria and other pathogens can create health hazards.
- Litter and debris can choke, suffocate, or disable aquatic life such as ducks, fish, crabs, and birds.
- Common pollutants like trash, pesticides, paint, solvents, and motor oil can poison animals and people.

According to the EPA, impervious surfaces in a typical city block generate more than 5x the runoff than a forested area the same size.

What Should I do if There is a Spill?

If the spill is life-threatening, immediately call 911, then the Environmental POC

If not life-threatening, immediately call the Environmental POC

If safe to do so:

- STOP THE FLOW OF PRODUCT
- WARN PERSONNEL
- PROTECT STORMWATER INLETS
- SHUT OFF IGNITION SOURCES
- INITIATE CONTAINMENT
- COMPLETE THE SPILL RESPONSE FORM AND SUBMIT IT TO THE ENVIRONMENTAL POC

What is an Illicit Discharge?

An illicit discharge is any discharge into a storm drain system that is not composed entirely of stormwater.

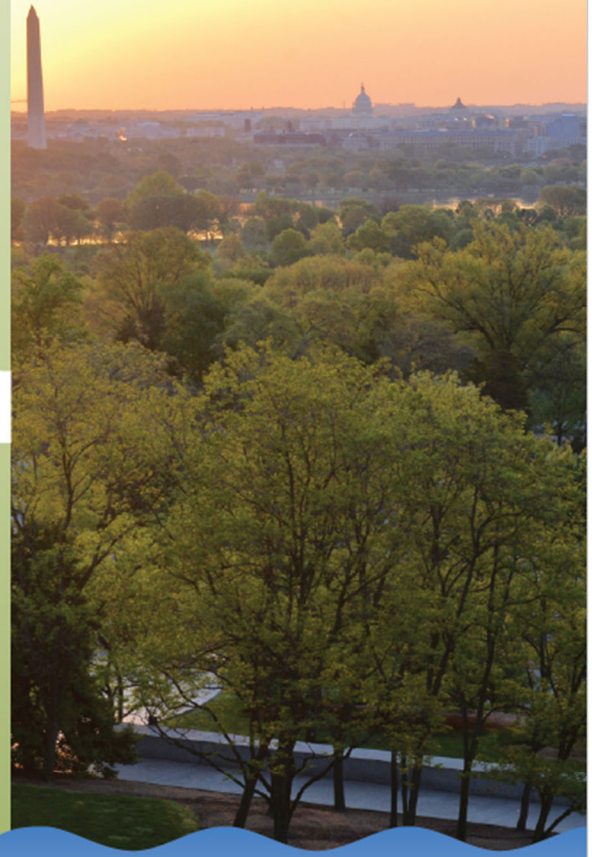
What to look for...

- Water, chemicals, and other fluids flowing in storm drains during dry weather
- Water that is cloudy, dirty, has a sheen, contains debris or litter, has an odor
- Sediment, trash, fuels, and oils on the ground

IF YOU SPILL SOMETHING OR SUSPECT AN ILLICIT DISCHARGE, CONTACT THE ENVIRONMENTAL POC AT 703-614-0520

Stormwater Pollution Prevention

At Arlington National Cemetery



What We're Doing at Arlington National Cemetery

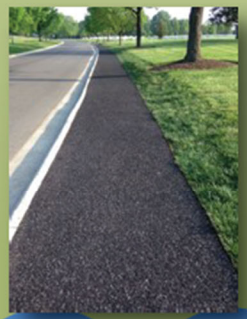
Low-Impact Development (LID)

LID practices are stormwater management practices that mimic natural infiltration or evaporation to remove pollutants and reduce the amount of stormwater runoff.

ANC attempts to manage stormwater as close to its source as possible by preserving and recreating natural landscape features, minimizing impervious areas, and treating stormwater as a resource rather than a waste. To achieve this, ANC uses rain gardens, bioretention ponds, and permeable pavement.

Use and Benefit of Permeable Pavement

Permeable pavement reduces polluted runoff by allowing stormwater to seep through the surface, filtering out pollutants.



Permeable pavement is installed at the Millennium Site and used for sidewalks near the new Chapel Gate and along Eisenhower Avenue.

Pollution Prevention and You

Good Housekeeping

Good housekeeping is the easiest and most effective way you can help reduce or eliminate stormwater pollution.

ANC's GOAL: Keep stormwater from contacting pollutants and entering storm drains.

Keep a look out!

Contact ANC's Environmental POC if you see any of the following:

- Sediment or litter in drains, rain gardens, or bioretention ponds
- Dying vegetation
- Sediment in roads or not contained to construction sites
- Blocked drains
- Significant litter on the ground
- Chemical spills, leaks, or stains

The EPA estimates that polluted stormwater accounts for 65% of pollution in rivers.

How You Can Reduce Your Impact on Stormwater Pollution

At work, at home, anywhere!

- NEVER DUMP ANYTHING DOWN STORM DRAINS!
- Don't litter!
- Maintain your car.

Only rain down the drain!

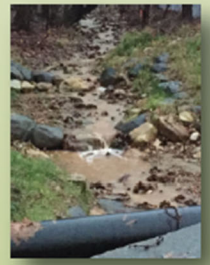
- Wash your car at a car wash or on your lawn.
- Pick up after your pet.
- Have your gutters discharge to vegetated or grassed areas.

- Reseed lawns to prevent sediment runoff.
- Compost or recycle yard waste.
- Use water-based paints and clean paint brushes in a sink.
- Deliver used oil to recycling centers.
- Use minimal amounts of pesticides and fertilizers.
- Consider using porous/permeable pavers when building patios and walkways.
- Clean up oil and chemical spills upon discovery.

¿Qué es la escorrentía pluvial?

Escorrentía pluvial (i.e., lluvia o nieve derretida) fluye sobre el terreno y superficies impermeables, tal como estacionamientos, carreteras, aceras y azoteas en vez de ser absorbida por el terreno.

¿Por qué la escorrentía pluvial es un problema?



Según la escorrentía pluvial fluye a través de las superficies, recoge contaminantes, tales como basura, compuestos químicos, nutrientes y sedimentos. Esta escorrentía pluvial sin tratamiento fluye hacia los drenajes pluviales que la llevan directamente a los ríos, quebradas, humedales o aguas costeras. La escorrentía pluvial transporta contaminantes hacia los cuerpos de agua que utilizamos para beber, nadar y pescar.

- Los sedimentos pueden poner turbia el agua, lo cual dificulta que las plantas acuáticas crezcan.
- Los nutrientes en exceso provenientes de los pesticidas y fertilizantes pueden causar un sobre crecimiento de algas.
- Las bacterias y otros patógenos pueden crear problemas de salud.
- Los escombros y basura pueden asfixiar, sofocar o inhabilitar la vida acuática tal como patos, peces, cangrejos y pájaros.
- Contaminantes comunes como basura, pesticidas, pintura, solventes y aceite de motor pueden envenenar los animales y las personas.

Según la Agencia de Protección Ambiental (EPA, por sus siglas en inglés), las superficies impermeables dentro de un bloque de una ciudad típica pueden generar hasta 5 veces la escorrentía pluvial comparado con un área boscosa del mismo tamaño.

¿Qué debo hacer si ocurre un derrame?

Si el derrame representa una amenaza a la vida, llame inmediatamente al 911, y después llame a la Persona de Contacto (POC, por sus siglas en inglés) Ambiental.

Si el derrame no representa una amenaza a la vida, llame inmediatamente al POC Ambiental.

De ser seguro hacerlo:

- DETENGA EL FLUJO DEL PRODUCTO
- AVISE AL PERSONAL
- PROTEJA LAS ENTRADAS AL DRENAJE PLUVIAL
- APAGUE LAS FUENTES DE IGNICIÓN
- INICIE LA CONTENCIÓN
- COMPLETE LA FORMA DE RESPUESTA A DERRAMES Y ENTRÉGUELA AL POC AMBIENTAL

¿Qué es una descarga ilegal?

Una descarga ilícita es cualquier descarga a un sistema de drenaje pluvial que no está compuesta en su totalidad por escorrentía pluvial.

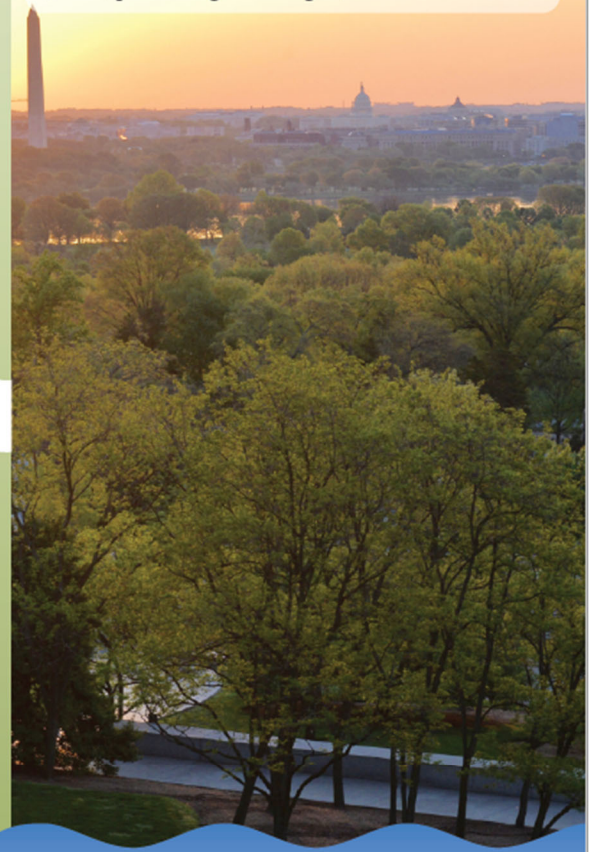
Lo que debe observar…

- Agua, compuestos químicos, y otros fluidos que estén fluyendo hacia los drenajes pluviales durante tiempo seco
- Agua turbia, sucia, que tenga un brillo, contenga escombros o basura, o que tenga un olor
- Sedimentos, basura, combustibles y aceites sobre el terreno

SI USTED DERRAMA ALGO O SOSPECHA UNA DESCARGA ILEGAL, CONTACTE AL POC AMBIENTAL AL SIGUIENTE NÚMERO DE TELÉFONO 703-614-0520

Prevención de Contaminación de la Escorrentía Pluvial

en el Cementerio Nacional de Arlington (ANC, por sus siglas en inglés)



Lo que estamos haciendo en el Cementerio Nacional de Arlington

Desarrollo de Bajo Impacto (LID, por sus siglas en inglés)

Las practicas LID son prácticas de manejo de escorrentía pluvial que imitan la infiltración natural o evaporación para remover los contaminantes y reducir la cantidad de escorrentía pluvial.

El ANC intenta manejar las escorrentías pluviales de la manera más cercana posible a la fuente al preservar y recrear las características naturales del entorno, minimizando las áreas impermeables, y utilizando la escorrentía pluvial como un recurso y no como un desperdicio. Para lograr esto, el ANC utiliza jardines de lluvia, lagunas de bio-retención, y pavimento permeable.

El Uso y Beneficio del Pavimento Permeable

El pavimento permeable reduce las escorrentías contaminadas al permitir que las aguas de escorrentía pluvial se infiltren a través de la superficie, lo cual filtra los contaminantes.

El pavimento permeable se instala en el Sitio del Milenio ("Millenium Site") y se utiliza para las aceras cerca al Portón de la Capilla ("Chapel Gate") y cerca de la Avenida Eisenhower ("Eisenhower Avenue").

Prevención de Contaminación

Su Buen Mantenimiento de las Facilidades

El buen mantenimiento de las facilidades es el método más fácil y efectivo en que usted puede ayudar a reducir o eliminar la contaminación de las escorrentías pluviales.

ALa META del ANC: Prevenir que las escorrentías pluviales entren en contacto con contaminantes y entren a los drenajes pluviales.

¡Manténgase pendiente!

Contacte al POC Ambiental del ANC si usted observa alguno de los siguientes:

- Sedimento o basura en los drenajes, jardines de lluvia o en las lagunas de bio-retención.
- Vegetación que esté decayendo.
- Sedimento en las carreteras o no contenido dentro de los sitios de construcción.
- Drenajes bloqueados.
- Cantidades excesivas de basura sobre el terreno
- Derrames de compuestos químicos, escapes o manchas.

La EPA estima que las escorrentías pluviales contaminadas contribuyen al 65% de la contaminación en los ríos.

Como usted puede reducir su impacto en la contaminación de las escorrentías pluviales

¡En su trabajo, hogar y dondequiera!

- ¡NUNCA TIRE NADA DENTRO DE LOS DRENAJES PLUVIALES!
- No tire basura al piso
- Provea mantenimiento a su vehículo

¡Solamente lluvia por el desagüe!

- Lave su carro en un establecimiento de autolavado o sobre su césped.
- Recoja los desperdicios de su mascota.
- Coloque sus drenajes pluviales para que descarguen a áreas con vegetación o al césped.
- Re-siembre los jardines con césped para evitar que la escorrentía se lleve el sedimento.
- Haga composta o recicle los desechos del jardín.
- Utilice pinturas a base de agua y limpie las brochas dentro del lavadero.
- Entregue sus aceites usados a centros de reciclaje de aceite.
- Utilice cantidades mínimas de pesticidas y fertilizantes.
- Considere utilizar adoquines porosos / permeables cuando vaya a construir patios o aceras.
- Limpie los derrames deaceite o compuestos químicos tan pronto los descubra.

Appendix A-2 - Facility-wide Newsletter

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Fall 2024

DoD Chesapeake Bay Program Journal

Edited by the DoD Chesapeake Bay Program Team

PROTECTING THE CHESAPEAKE BAY FOR MILITARY READINESS, FOR OUR COMMUNITY, FOR FUTURE GENERATIONS

DoD Chesapeake Bay Program Welcomes Navy Environmental Resilience Program Manager

By DoD Chesapeake Bay Program

Joe Rieger

IMAGE PROVIDED BY ELIZABETH RIVER PROJECT

Please welcome Joe Rieger to the Regional Environmental Coordination team as the Navy's new Environmental Resilience Program Manager for NAVFAC Mid-Atlantic. He is currently stationed at Naval Station Norfolk.

Joe grew up in Ohio and while attending Ohio University worked two summers tagging diamondback terrapins on the Patuxent River in Maryland. These early experiences molded his heightened interest in the Chesapeake Bay and love for the water.

In 2000, Joe graduated from Ohio University with an undergraduate degree in Biology and then worked for two years at Ohio State's Aquatic Ecology Lab radio-tracking saugeye fish and studying freshwater mussels. Continuing his formal education, Joe enrolled in the master's degree program at Old Dominion University (ODU) in Virginia and worked at Naval Support Activity Hampton Roads – Northwest Annex to research tree frog reproductive behavior and how tree frogs can detect waters with predatory fish and avoid laying their eggs in those habitats. Joe received his master's degree in 2002 and then joined the environmental not-for-profit Elizabeth River Project in Norfolk, VA, where he managed the organization's restoration program and oversaw numerous on-the-ground projects. He managed the nation's first sediment remediation project lead by a nonprofit and played a pivotal role in Norfolk's Lafayette River becoming the first river in the Chesapeake Bay to be considered as fully restored for oyster habitat. After 22 years of service at the Elizabeth River Project, Joe decided to bring his environmental restoration training and expertise to the Navy.

Starting in May 2024, Joe became NAVFAC Mid-Atlantic's first dedicated position focused solely on climate resilience project implementation using natural and nature-based projects both on and off installations. He is looking forward to working with local partners and developing new and strengthening existing relationships to make Navy installations more resilient with changing climate and assure current and future Navy missions and readiness.

IN THIS ISSUE

Rear Admiral Carl A. Lahti

IMAGE BY DEPARTMENT OF THE NAVY

Commander's Corner: DoD CBP Gets New Leadership in Rear Admiral Carl A. Lahti

By Kevin Du Bois, DoD CBP

Rear Admiral Wesley McCall served as Commander of Navy Region Mid-Atlantic and designated lead of the DoD Chesapeake Bay Program since May 19, 2023. We are grateful for his leadership as a member of the Chesapeake Bay Commission, for his steadfast support of the CBP, and for spearheading installation and environmental clean-ups through the Commanders' Clean-Up Challenge. Admiral McCall was succeeded by Rear Admiral Carl Lahti as the new Commander, Navy Region Mid-Atlantic on July 3rd, 2024.

Admiral Lahti is a native of Buffalo, New York. He is a 1989 graduate of the United States Naval Academy, where he received a Bachelor of Science in Systems Engineering. He holds a Master of Science in Electrical Engineering from the Naval Postgraduate School in Monterey, California and a Master of Arts in National Security and Strategic Studies from the Naval War College in Newport, Rhode Island. From 2005 to 2006, Admiral Lahti served as an associate fellow with the Chief of Naval Operations where he studied alternative energy strategies for the Navy.

His operational tours include division officer on the USS Stonewall Jackson, navigator on the USS Miami, and executive officer on the USS Dallas. He commanded the USS Nebraska in Bangor, Washington.

His shore and staff assignments include operations officer on the staff of Commander, Submarine Squadron 4; deputy commander, Submarine Development Squadron 12; and chief, Strategic Effects Division; in the Strategic Plans and Policy Directorate of the Joint Staff. Admiral Lahti also served as the 50th commanding officer of Naval Submarine Base New London; chief of staff at Navy Installations Command; director, Energy and Environmental Readiness Division, N45 OPNAV; and the 91st commandant, Naval District Washington. Admiral Lahti assumed duties as the 44th commander of Naval Forces Japan and Navy Region Japan, July 14, 2021.

His awards include the Defense Superior Service Medal, Legion of Merit, Meritorious Service Medal, Navy and Marine Corps Commendation Medal, and Navy and Marine Corps Achievement Medal, among other unit and campaign commendations.

At the DoD CBP, we look forward to working with Admiral Lahti in the strong tradition that demonstrates DoD leadership among federal agencies involved in the larger Chesapeake Bay Program Partnership.

DoD Chesapeake Bay Spring Clean-ups and Commanding Officer Clean-up Challenge Winners

By Angela Jones, DoD CBP

Between April 2024 and June 2024, the DoD Chesapeake Bay Program collected clean-up information from installations in the watershed. Installations in Virginia, Maryland, and the District of Columbia – including 780 volunteers from across all Services – collectively cleaned approximately 24.4 miles of land and water. They removed 17,064 pounds of trash and debris, keeping it from polluting the Bay and harming its abundant fish and wildlife.

IMAGE BY ERICKA GILLESPIE

The Fort Gregg-Adams Team is the winner of the "Commanding Officer Clean-up Challenge" for collecting the most trash (4,332 pounds) at a DoD installation in the Chesapeake Bay Watershed.

IMAGE BY APRIL PHILLIPS

The Joint Expeditionary Base Little Creek – Fort Story Environmental Team is the winner of the "Commanding Officer Clean-up Challenge" for collecting the most pounds of trash per participant. The team collected 1,520 pounds of trash and debris for an average of 138 pounds per participant.

Efforts by both teams exemplify superior teamwork and commitment to the protection of the Chesapeake Bay at their installations.The magnitude of these efforts highlights DoD's role as a leader within the Chesapeake Bay Program Partnership and demonstrates its strong stewardship ethic in keeping with the goals and objectives of Executive Order 13508 for Protection and Restoration of the Chesapeake Bay.

Success Story: An Ecosystem Approach to Pollution Reduction at Fort Meade Achieves Multiple Installation Goals and Saves Money!

By Mitchell Keiler, Fort Meade, Maryland

Fort Meade has achieved cost effective MS4 permit compliance by partnering with the U.S. Fish and Wildlife Service and using a whole watershed approach to restore stream beds and banks, in-stream wetlands, and connections to adjacent floodplains. Their collaborative designs have addressed water quality requirements but have also achieved goals for the protection of natural resources while improving installation resilience by protecting mission critical assets.

Background

Fort Meade has eight miles of streams on the installation, most of which have been channelized, armored, or modified to prioritize stormwater conveyance. As a consequence, all of its streams are listed as impaired by the Maryland Department of the Environment (MDE) and previous studies documented that the streams were suboptimal for supporting aquatic organisms. Perhaps unsurprisingly then, a 2014 U.S. Army Corps of Engineers (USACE) MS4 permit action plan for Fort Meade did not even consider stream restoration as a potential alternative for achieving pollution load reductions.

However, many local governments in Maryland had started to move toward stream restoration as a cost-effective means to achieve Total Maximum Daily Load (TMDL) nutrient and sediment credits and so, beginning in 2015, Fort Meade embarked on a new watershed approach to managing its runoff by considering stream restoration along with placing stormwater controls in headwaters.

In 2018, the USACE helped Fort Meade to determine which installation stream reaches could be restored to meet TMDL criteria and this effort helped to identify restorable stream channels that had been entrenched with little opportunity to access their natural floodplains or were otherwise impaired.

Next, Fort Meade staff began to look at avenues to fund stream restoration projects and found that other installations were developing cooperative agreements with the U.S. Fish and Wildlife Service (USFWS) to provide stream restoration. Following suit in 2019, Fort Meade developed a long-term agreement with the USFWS Chesapeake Bay Ecological

IMAGE BY CHUCK YANG

Inspecting the eroded stream bed and banks prior to repair, Site UT-6

IMAGE BY MITCH KELLER

Looking upstream after restoration, Site 2

Services Field Office to prioritize stream restoration reaches and assist in conducting projects to meet multiple installation goals for ecological enhancement and MS4 stormwater permit compliance. Another important benefit of this approach was saving hundreds of thousands of dollars per MS4 impervious acre credit as compared to typical BMPs like bioretention.

Restoring Severn Run

Stream channel erosion was estimated to be 400 tons per year, equivalent to 119 impervious acre treatment credits.

As Maryland's natural areas were converted to farms, industry, and urban development, its streams were impacted by increased pollution and habitat alteration. Erosion of stream beds and banks were dislodging approximately 400 tons of sediment per year and active head cuts were moving upstream threatening transportation routes critical for the Fort's mission operations.

In collaboration with the USFWS, the Severn Run watershed was identified for ecosystem restoration, in part, because it is the southernmost coastal plain stream in Maryland known to support native brook trout. The restoration concept included implementing upstream stormwater controls first, in conjunction with local high school and Maryland State Highway Administration partners.

Downstream reaches had eroded so deeply that they were no longer providing many of a stream's natural ecosystem services nor functioning properly with access to its adjoining floodplain. The project focused on stream credit Protocols 1 and 3 and called for repairing 2,800 linear feet of stream channel, filling eroded head cut areas, elevating the water table, and restoring a seepage wetland system where pools would function like in-stream vernal pools and channels would once again support water-loving vegetation.

The Fort Meade design team selected regenerative stormwater conveyance (RSC) as the preferred restoration method, filling the channel and using stone cobble weirs to function as grade controls to elevate the channel to reconnect to the historic floodplain. Because the public has become skeptical about tree losses as part of stream restoration projects in Maryland, the selected contractor was held to strict requirements to minimize these impacts. This project was also required to consider time-of-year restrictions to protect bat species of concern and take precautions to minimize in-water impacts to cold water fish species.

IMAGE BY CHUCK YANG

Project team, with Former Garrison Commander Col. Sapp (center)

The project was built under a compressed construction schedule which was only made possible by hiring the project designer to inspect the job weekly and make any necessary real-time design adjustments to keep the project moving while protecting species of concern. All project adjustments were recorded and will be presented to MDE with final as-built plans for regulatory approval.

Lessons Learned

The project was only completed recently, but even before a full assessment of success criteria, lessons learned have been documented, including:

- In developing a stream restoration plan, take the whole watershed approach, and make sure you have addressed upstream stormwater issues first before you head downstream.
- Survey your drainageways, including soil sampling, to determine and prioritize TMDL restoration opportunities.
- Understand what functional uplift your project will provide to better communicate multiple benefits, including climate resiliency, with internal management and public partners and stakeholders.
- Plan for delays; stream projects take 2–3 years to complete funding, assessment surveys, engineering, permitting, and construction.
- The client, agent, contractor, and designer should all be equal partners in quality assurance for a successful project.
- Hire local contractors with a proven work history and skilled employees.

Fort Meade has benefitted from working with its Defense community partners and USFWS design collaborators to meet multiple installation goals. The installation has embraced a whole ecosystem approach to stream restoration and has additional similar projects planned as it continues to restore the Severn Run while improving installation resilience.

FOR MORE INFORMATION

Mitchell Keiler, Stormwater/Water Resources Program
Directorate of Public Works, Fort Meade, Maryland
mitchell.a.keiler2.civ@army.mil | 301-741-1324

Conducting BMP Inspection and Maintenance for Protection of Water Quality and Installation Readiness

By Janet Goldbach Ehmer, Jacobs

For stormwater professionals, managing an inventory of best management practice (BMPs) can be a daunting prospect, but it is necessary to protect water quality and prevent flooding to maintain military readiness. Executive Order 13508 calls on federal agencies to be a leader in Chesapeake Bay protection and restoration. The DoD Chesapeake Bay Program (CBP) is unique in that it annually publishes jurisdiction-specific BMP credit reports and provides them to installation, jurisdiction, and U.S. Environmental Protection Agency (EPA) staff for help in assessing BMP inventories to maximize water quality benefits.

This article provides guidance on how to use the information in the reports to determine if action is needed to maintain or regain credit, describes the different state requirements for BMP inspection and maintenance, addresses common BMP maintenance issues and how in-house resources may be used, and describes the benefits of establishing a BMP preventative maintenance program that tracks and monitors inspections and maintenance.

BMP Credit Reports – A Useful Resource in Managing BMP Inventories

A review of credit report information should be a stormwater manager's first step in annual strategic planning to manage BMP inventories to meet Municipal Separate Storm Sewer System (MS4) permit requirements or Total Maximum Daily Load (TMDL) Federal Planning Goals. The DoD CBP creates these reports to document the status of Chesapeake Bay watershed BMPs in the jurisdictions of Maryland, Pennsylvania, Virginia, and Washington DC, where the vast majority are found. The reports summarize installation-wide metrics and provide BMP-specific information based on the Chesapeake Assessment Scenario Tool. They provide details on the status of BMPs that have received full or partial credit or have lost credit. Importantly, the reports also document the reasons for lost credit and indicate whether installation or jurisdiction corrective action is needed. Rather than implementing new BMPs. restoration of lost credit is often more cost-effective and prevents the unnecessary use of valuable land resources. Installation personnel with questions regarding use of the jurisdiction-specific BMP credit reports should contact DoD CBP staff. For more information on specific BMP requirements, installations can review summarized profiles of CBP approved BMPs in this BMP reference guide https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/BMP-Guide_Full.pdf.

Inspection and Maintenance Requirements

Installations may develop specific BMP inspection and maintenance plans to help maintain and/or regain credit. BMPs are required to be inspected and maintained in timeframes according to the site development stormwater management plan. While the DoD CBP does not develop credit reports for New York or West Virginia, general BMP inspection and maintenance guidance references are provided for each jurisdiction in the Chesapeake Bay watershed as follows:

Virginia: Information on stormwater management inspector training can be found at: https://www.deq.virginia.gov/our-programs/training-certification. BMP maintenance guidance is available on the Virginia Department of Environmental Quality (VDEQ) website in the Virginia Stormwater Management Handbook at https://www.deq.virginia.gov/our-programs/water/stormwater/stormwater-construction/handbooks. If an installation has an MS4 permit, its BMPs are required to be inspected annually unless an alternate BMP inspection schedule has been submitted as part of the installation's MS4 program plan.

Reasons for Partial or At Risk Credit - Selected Installation
Refer to the Introduction tab for follow-up actions to resolve issues.

Description	# of BMPs
BMP fully credited - credit at risk in SY2024 if not inspected & reported in next year's datacall	
BMP fully credited - credit not attributed to DoD	
BMP fully credited in error - VADEQ BMP Warehouse does not reflect a failed inspection reported in datacall	
Additional information in yellow-highlighted fields could lead to increased credit in CAST	

Reasons for No Credit (RED Status) - Selected Installation
Refer to the Introduction tab for follow-up actions to resolve issues.

Description	# of BMPs
No credit received - BMP not reported to the VADEQ BMP Warehouse	
No credit received - ineligible BMP type	
No credit received - BMP credit expired due to inspection/maintenance date	
No credit received - entry error to NEIEN	
No credit received - entry error to CAST	
No credit received - required data missing for the state	
No credit received – SWCGP must be closed out by installation prior to import by installation to VADEQ BMP Warehouse	
No credit received - Unknown if BMP has been transferred from SWCGP database to Warehouse	

Sample table depicting BMPs at risk for losing credit or receiving no credit from a BMP Crediting Report

Maryland: The Maryland Department of the Environment (MDE) Technical Memorandum #9 for state and federal projects provides guidance on stormwater BMP inspection and maintenance schedules; see https://mde.maryland.gov/programs/Water/StormwaterManagementProgram/Documents/Technical%20Memorandum%20No.%209%20-%20Maintenance%20Schedules.pdf. Installations can also reference the Maryland Stormwater Design Manual, Volume I, Chapters 3 and 5 for BMP maintenance information.

Washington D.C.: Information on conducting BMP inspections can be found at: https://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/BMP%20Construction.%20Inspection%20Training.pdf. BMP maintenance guidance is available in the Washington D.C. Department of Energy and the Environment (DOEE)'s Stormwater Management Guide for detailed BMP maintenance and inspection information available at https://doee.dc.gov/swguidebook.

Pennsylvania: Information on conducting BMP inspections can be found at: https://www.dep.pa.gov/Business/Water/CleanWater/StormwaterMgmt/Stormwater/Pages/Training.aspx. Installations can refer to the Pennsylvania Department of Environmental Protection's (PDEP) Stormwater Best Management Practices Manual, Chapter 6 for detailed BMP inspection and maintenance information at http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4673.

West Virginia: Installations can refer to the West Virginia Department of Environmental Protection's (WVDEP) Stormwater Management and Design Guidance Manual for detailed BMP inspection and maintenance information available at https://dep.wv.gov/WWE/Programs/stormwater/MS4/Documents/West_Virginia_Stormwater_Management_and_Design_Guidance_Manual_FULL_November_2012-v2.pdf.

New York: Information on conducting BMP inspections can be found at https://dec.ny.gov/environmental-protection/water/water-quality/stormwater/construction-stormwater-toolbox. BMP maintenance guidance is provided in the New York State Department of Environmental Conservation (NYSDEC) Stormwater Design Manual for detailed BMP maintenance and inspection information available at https://extapps.dec.ny.gov/fs/projects/24-25DraftCGPDesignManual/Manual.SW.CGP.2024-07-31.Design_Manual_Issued_2024-07-31.pdf.

According to BMP information submitted by military installations, typical structural stormwater BMPs include wet ponds, dry detention or extended detention facilities, bioretention facilities (rain gardens), filtering practices (sand filters), and infiltration basins. Common maintenance issues for these important facilities include overgrown vegetation, bank and outfall erosion, sedimentation, pipe and structure deficiencies, and trash and debris. Some maintenance issues may be addressed in-house if an installation has adequate staff resources. For example, mowing and vegetation maintenance around wet ponds, dry ponds, and bioretention facilities may be combined with other landscape maintenance occurring at the installation. Removal of obstructions and trash/yard debris at BMPs may be an activity performed by volunteers such as in a "Clean the Base Day" or other similar installation events when there are already large numbers of mobilized volunteers.

Installation staff may conduct BMP inspections in-house to evaluate the functionality and maintenance needs of BMPs. Some common criteria to determine functionality may include checking if individual components work as intended, checking the amount of sediment in the BMP, and checking

IMAGE PROVIDED BY SCOTT LONESOME

Contractor inspecting and cleaning a stormwater pretreatment chamber at Arlington National Cemetery

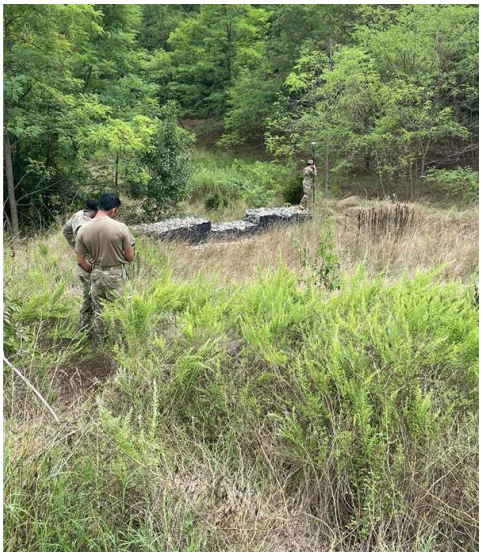

IMAGE PROVIDED BY RICARDO FERNANDEZ

Base personnel surveying a grassy swale at Joint Base Andrews to identify any maintenance needs

if any components have broken, been corroded, or weakened. Installations may opt to use support contracts for inspections if they have many BMPs with limited staff to perform the inspections or have BMPs that require specialized equipment for access.

While inspection and maintenance standards for natural and nature-based BMPs is less common, some examples of useful resources include the Virginia Stormwater BMP Clearinghouse (https://swbmp.vwrrc.vt.edu/), and Maryland Vegetation in Stormwater BMP (https://mde.maryland.gov/programs/Water/StormwaterManagementProgram/Documents/MDE%20Stormwater%20Vegetation%20Guidance%2011-2019.pdf).

Planning and Tracking BMP Inspection and Maintenance Activities

Installations are encouraged to identify their BMPs in the Real Property Categorization System with appropriate Facility Analysis Categories[1] and set up a BMP preventative maintenance program to plan and track inspection and maintenance activities. Planning for BMP maintenance and inspection can help the installation anticipate and allot sufficient time and resources to prevent loss of BMP credit. It also helps prevent flooding, erosion, or other impacts to critical mission assets or readiness. Installations should track and record the initial inspections, follow-up maintenance actions, and re-inspection status for all of their BMPs. Installations can utilize the BMP inspection checklists provided in jurisdiction inspection and maintenance guidelines to document the inspections and describe the follow-up maintenance actions. An Excel spreadsheet or database with the BMP inventory (similar to the credit reports) can be used to document the inspection schedule, date of inspections, maintenance needs, and follow-up activities. An installation can select a subset of BMPs for inspection each year based on the inspection due date and prioritize BMPs that require contracting for maintenance or repairs. The follow-up maintenance requiring contracting should include a cost estimate to help in programming and competing for future sustainment funding. Tracking BMP preventative maintenance and inspection information will also make it easier to respond to future BMP datacall information requests.

[1] "New Facility Analysis Category Codes Coming to Improve BMP Maintenance" DoD Chesapeake Bay Program Journal. July 09, 2020. https://www.denix.osd.mil/chesapeake/denix-files/sites/30/2020/07/Summer-Journal_Final_S508-compressed.pdf

Chesapeake Bay Action Team (CBAT) Updates

By Janet Goldbach Ehmer, Jacobs

Members of the Chesapeake Bay Action Team (CBAT) convened for its quarterly meeting on July 25, 2024. Members were provided with an overview and training presentation on the best management practices (BMP) and projects and indicators (P&I) datacalls.

Anonymous Mentimeter Poll

The DoD CBP will use CBAT Mentimeter results to develop topics for future outreach materials and CBAT presentations to support the installations' immediate needs. Questions asked included:

- What is the hardest part about completing the BMP and P&I datacalls?
- Do you have any suggestions on how to improve the datacall process?
- What is the biggest challenge in implementing the Chesapeake Bay Program at your facility?
- What topics are you most interested in for future CBAT meeting presentations?

2024 Datacall Overview and Training Presentation

Installations were provided with an overview of the procedures and expectations for installations in Fiscal Year (FY) 2024 BMP and P&I datacalls, which were released on August 1 and August 30, respectively. The 2023 BMP crediting results for each jurisdiction were shared. One of the main reasons that installations lost credit for existing BMPs was lapsed maintenance and inspections.

Updates for the FY2024 BMP datacall:

- Submitting the acreage for street sweeping parking lots and other non-impervious acreage with curb and gutter separate from the street acreage with curb and gutter
- Washington D.C. had a template change to include a latitude/longitude column
- Pennsylvania had a template change to include a locality column

Updates for the FY2024 P&I datacall:

- A new category for the prevention of toxics discharge. This category includes the inspection and maintenance of aboveground and underground storage tanks.

DoD/DoN Chesapeake Bay Program Office
1510 Gilbert Street
Building N-26, Room 3300
Norfolk, VA 23511

Check it Out

10/9/2024 – Readiness and Environmental Protection Integration (REPI) webinar
Air Installations Compatible Use Zone (AICUZ) and REPI Partnerships for Enhanced Land Protection
https://www.repi.mil/Resources/Webinars/ModuleID/84948/ItemID/4774/mctl/EventDetails/

12/11/2024 – REPI webinar
Navigating Military Readiness Through Responsible Project Execution
https://www.repi.mil/Resources/Webinars/ModuleID/84948/ItemID/4775/mctl/EventDetails/

9/26/2024 – SERDP-ESTCP webinar
Effects of Multiple Stressors on Marine Mammals and Terrestrial Species on DoD Lands
https://serdp-estcp.mil/events/details/7d51326a-5dc7-405f-8784-6814ee353df8/effects-of-multiple-stressors-on-marine-mammals-and-terrestrial-species-on-dod-lands

8/22/2024 – SERDP-ESTCP webinar
Development of Assessment Tools for Downscaled Global Climate Models
https://serdp-estcp.mil/toolsandtraining/details/8333e407-c457-4aed-a61e-8e07aae3d00a/development-of-assessment-tools-for-downscaled-global-climate-models

Helpful Links

U.S. Fish and Wildlife Service (USFWS)
Eagle Incidental and Nest Take – General Permit Standard Conditions
https://www.fws.gov/library/collections/eagle-incidental-and-nest-take-general-permit-standard-conditions

U.S. Army Corps of Engineers (USACE)
Migratory Bird Treaty Act (MBTA) Policy and Best Management Practices for Civil Works
https://cw-environment.erdc.dren.mil/memos.cfm?CoP=&Code=0&Id=1727

This newsletter is produced by CH2M HILL, Inc. (now Jacobs) under NAVFAC Atlantic A-E Contract N62470-19-D-4015 in support of the Safe Drinking Water Act and Clean Water Act Environmental Compliance Program. For more information or to be added to the email distribution list, please contact the DoD Chesapeake Bay Program: http://www.denix.osd.mil/chesapeake/home.

Appendix A-3 – Design Plans Depicting "Dump No Waste Drains to Chesapeake Bay" Markers

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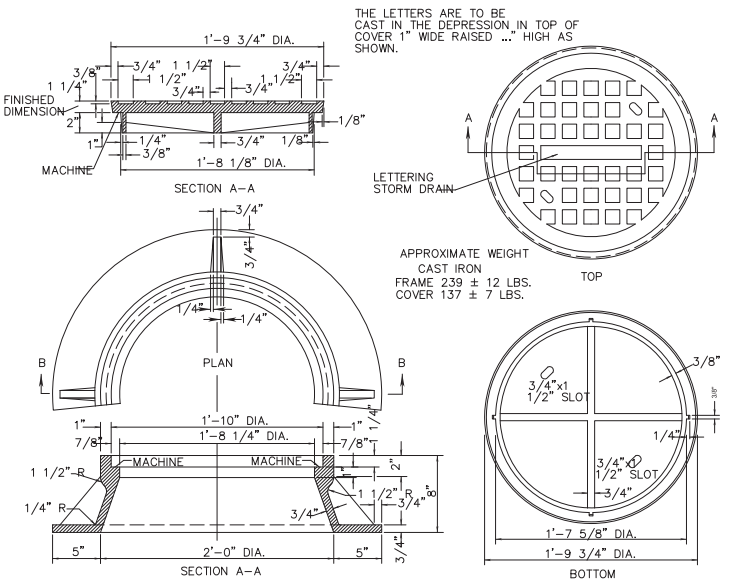
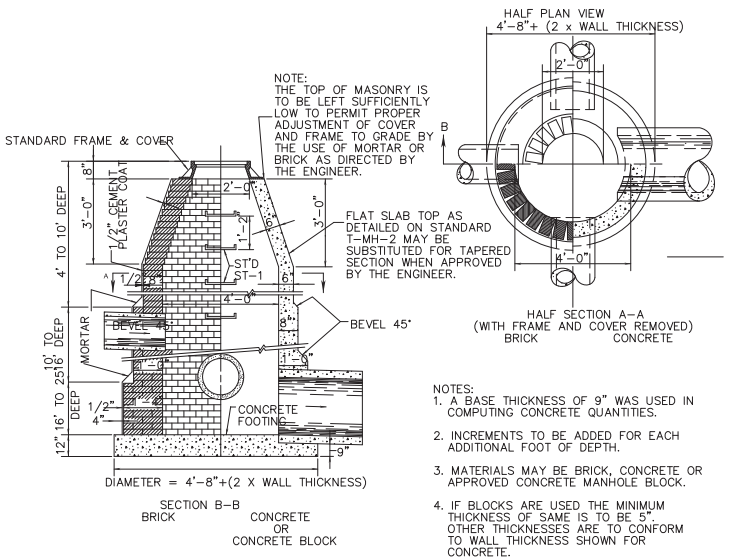


STANDARD MANHOLE FRAME & COVER

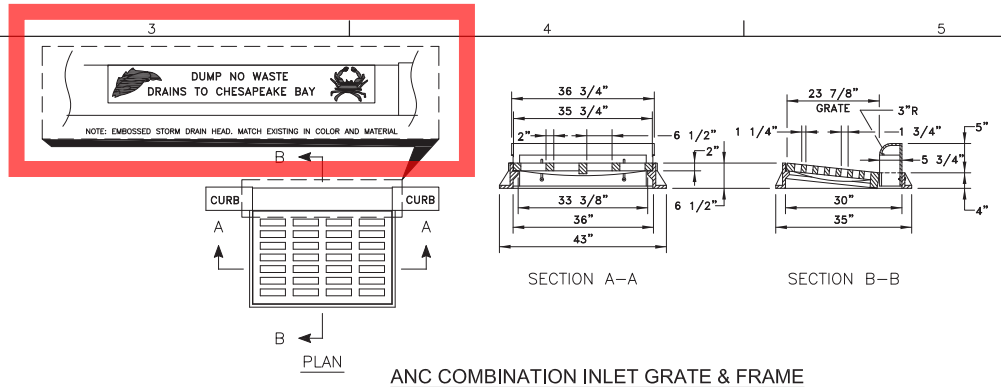
NOT TO SCALE



NOTES:
1. A BASE THICKNESS OF 9" WAS USED IN COMPUTING CONCRETE QUANTITIES.
2. INCREMENTS TO BE ADDED FOR EACH ADDITIONAL FOOT OF DEPTH.
3. MATERIALS MAY BE BRICK, CONCRETE OR APPROVED CONCRETE MANHOLE BLOCK.
4. IF BLOCKS ARE USED THE MINIMUM THICKNESS OF SAME IS TO BE 5". OTHER THICKNESSES ARE TO CONFORM TO WALL THICKNESS SHOWN FOR CONCRETE.
5. ALL CONCRETE TO BE CLASS A3.

MANHOLE FOR 12"- 48" PIPE CULVERTS

NOT TO SCALE



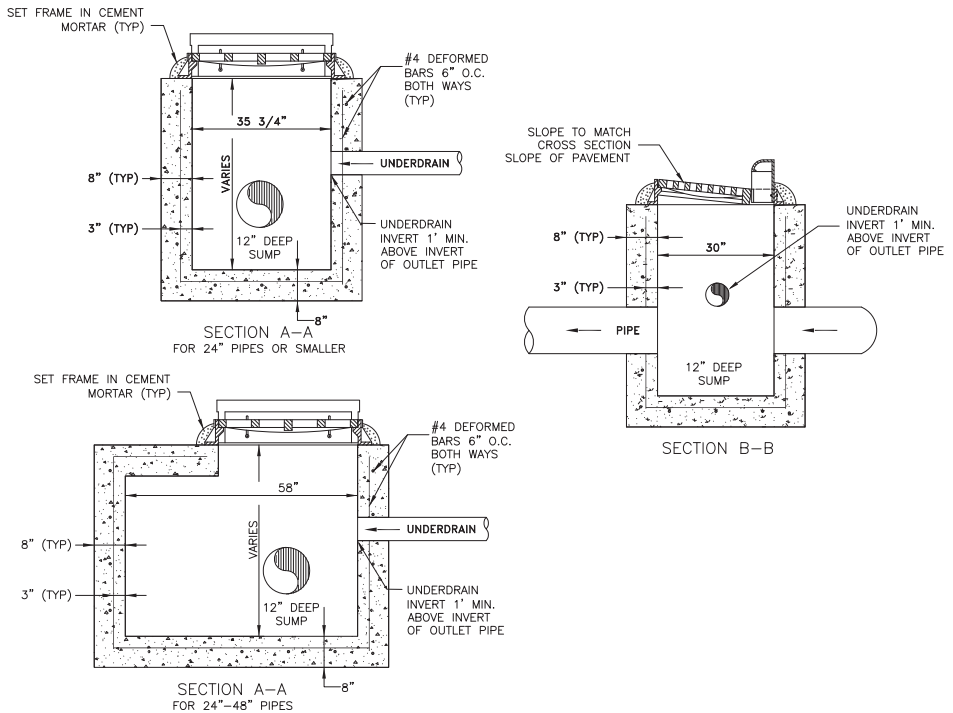
ANC COMBINATION INLET GRATE & FRAME

NOT TO SCALE

NOTES:

1. ALL NEW COMBINATION INLETS SHALL BE ENVIRONMENTALLY FRIENDLY WITH EMBOSSED MESSAGES AND IMAGE OF FISH (EMBOSSED) UPON CASTING. MESSAGES SHALL READ "DUMP NO WASTE" AND "DRAINS TO WATERWAYS". CASTINGS FOR COMBINATION INLETS SHALL BE SIMILAR TO EAST JORDAN FOUNDRY PRODUCT NO. 00703041C12, RATED FOR HEAVY DUTY TRAFFIC AND CONFORMS TO ASTM A48 CERTIFICATION. MATERIALS FOR FRAME, GRATE AND HOOD SHALL BE PAINTED BLACK. CONTRACTOR MAY SUBMIT SIMILAR ALTERNATE (WITH EMBOSSED INFO ON CASTING) COMBINATION GRATE AND FRAME FOR EVALUATION FOR USE ON THIS PROJECT.

2. JOINTS (EXPANSION AND CONTRACTION) IN CONCRETE CURBS, GUTTERS, ETC. SHALL BE SEALED WITH SEALANT PER SPECIFICATIONS.



ANC COMBINATION INLET

NOT TO SCALE

US Army Corps of Engineers
Norfolk District

NO.	DESCRIPTION	BY	APP.

DESIGNED: DBR
DRAWN: DBR
CHECKED: CAP
QUALITY: DBR
PROJECT NO.
DRAWING NO.
DATE: 22-JAN-2020
SCALE: AS SHOWN
NORFOLK DISTRICT FILE NO.
SPECIFICATION NO.
PLS SCALE: 1:1
LAST WORKED ON:
File name:

NORFOLK DISTRICT
CORPS OF ENGINEERS
NORFOLK, VIRGINIA

RTA SUBMITTAL
JANUARY 22, 2020

McPHERSON AREA ROAD REPAIRS
ARLINGTON NATIONAL CEMETERY
ARLINGTON, VA

STORM DRAIN DETAILS

SHEET REFERENCE NUMBER
C-504
SHEET 61 OF 78

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Appendix A-4 - Social Media Posts

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Arlington National Cemetery · Follow
April 9 ·

Join Arlington National Cemetery for our Spring Horticulture Tours taking place every Friday through May 9. See below for upcoming topics, as well as a link to additional information and specific times.

Link: https://www.arlingtoncemetery.mil/.../Spring-2025...

Friday, April 11: Plant Health Care Tour
Friday, April 18: Landscape and Integrated Pest Management Tour
Friday, April 25: Memorial Arboretum Walking Tour: Arbor Day
Friday, May 2: Turf and Trees of Arlington National Cemetery
Friday, May 9: Memorial Arboretum Walking Tour

(U.S. Army Video by Daryl Vaca / Arlington National Cemetery)

1.3K 99 comments 127 shares

Like Comment Share

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Appendix A-5 - Tour Announcements

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Fall Horticulture Tours

9/9/2024

Join us to celebrate fall's splendor and learn about Arlington National Cemetery's Memorial Arboretum (https://www.arlingtoncemetery.mil/Explore/Welcome-Center)! All tours are free and open to the public; no registration is required.

Instructions for all tours:

- Meet at the Welcome Center (https://www.arlingtoncemetery.mil/Explore/Welcome-Center) Information Desk.
- Wear sturdy shoes and consider bringing a bottle of water.
- Please arrive early to pass through security (https://www.arlingtoncemetery.mil/Visit/Security).
- Tours may be cancelled for inclement weather.

Memorial Arboretum Walking Tour

Friday, Oct. 4, 2024, 9 a.m. to 11 a.m.

Come see the trees of Arlington at the peak of their autumn splendor! The vibrant reds, oranges, yellows and russets of over 300 species of trees at ANC are a must-see for anyone visiting in the autumn.

On this tour, you will learn about the cemetery's Memorial Arboretum (https://www.arlingtoncemetery.mil/Explore/Welcome-Center), a Level III Accredited Arboretum. You'll gain insight into ANC's urban forestry program, extensive tree collection (https://www.arlingtoncemetery.mil/Explore/Memorial-Arboretum-and-Horticulture/Trees) and State Champion trees. The overall horticulture program, and the variety of techniques used to create some of the most breathtaking formal and informal landscapes and gardens, will also be highlighted.

Memorial Arboretum Shrub and Perennial Tour

Friday, Oct. 11, 2024, 9 a.m. to 11 a.m.

Join us for a fall shrub and perennial tour at the historic, 639 acre Arlington National Cemetery Memorial Arboretum Grounds—an experience that combines the beauty and serenity of nature amidst the hallowed grounds of our nation's most revered cemetery.

On this tour, the horticulturist will provide engaging commentary on the carefully curated shrubs and perennials that enrich the cemetery's landscape. You'll have a chance to marvel at the vibrant colors and textures of the fall season. This tour will undoubtedly leave you with a newfound appreciation for the well-manicured beauty of this hallowed ground.

Memorial Arboretum Fall Color Tour

Friday, Oct. 18, 2024, 9 a.m. to 11 a.m.

Come see the trees of Arlington at the peak of their autumn splendor! The vibrant reds, oranges, yellows and russets of over 300 species of trees at ANC are a must-see for anyone visiting in the autumn.

On this tour, you will learn about the cemetery's Memorial Arboretum (https://www.arlingtoncemetery.mil/Explore/Welcome-Center), a Level III Accredited Arboretum. You'll gain insight into ANC's urban forestry program, extensive tree collection (https://www.arlingtoncemetery.mil/Explore/Memorial-Arboretum-and-Horticulture/Trees) and State Champion trees. The overall horticulture program, and the variety of techniques used to create some of the most breathtaking formal and informal landscapes and gardens, will also be highlighted.

Plant Health Care Tour

Friday ,Oct. 25, 2024, 9 a.m to 11 a.m.

Join us on an enlightening Plant Health Care tour at the historic Arlington National Cemetery during the beautiful fall season. This unique tour offers an opportunity to appreciate nature's splendor amidst the hallowed grounds of our nation's most revered cemetery.

Our knowledgeable guide will lead you through the vibrant foliage, offering insights into the diverse tree and plant species that adorn the cemetery. Learn about the essential role of plant health care in maintaining these natural treasures, including proper pruning techniques, disease management and soil

nutrition.

This tour is not only a feast for the eyes, but also a learning experience. Understand the strategies implemented to protect these trees from pests, diseases and environmental stressors.

Memorial Arboretum Shrub and Perennial Tour

Friday Nov. 1, 2024, 10 a.m. to noon

Join us for a fall shrub and perennial tour at the historic, 639 acre Arlington National Cemetery Memorial Arboretum (https://www.arlingtoncemetery.mil/Explore/Welcome-Center) Grounds—an experience that combines the beauty and serenity of nature amidst the hallowed grounds of our nation's most revered cemetery.

On this tour, the horticulturist will provide engaging commentary on the carefully curated shrubs and perennials that enrich the cemetery's landscape. You'll have a chance to marvel at the vibrant colors and textures of the fall season. This tour will undoubtedly leave you with a newfound appreciation for the well-manicured beauty of this hallowed ground.

To learn more about Memorial Arboretum and horticulture at Arlington National Cemetery, explore our education materials!

- Memorial Arboretum (https://education.arlingtoncemetery.mil/Themes/Memorial-Arboretum)
- The Environment at ANC (https://education.arlingtoncemetery.mil/Themes/Environment-at-ANC)

Spring 2025 Horticulture Tours

2/10/2025

Arlington National Cemetery is pleased to announce our annual series of spring horticulture tours. All are free and open to the public; no registration is required.

Memorial Arboretum Walking Tour

Friday, March 28

9 a.m. to 11 a.m.

Come see the trees of Arlington at the peak of their spring splendor! The vibrant reds, yellows, and pinks of the blooms of over 300 species of trees at ANC are a must see for anyone visiting in the spring.

On this tour, you will learn about the cemetery's Memorial Arboretum (https://www.arlingtoncemetery.mil/Explore-the-Cemetery/Memorial-Arboretum-and-Horticulture/Welcome), a Level III Accredited Arboretum. You'll gain insight into the urban forestry program, extensive tree collection and State Champion trees. ANC's overall horticulture program and the variety of techniques used to create some of the most breathtaking formal and informal landscapes and gardens will also be highlighted.

- Meet at the Welcome Center Information Desk.
- Wear sturdy shoes and consider bringing a bottle of water.
- Tour may be cancelled for inclement weather.

Memorial Arboretum Spring Native Plant Tour

Friday, April 4

10 a.m. to noon

Come out and get inspired by the many native plants, rain gardens and tough urban trees that enhance Arlington National Cemetery's Memorial Arboretum (https://www.arlingtoncemetery.mil/Explore-the-Cemetery/Memorial-Arboretum-and-Horticulture/Welcome).

Learn firsthand about some of best performing native plants, how they support our native wildlife and are easy to maintain – all in celebration of Earth Day!

- Meet at the Welcome Center Information Desk.
- **This tour will involve considerable walking.**
- Wear sturdy shoes and consider bringing a bottle of water.
- Tour may be cancelled for inclement weather.

Plant Health Care Tour

Friday, April 11

9 a.m. to 11 a.m.

Join us on an enlightening plant health care tour! This unique tour offers an opportunity to appreciate nature's splendor amidst the hallowed grounds of our nation's most revered cemetery.

Learn about the essential role of plant health care in maintaining these natural treasures, including proper pruning techniques, disease management and soil nutrition.

- Meet at the Welcome Center Information Desk.
- Wear sturdy shoes and consider bringing a bottle of water.
- Tour may be cancelled for inclement weather.

Landscape & Integrated Pest Management Tour

Friday, April 18

10 a.m. to noon

Join Arlington’s horticulturist and plant health care specialist as we walk the arboretum grounds.We’ll explore the vast plant collection that comprises the cemetery’s Memorial Arboretum (https://www.arlingtoncemetery.mil/Explore-the-Cemetery/Memorial-Arboretum-and-Horticulture/Welcome), a Level III Certified Arboretum.

This tour is perfect for those who want to gain insight into the ANC horticulture program. The staff will share pointers on how plant varieties are chosen and monitored for health care.

- Meet at the Welcome Center Information Desk.
- Wear sturdy shoes and consider bringing a bottle of water.
- Tour may be cancelled for inclement weather.

Memorial Arboretum Walking Tour: Arbor Day

Friday, April 25

9 a.m. to 11:30 a.m.

Come see the trees of Arlington at the peak of their spring splendor! The vibrant reds, yellows and pinks of the blooms of over 300 species of trees at ANC are a must-see for anyone visiting in the spring.

On this tour, you will learn about the cemetery's Memorial Arboretum, a Level III Accredited Arboretum. You'll gain insight into the urban forestry program, extensive tree collection and State Champion trees. The overall horticulture program and the variety of techniques used to create some of the most breathtaking formal and informal landscapes and gardens will also be highlighted.

- Meet at the Welcome Center Information Desk.
- Wear sturdy shoes and consider bringing a bottle of water.
- Tour may be cancelled for inclement weather.

Turf and Trees of Arlington National Cemetery

Friday, May 2

9 a.m. to 11 a.m.

Trees and turf grass are the key components that make up Arlington’s iconic visual character. On this tour, ANC’s turf management specialist will discuss the challenges of taking care of 575 acres of established turf, which incorporates over 9,000 majestic trees on the grounds.

Learn how each require different horticultural practices and how ANC mindfully maneuvers between caring for the turf and our beloved trees — as they often require different methods of care.

- Meet at the Welcome Center Information Desk.
- Wear sturdy shoes and consider bringing a bottle of water.
- Tour may be cancelled for inclement weather.

Memorial Arboretum Walking Tour

Friday, May 9

9 a.m. to 11 a.m.

Come see the trees of Arlington at the peak of their spring splendor! The vibrant reds, yellows and pinks of the blooms of more than 300 species of trees at ANC are a must-see for anyone visiting in the spring.

On this tour, you will learn about the cemetery's Memorial Arboretum (https://www.arlingtoncemetery.mil/Explore-the-Cemetery/Memorial-Arboretum-and-Horticulture/Welcome), a Level III Accredited Arboretum. You'll gain insight into the urban forestry

program, extensive tree collection and State Champion trees. The overall horticulture program and the variety of techniques used to create some of the most breathtaking formal and informal landscapes and gardens will also be highlighted.

- Meet at the Welcome Center Information Desk.
- Wear sturdy shoes and consider bringing a bottle of water.
- Tour may be cancelled for inclement weather.

Learn More about Horticulture at Arlington National Cemetery!

► Education Program: Memorial Arboretum (https://education.arlingtoncemetery.mil/Themes/Memorial-Arboretum)

► Education Program: The Environment at ANC (https://education.arlingtoncemetery.mil/Themes/Environment-at-ANC)

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Appendix B

Public Involvement and Participation Supporting Documentation

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LESSON PLAN:
DESIGNING A CEMETERY SECTION

High school (9-12)

OVERVIEW

In this lesson, students will discuss the impacts of human activity on watersheds and biodiversity, through the lens of landscape management and design at Arlington National Cemetery. Students will have the opportunity to plan a new section of the cemetery using a menu of options related to plantings, stormwater management, parking lots and walkways, fertilizer and pesticide. As they make their choices, students will be asked to consider the needs of the environment, the interests of cemetery visitors, and a budget, reflecting real-world challenges faced by Arlington National Cemetery administration.

Resources include a PowerPoint, student packet, student worksheets, reflection sheet and grading rubric.

Estimated time: 2 class periods (90-120 minutes) with some homework

STANDARDS

Content standards vary by state. This lesson can be used to teach the following state standards and similar wording may be found in your state standards.

AP Environmental Science Learning Objectives:

- STB-1.B: Describe methods for mitigating problems related to urban runoff.
- STB-3.B: Describe the impacts of human activities on aquatic ecosystems.
- STB-3.F: Explain the environmental effects of excessive use of fertilizers and detergents on aquatic ecosystems.
- EIN-4.C: Explain how human activities affect biodiversity and strategies to combat the problem.

Virginia Environmental Science Course Content and Process Guidelines:

The student will investigate and understand the human impact on our environment. Key content includes

- Population ecology, carrying capacity, human population dynamics, impacts of population growth advantages and disadvantages of balancing short term interests with long term welfare of society;
- **individual activities and decisions can have an impact on the environment;**
- **people impact their environment through the use of natural resources to include how agriculture, forestry, ranching, mining, urbanization, transportation, and fishing impact the land, water, air, and organisms; and**

- the allocation of state and federal lands.

The student will investigate and understand civic responsibility and environmental policies. Key content includes

- consumer choices in Virginia impacts jobs, resources, pollution, and waste here and around the world;
- **political, legal, social, and economic decisions may affect global and local ecosystems;**
- the impact of media on public opinion and public policy;
- individuals and interest groups influence public policy;
- **cost-benefit analysis and trade-offs in conservation policy;** and
- compare methods used to protect the environment by local, state, national, and international governments and organizations

LEARNING OBJECTIVES

- Students will design a section of Arlington National Cemetery using a provided collection of options that demonstrates balance in the needs of the environment and interests of visitors.
- Students will write a short reflection critiquing and justifying their choices and the impact they would have on the environment.

RESOURCES NEEDED

- PowerPoint
- Student packet (1 per student)
- "My Section Design" worksheet (1 per student)
- Graph paper worksheet (1 per student)
- "Designing a Cemetery Section Reflection" sheet (1 per student)

LESSON ACTIVITIES

Introduction: 5-10 minutes

- Prime students with a quick discussion: The United States has rules and regulations in place to protect the environment, and when companies or organizations develop new pieces of land they have to abide by those rules. Based on other concepts we've discussed in class, what are some things you would have to consider when developing land? *Responses will vary, but encourage students to consider impacts on the watershed, biodiversity and climate change.*

Class Lecture: 10-15 minutes

- Slide 2: Environmental Concerns at ANC
    - Looking at this satellite map of Arlington National Cemetery and pictures of its grounds, what do you think might be some environmental concerns there? *Responses will vary*
        - Introduce Arlington National Cemetery with the following information, as necessary:
            - Operated by the U.S. Army since 1864

- Located along the Potomac River in northern Virginia
- Over 600 acres and about 400,000 graves of American military service members and their families
- More than 3 million people visit each year

- Slide 3: Operating within Many Requirements
  - Arlington National Cemetery holds a special place in American society, but it is still required to abide by a number of regulations from a variety of entities.
    - Environmental: ANC must abide by applicable environmental protection laws, and the Army even promotes a Sustainable Design and Development Policy, which is meant to balance current needs with the ability for future generations to continue enjoying environmental resources.
    - Historic preservation: As a historic site, ANC is required to preserve historic features
    - Level III Accredited Arboretum: The Morton Arboretum of Lisle, Illinois, accredits arboreta around the world through the ArbNet accreditation program. In 2015, ANC achieved the second of four levels of accreditation by meeting several professional criteria. In 2018, ANC advanced to Level III by demonstrating that it maintains a collection of 500 species of woody plants, presents substantial educational programming, collaborates with other arboreta, and participates in tree science and conservation.
  - In addition to the many regulations, administration at Arlington National Cemetery must consider their mission to honor America's military dead as well as the interests and needs of visitors.
- Slide 4: Horticulture at ANC
  - The Horticulture team at ANC has the job of balancing all these different requirements while they plan, manage, and maintain the landscape at the cemetery. Some ways they are doing this right now:
    - Designing conservation-oriented landscapes that serve an ecological function and are aesthetically pleasing.
    - Creating gardens that thrive without continuous irrigation. Native plants often take center stage in these types of landscapes. Non-invasive, non-natives can fill that niche as well.
    - Selecting trees not only for their aesthetic and wildlife qualities, but also for their disease resistance. This is especially important with dogwood, cherry and crabapple trees, all of which are particularly vulnerable to both diseases and insects.
    - Incorporating rain gardens to reduce nutrient and sediment run-off.
    - Striving for diversity in all plantings — a key factor in sustainable landscapes.

Activity: 10 minutes + homework

- Slide 5: Developing a Cemetery Section

- ANC recently acquired two pieces of land that they are developing into additional cemetery space. In the real world, an entire team would spend years analyzing the land and putting together plans for development, like you can see on the slide. Today, though, you are going to get to put together a plan for a new section all by yourself, just in a class period.

- Slide 6: Instructions
  - Using the Development Options packet, you are going to design a new section of Arlington National Cemetery. Just like in the real world, each option you choose is going to have an impact on the environment and the visitor experience, and it's going to cost money and take up space in the cemetery. You're going to design your section on the piece of graph paper and keep track of your budget, points, and other details on the worksheet. You need to spend between $25,000-$100,000 on your design.
  - Let's look at the options:
    - Plantings: Each planting has a short description of the plant as well as information on whether it is native or nonnative to northern Virginia, the kinds of wildlife it attracts, the seasons it looks best in, and how much water it requires. Each also comes with a price and takes up a certain number of squares on your graph paper.
    - Stormwater Management Systems: You can choose to install stormwater management systems in your section to decrease runoff. Each type will give you a certain number of environment points and visitor points, and also comes with a price and takes up a certain number of squares on your graph paper.
    - Parking Lots: You can choose to build parking lots in your section to make it easier for guests to visit. The type of material you choose for your parking lot will have different effects on the environment and visitor experience, though. Each type will give you a certain number of environment points and visitor points, and also comes with a price and takes up a certain number of squares on your graph paper.
    - Walking Paths: You can choose to build walking paths in your section to make it easier for guests to visit. The type of material you choose for your paths will have different effects on the environment and visitor experience, though. Each type will give you a certain number of environment points and visitor points, and also comes with a price and takes up a certain number of squares on your graph paper.
    - Fertilizer and Pesticide: You can choose to use fertilizer and/or pesticide to decrease the cost of your plantings, but you should consider what you may need to do to make sure they don't negatively impact the watershed…
    - Street Sweeping: You can choose to pay for street sweeping, which reduces the amount of pollutants in stormwater runoff, and adds 10 environment points to each of your parking lots or walking paths.
  - After everyone has completed their designs, we're going to talk about your choices and some additional considerations that could affect your points. Some things to think about:
    - This is a cemetery – does my design leave plenty of space for graves?
    - Is it better to have a variety of plants or all the same? Should they all be native?

- How do your plantings look year-round?
- Is there a balance between things that are good for the watershed and things that are bad for the watershed?
- What do you like to see when visiting a cemetery or park? Would YOU want to visit this section you have designed?

Post-Activity: 20 minutes

- Slide 7: Your Section Designs
  - Survey the class for information such as:
    - Who had the highest environmental score?
    - Who had the highest visitor score?
    - Whose design was most expensive? Least expensive?
    - Whose plantings required the most water? The least amount of water?
    - What was the most popular planting? Why?
- Slide 8: If Your Design Has…
  - You were tasked with trying to keep track of and balance many different factors. In the real world, those factors are constantly shifting and the information you need to make choices is not always packaged nicely for you. So here are some additional considerations:
    - Arlington National Cemetery is, first and foremost, a cemetery, so it is important that there is plenty of space for graves. Subtract your total number of squares used from 2,000 (the number of squares on the graph paper). If your design has more than 1,500 empty squares, give yourself 20 more visitor points. If your design has fewer than 1,000 squares, subtract 20 visitor points.
    - The grounds of Arlington National Cemetery receive little irrigation, so plants must be able to survive on their own in hot summers with little water. If your water total was less than 60, give yourself 20 more environment and 10 visitor points. If your water total was more than 80, you lose 20 environment and 10 visitor points.
    - Horticulturists at ANC strive for a diversity in planting. If you have more than 10 types of different plantings, give yourself 20 more environment points. If you have fewer than 5 types of different plantings, you lose 20 environment points.
    - ANC horticulturists also try to choose a mix of plantings that will look good year-round. If you have at least five plantings in each season, give yourself 10 more visitor points.
    - Native plants are well-adapted to thrive in the area and support native wildlife populations. If you have at least 10 native plantings, give yourself 10 more environment points.
    - It is important that plants at ANC support local wildlife populations. For each insect-, bird-, or mammal-friendly planting, give yourself 1 more environment point.

        - Fertilizer and pesticides can help plants grow faster and make maintenance cheaper, but if the chemicals in them are not filtered out of runoff they can be harmful to the watershed. This is why stormwater management systems are important, especially if you use fertilizer and/or pesticide. Look at your total number of spaces used for stormwater management.
            - If you used organic fertilizer and the number is less than 50, you lose 30 environment points.
            - If you used chemical fertilizer and the number is less than 80, you lose 30 environment points.
            - If you used pesticide and the number is less than 60, you lose 30 environment points.
            - If you used pesticide and organic fertilizer and the number is less than 110, or if you used pesticide and chemical fertilizer and the number is less than 140, you lose 60 environment points.
    - Ask the class if anyone's points drastically changed and lead a discussion about the experience of making these various development choices.

Reflection Activity: 20-30 minutes

- Have students complete the "Designing a Cemetery Section Reflection," a 300-500 word essay describing:
    - Which factors were most important to you while you made your section design choices,
    - The impact your choices could have on biodiversity in the local area, and
    - The impact your choices could have on aquatic ecosystems.
- If applicable, provide students a vocabulary list of words you would like them to incorporate into their essays.

EXTENSIONS ACTIVITIES

- Share pictures of your students' section designs with us on Facebook, Twitter, and Instagram. Tag Arlington National Cemetery using @ArlingtonNatl and hashtags #ANCEducation and #ANCEnvironment.
- Take a look at the environmental assessment prepared by the Army Corps of Engineers for Arlington National Cemetery's Southern Expansion project. Notice the types of impacts considered and solutions proposed. The document is available to the public here: https://www.arlingtoncemetery.mil/Portals/0/Docs/Public-Notices/Final-EA-ANC-Southern-Expansion.pdf
- Check out other Arlington National Cemetery public notices and environmental reports here: https://www.arlingtoncemetery.mil/About/Policies-and-Public-Notices/Public-Notices

PLANNING A VISIT TO ARLINGTON NATIONAL CEMETERY?

You can prepare to notice and appreciate the horticulture and conservation efforts at Arlington National Cemetery by checking out the Memorial Arboretum web page: https://www.arlingtoncemetery.mil/Explore-the-Cemetery/Memorial-Arboretum-and-Horticulture/Welcome

There is also a horticulture-specific walking tour available on the ANC Education website: https://education.arlingtoncemetery.mil/

My Section Design

Use this worksheet to keep track of the development options you chose

Organic Fertilizer: (Yes) or No
Decrease plantings price by 10%

Chemical Fertilizer: Yes or (No)
Decrease planting price by 20%

Pesticide: Yes or (No)
Decrease plantings price by 20%

Street sweeping: (Yes) or No
Add $1,000 to your total price and 10 environment points to each parking lot or walking path

Stormwater Management Systems

Total number of spaces used: 20 + 40 + 32 = 62

Rain Gardens: (1) 2 3 4 5 6 7 8 9
Total price: 5000
Total environment points: 50
Total visitor points: 20

Bioswales: 1 (2) 3 4 5 6 7 8 9
Total price: 4000
Total environment points: 100
Total visitor points: 20

Stormwater Filtration Devices: (1) 2 3 4 5
Total price: 8000
Total environment points: 200
Total visitor points: 0

Parking Lots

Total number of spaces used: 98

Gravel: 1 2 3 4 5
Street-sweeping: Yes or No
Total price:
Total environment points:
Total visitor points:

Asphalt concrete: (1) 2 3 4 5
Street-sweeping: (Yes) or No
Total price: 20,000
Total environment points: 25+10
Total visitor points: 150

Permeable pavement: 1 2 3 4 5
Street-sweeping: Yes or No
Total price:
Total environment points:
Total visitor points:

Walking Paths

Total number of spaces used: 40

Gravel: 1 2 3 4 5 6 7 8 9
Street-sweeping: Yes or No
Total price:
Total environment points:
Total visitor points:

Concrete: 1 2 3 4 5 6 7 8 9
Street-sweeping: Yes or No
Total price:
Total environment points:
Total visitor points:

Permeable pavement: 1 2 3 (4) 5 6 7 8 9
Street-sweeping: (Yes) or No
Total price: 12,000
Total environment points: 80 + 40 = 120
Total visitor points: 160

Total environment points: 50+100+200+35+120 = 505 + 20 (Native) + 10 + 20 + 12 + 10 = **577**

Total visitor points: 20+20+150+160 = 350 + 20 + 10 + 10 (Water) = **410** (Wildlife)

Total price: (1040 − 104) + 1000 (Street sweeping) + 5000 + 4000 + 8000 + 20,000 + 12,000 = **50,936**
(squares, water, seasons)

Total number of spaces used: 114 + 62 + 98 + 40 = **314**
(Plantings, fertilizer)

My Section Design

Use this worksheet to keep track of the development options you chose

Plantings

Total native plantings: 1+5+2+2+4+1+1=16
Total nonnative plantings: 2+6=8
Total bug-friendly plantings: 1+5+6+2+4+1+1=20
Total bird-friendly plantings: 1+2+5+2+1+1=12
Total mammal-friendly plantings: 2+5+2+1=10

Total spring plantings: 1+2+5+6+2+2+4+1+1=24
Total summer plantings: 1+2+5+6+2+2+4+1+1=24
Total fall plantings: 1+2+5+6+2+1+1=18
Total winter plantings: 1+2+6=9
Total water used: 2+8+15+6+2+8+8+3+3=55

American Holly: (1) 2 3 4 5
Total water: 2
Total price: 80
Total # spaces: 9

Douglas-fir: 1 (2) 3 4 5
Total water: 8
Total price: 140
Total # spaces: 32

Flowering Dogwood: 1 2 3 4 (5)
Total water: 15
Total price: 250
Total # spaces: 20

Kwanzan Cherry: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Moss Phlox: 1 (2) 3 4 5 6 7 8 9
Total water: 2
Total price: 20
Total # spaces: 2

Smooth Hydrangea: 1 2 3 (4) 5
Total water: 8
Total price: 160
Total # spaces: 16

White Oak: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Basswood: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Dwarf Fothergilla: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Gro-low Sumac: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Leyland Cypress: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Red Maple: 1 (2) 3 4 5
Total water: 8
Total price: 200
Total # spaces: 18

Tulip Poplar: (1) 2 3 4 5
Total water: 3
Total price: 110
Total # spaces: 9

Yoshino Cherry: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Common Boxwood: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Eastern Redbud: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Japanese Red Maple: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Liriope: 1 2 3 4 5 (6) 7 8 9
Total water: 6
Total price: 60
Total # spaces: 6

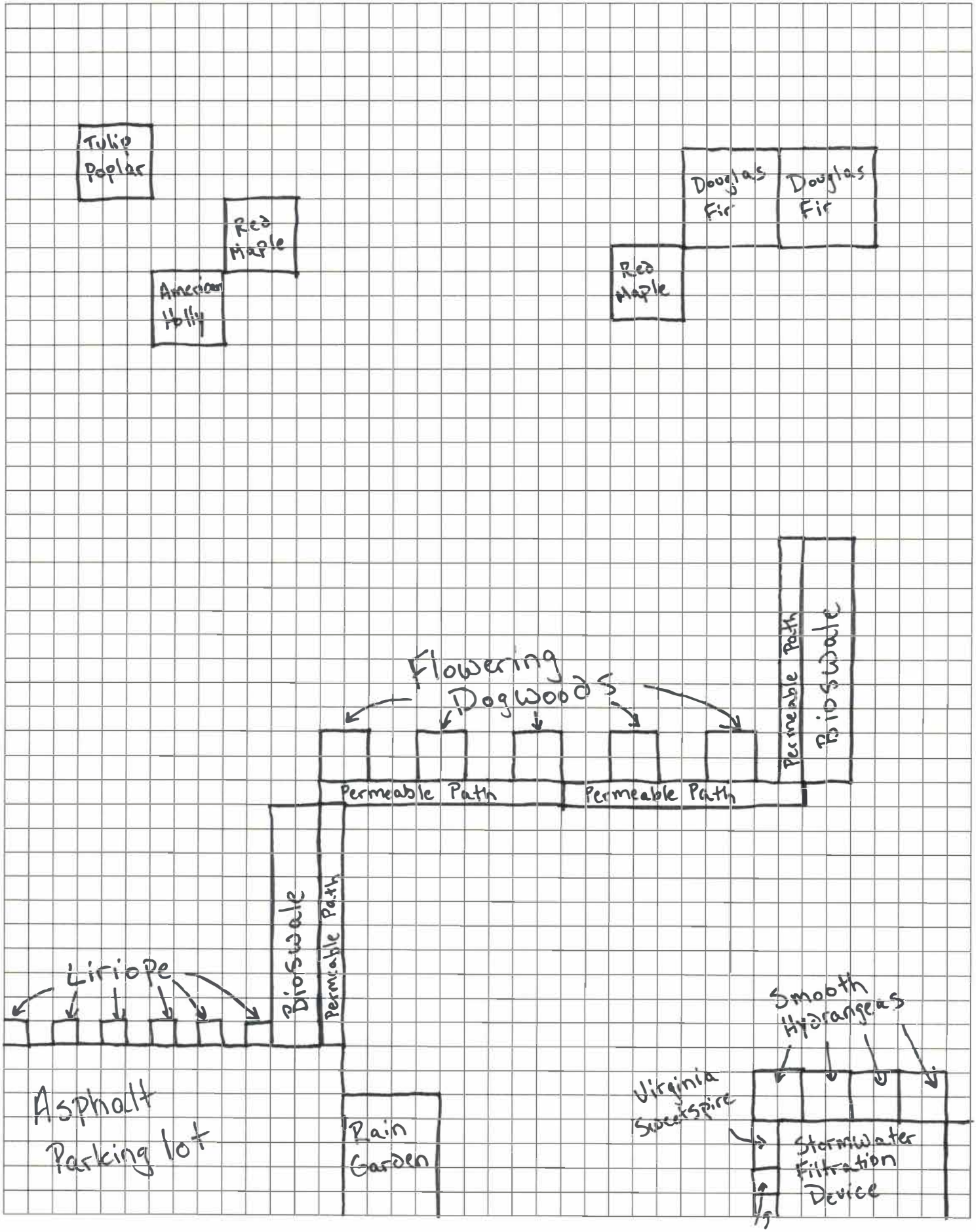
River Birch: 1 2 3 4 5
Total water:
Total price:
Total # spaces:

Virginia Sweetspire: (1) 2 3 4 5
Total water: 3
Total price: 20
Total # spaces: 2

Total Plantings Price:
80+140+250+60+20+200+160+110+20
$1040

Total Plantings Space:
9+32+20+6+2+18+16+9+2=114

Name:



MY SECTION DESIGN

CEMETERY SECTION DESIGN RUBRIC

Use this rubric to assess student achievement of expectations.

Criteria	1	2	3	4	Feedback
Student drew and labeled their section design.					
Student recorded their design choices and tracked their points earned.					
Student made choices that reflect they considered multiple competing factors – biodiversity, sustainability, the interests of visitors, and budget.					
Student appropriately described the impact their choices could have on biodiversity.					
Student appropriately described the impact their choices could have on aquatic ecosystems.					
	Total:				

1 = criteria not met; 2 = criteria partially met; 3 = criteria met; 4 = exceeds expectations

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IMAGES

Slide 1: Elizabeth Fraser, Spring at ANC 2021, March 29, 2021, Arlington National Cemetery. https://flic.kr/p/2kQ9ioV

Slide 2: Elizabeth Fraser, Aerial Photography of Arlington National Cemetery, April 18, 2018, Arlington National Cemetery, https://flic.kr/p/24ihiof

Slide 2: Elizabeth Fraser, Memorial Day Weekend 2020, May 23, 2020, Arlington National Cemetery, https://flic.kr/p/2j5hCSu

Slide 2: Elizabeth Fraser, Section 62, April 27, 2020, Arlington National Cemetery, https://flic.kr/p/2iVfm4K

Slide 2: Google Earth Pro 9.139.0.0 (October 8, 2020), Arlington National Cemetery, Arlington, VA. 38*52'48"N 77*03'03"W, Eye alt 600m. Accessed June 28, 2021. http://www.google.com/earth/index.html

Slide 4: Elizabeth Fraser, Fall foliage in Section 21, October 28, 2020, Arlington National Cemetery, https://flic.kr/p/2k14of7

Slide 4: Elizabeth Fraser, Rain gardens at ANC, July 29, 2019, Arlington National Cemetery, https://flic.kr/p/2gNky6X

Slide 4: Elizabeth Fraser, Spring 2020, April 8, 2020, Arlington National Cemetery, https://flic.kr/p/2iNZ1P7

Slide 4: Elizabeth Fraser, Winter Horticulture Highlights, March 2, 2021, Arlington National Cemetery, https://flic.kr/p/2kGt326

Slide 5: Current Design – Fall 2019, December 4, 2019, National Capital Planning Commission, https://www.ncpc.gov/docs/actions/2019December/8009_Arlington_National_Cemetery_Southern_Expansion_and_US_Air_Force_Memorial_Modification_Staff_Report_Dec2019.pdf

Slide 5: Figure 1-2 Southern Expansion Project Site, August 2019, Arlington National Cemetery, https://www.arlingtoncemetery.mil/Portals/0/Docs/Public-Notices/Final-EA-ANC-Southern-Expansion.pdf

Slide 5: Site Section, June 2013, National Capital Planning Commission, https://www.ncpc.gov/files/Arlington_National_Cemetery_Arlington_County_Virginia_Millennium_Project_Submission_Materials_7457_Jun2013.pdf

Appendix C

Illicit Discharge Detection and Elimination Supporting Documentation

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Appendix C-1 - Inspection Summary Table

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Table 4-1: Summary of October 2024 IDS Results						
ID Number	Date	Time	Flow?	Chlorine Result (mg/L)	Suspected Illicit Discharge?	Notes
MS4 Outfall						
OF8-SEC74	10/28/24	13:00	Yes	None	No	Unable to check water, but could hear flow in the structure.
Interconnections to Adjacent MS4s						
IN1A-SEC52	10/28/24	11:50	Yes	0.02	No	Water was clear, no odor.
IN1B-SEC52	10/28/24	11:40	Yes	0.04	No	Water was clear, no odor. Concrete cracked below outfall (not a new condition).
IN6-PG North	10/28/24	12:48	No	-	-	Small amount of standing water, no flow.
IN7-PG South	10/28/24	12:15	No	-	-	Small amount of standing water, no flow.
IN9-SEC69	10/28/24	13:10	No	-	-	No flow.
IN10-B123	10/28/24	13:30	Yes	0.07	No	Water was clear, no odor.
IN11-SEC8	10/28/24	13:15	No	-	-	No flow.
IN12-SEC29	10/28/24	11:23	No	-	-	Minor erosion on slope above outfall from overland flow.

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Appendix C-2 - Spill Reporting Documentation

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There were no spills during the reporting year.

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Appendix D
Construction Site Stormwater Table

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ARLINGTON NATIONAL CEMETERY
CONSTRUCTION GENERAL PERMITS
1 JULY 2024 - 30 JUNE 2025

PERMIT	CONTRACTOR	PROJECT
VAR10S884	Manhattan Construction Co	ANC Southern Expansion Phase II Operations Complex
VAR10T204	Metro Paving Corp	Road Restoration and Storm Structure Pipe Upgrades
VAR10Q441	Kokosing Construction Co	VA-ST-ANC(1) - Arlington National Cemetery Southern Expansion Defense Access Road

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Appendix E
BMP Inspection Checklists

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Arlington National Cemetery Post-Construction Inspection Checklist				**CHAMBER/MTD/SAND FILTER**
Inspector Name: Quinn Garvey			Date: 10/30/2024	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy, 70			Time since last rainfall: 28 days	
BMP INFORMATION				
BMP Installation Date: 2020			Type: ☐ Pre-Treatment ☒ Storage ☐ Other	
BMP #: INF-1	Location: Section 52		As-Built Plans available: ☐ Yes ☒ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ☒ No			
Pipe or joint breaks or cracks	☐ Yes ☒ No			
Access cover missing, cracked, damaged, or unable to open	☐ Yes ☒ No			
Sediment Level				
Sediment accumulation in forebay	☐ Yes ☐ No ☒ N/A			
Sediment depth on vault floor greater than 15% of diameter or interior depth of vault	☒ Yes ☐ No	Professional	Second chamber full of sediment	
Standing water inside chamber for more than 24 hours after storm	☒ Yes ☐ No	Professional	Water continually refilling BMP.	
Scum line present	☐ Yes ☒ No			
Chamber cracked (cracks wider than ½ inch), collapsed, or bent out of shape	☐ Yes ☒ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ☒ No ☐ N/A			
Sediment on pavement	☐ Yes ☒ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ☒ No ☐ N/A			

Additional Observations or Comments:

No blockages between STC-9 and INF-1.

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	☒ **Yes** ☐ **No**

Arlington National Cemetery **Post-Construction Inspection Checklist**			**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Inspector Name: Aileen Wallace & Quinn Garvey		Date: 11/07/2024	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 81		Time since last rainfall: ~1 month	
BMP INFORMATION			
BMP Installation Date: 2018		Underdrain Present: ☒ Yes ☐ No	
BMP #: MBR-1	Location: Gifford Shelter North	As-Built Plans available: ☐ Yes ☒ No	

ROUTINE MAINTENANCE ACTIVITIES

Activity	Frequency	Completed
Mowing grass filter strips and bioretention turf cover	At least 4 times a year	☒ Yes ☐ No
Spot weeding, erosion repair, trash removal, and mulch raking	Twice during growing season	☒ Yes ☐ No
• Spring visual inspection and cleanup • Supplement mulch to maintain a 3" layer • Prune trees and shrubs	Annually	☒ Yes ☐ No
Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years	☒ Yes ☐ No ☒ Not due
Replace the mulch layer	Every 3 years	☒ Yes ☐ No ☐ Not due

FIELD INSPECTION CHECKLIST

Criteria	Maintenance Required?	ANC or Professional fix	Comments	Date Repaired
Surface				
Vegetation • Vegetation species inconsistent with design specs • Less than 75-90% cover (mulch plus vegetation) • High grass • Dying or dead vegetation • Vegetation killed by salt or winter elements	☐ Yes ☒ No			
Filter Media/Mulch Layer • Too low, too compacted, and/or clogged • Older than 3 years and/or in poor condition • Ponding • Chemicals, fertilizers, oil, grease, trash, debris, sediment, sand • Erosion, exposed soil • Topsoil in poor condition	☐ Yes ☒ No			

Arlington National Cemetery **Post-Construction Inspection Checklist**				**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Pre-treatment • Trash, sediment, debris, oil, grease • Clogging, standing water • Odor, algae, floating vegetation • Dead vegetation or exposed soil	☐ Yes ☒ No			
Outlet				
Erosion or sediment build-up	☐ Yes ☒ No			
Grate or spillway condition	☐ Yes ☒ No			
Proper Drainage, Underdrains and Observation Wells				
Does not dewater between storms or ponding for more than 48 hours after rain event	☐ Yes ☒ No			
Clogged underdrains	☐ Yes ☒ No			
Observation well caps present	☐ Yes ☒ No ☐ N/A			
Inlets				
Sediment build-up, trash, debris, or erosion at curb cuts, pavement edges, and/or bypassing	☐ Yes ☒ No			
Inflow hindered by vegetation	☐ Yes ☒ No			
Drainage and Adjacent Upstream Areas				
Adequate vegetation	☐ Yes ☒ No			
Trash, debris, bare soil, signs of scour, oil, grease, and/or erosion	☐ Yes ☒ No			
Additional Observations or Comments: Standing water in outflow pipe, vegetation better than MBR-2				
ANNUAL REPORTING				
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)				**☐ Yes ☒ No**

Arlington National Cemetery **Post-Construction Inspection Checklist**			**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Inspector Name: Aileen Wallace & Quinn Garvey		Date: 11/07/2024	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 81		Time since last rainfall: ~1 month	
BMP INFORMATION			
BMP Installation Date: 2018		Underdrain Present: ☒ Yes ☐ No	
BMP #: MBR-2	Location: Gifford Shelter South	As-Built Plans available: ☐ Yes ☒ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
Mowing grass filter strips and bioretention turf cover	At least 4 times a year	☒ Yes ☐ No
Spot weeding, erosion repair, trash removal, and mulch raking	Twice during growing season	☒ Yes ☐ No
• Spring visual inspection and cleanup • Supplement mulch to maintain a 3" layer • Prune trees and shrubs	Annually	☒ Yes ☐ No
Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years	☒ Yes ☐ No ☐ Not due
Replace the mulch layer	Every 3 years	☒ Yes ☐ No ☐ Not due

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Surface				
Vegetation • Vegetation species inconsistent with design specs • Less than 75-90% cover (mulch plus vegetation) • High grass • Dying or dead vegetation • Vegetation killed by salt or winter elements	☐ Yes ☒ No		Lack of water, plants/vegetation look like they're dying	
Filter Media/Mulch Layer • Too low, too compacted, and/or clogged • Older than 3 years and/or in poor condition • Ponding • Chemicals, fertilizers, oil, grease, trash, debris, sediment, sand • Erosion, exposed soil • Topsoil in poor condition	☐ Yes ☒ No			

Arlington National Cemetery **Post-Construction Inspection Checklist**				**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Pre-treatment • Trash, sediment, debris, oil, grease • Clogging, standing water • Odor, algae, floating vegetation • Dead vegetation or exposed soil	☐ Yes ☒ No			
Outlet				
Erosion or sediment build-up	☐ Yes ☒ No			
Grate or spillway condition	☐ Yes ☒ No			
Proper Drainage, Underdrains and Observation Wells				
Does not dewater between storms or ponding for more than 48 hours after rain event	☐ Yes ☒ No			
Clogged underdrains	☐ Yes ☒ No			
Observation well caps present	☐ Yes ☐ No ☒ N/A			
Inlets				
Sediment build-up, trash, debris, or erosion at curb cuts, pavement edges, and/or bypassing	☐ Yes ☒ No			
Inflow hindered by vegetation	☐ Yes ☒ No			
Drainage and Adjacent Upstream Areas				
Adequate vegetation	☐ Yes ☒ No			
Trash, debris, bare soil, signs of scour, oil, grease, and/or erosion	☐ Yes ☒ No			
Additional Observations or Comments:				
ANNUAL REPORTING				
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)				**☐ Yes ☒ No**

Arlington National Cemetery Post-Construction Inspection Checklist			PERMEABLE and POROUS PAVEMENT
Inspector Name: Renee Lavinsky		Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy, 60		Time since last rainfall: 1 hour	
BMP INFORMATION			
BMP Installation Date: 2012		Underdrain Present: ☐ Yes ▣ No	
BMP #: PP-1	Location: Sidewalk along Eisenhower Dr	As-Built Plans available: ☐ Yes ▣ No	

ROUTINE MAINTENANCE ACTIVITIES

Activity	Frequency	Completed
Dry-weather vacuum sweeping	Annually	▣ Yes ☐ No

FIELD INSPECTION CHECKLIST

Criteria	Maintenance Required?	ANC or Professional fix	Comments	Date Repaired
Surface				
Deterioration (e.g., sinking, spalling, cracking, broken pavers)	☐ Yes ▣ No			
Erosion and/or bare or exposed soil in grid paver areas	☐ Yes ▣ No			
Presence of loose material, sediment deposits, or ponding	☐ Yes ▣ No			
Drainage and Adjacent Upstream Areas				
Vegetation encroachment	☐ Yes ▣ No			
Trash, debris, bare soil, and/or erosion	☐ Yes ▣ No			
Inlets/Outlets				
Erosion	☐ Yes ▣ No ☐ N/A			
Clogged or obstructed	☐ Yes ▣ No ☐ N/A			
Observation Wells				
Caps present	☐ Yes ☐ No ▣ N/A			
Standing water in well (3 days after storm event >½ inch)	☐ Yes ☐ No ▣ N/A			

Additional Observations or Comments:

ANNUAL REPORTING

Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	**☐ Yes ▣ No**

Arlington National Cemetery Post-Construction Inspection Checklist			PERMEABLE and POROUS PAVEMENT
Inspector Name: Aileen Wallace, Quinn Garvey		Date: 11/07/2024	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy, 81		Time since last rainfall: ~1 month	
BMP INFORMATION			
BMP Installation Date: 2014		Underdrain Present: ☐ Yes ▣ No	
BMP #: PP-2	Location: Sidewalk along Megis Dr	As-Built Plans available: ☐ Yes ▣ No	

ROUTINE MAINTENANCE ACTIVITIES

Activity	Frequency	Completed
Dry-weather vacuum sweeping	Annually	▣ Yes ☐ No

FIELD INSPECTION CHECKLIST

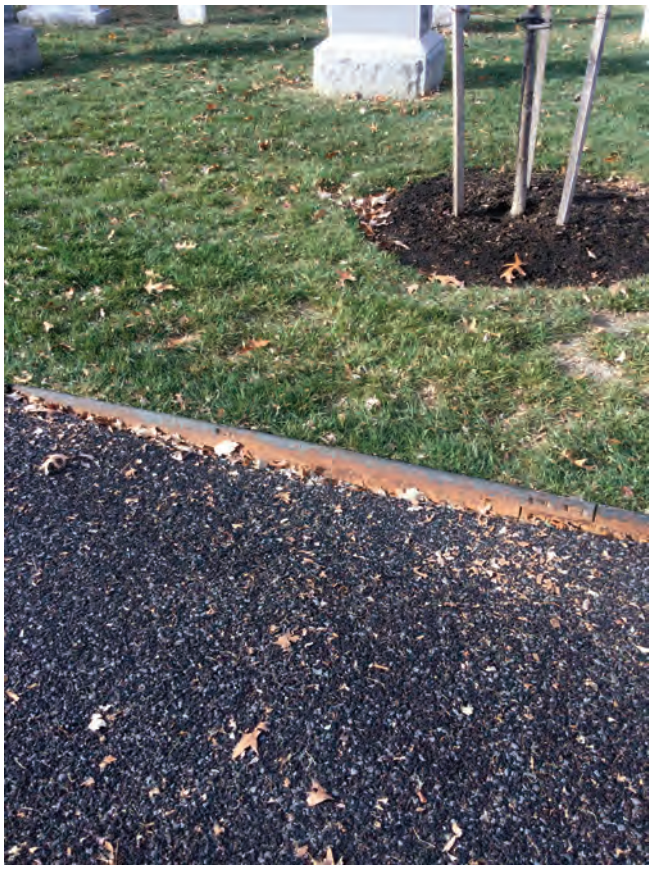
Criteria	Maintenance Required?	ANC or Professional fix	Comments	Date Repaired
Surface				
Deterioration (e.g., sinking, spalling, cracking, broken pavers)	▣ Yes ☐ No	ANC	Sinking spot, undercutting, patched with impermeable surface	
Erosion and/or bare or exposed soil in grid paver areas	☐ Yes ▣ No			
Presence of loose material, sediment deposits, or ponding	☐ Yes ▣ No			
Drainage and Adjacent Upstream Areas				
Vegetation encroachment	☐ Yes ▣ No			
Trash, debris, bare soil, and/or erosion	☐ Yes ▣ No			
Inlets/Outlets				
Erosion	☐ Yes ▣ No ☐ N/A			
Clogged or obstructed	☐ Yes ▣ No ☐ N/A			
Observation Wells				
Caps present	☐ Yes ▣ No ☐ N/A			
Standing water in well (3 days after storm event >½ inch)	☐ Yes ▣ No ☐ N/A			

Additional Observations or Comments:

Permeable surface covered with blacktop

ANNUAL REPORTING

Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	▣ **Yes** ☐ **No**



Arlington National Cemetery Post-Construction Inspection Checklist			PERMEABLE and POROUS PAVEMENT
Inspector Name: Aileen Wallace, Quinn Garvey		Date: 11/07/2024	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 81		Time since last rainfall: ~1 month	
BMP INFORMATION			
BMP Installation Date: 2018		Underdrain Present: ☐ Yes ▣ No	
BMP #: PP-3	Location: Millenium	As-Built Plans available: ☐ Yes ▣ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
Dry-weather vacuum sweeping	Annually	▣ Yes ☐ No

FIELD INSPECTION CHECKLIST

Criteria	Maintenance Required?	ANC or Professional fix	Comments	Date Repaired
Surface				
Deterioration (e.g., sinking, spalling, cracking, broken pavers)	☐ Yes ▣ No			
Erosion and/or bare or exposed soil in grid paver areas	☐ Yes ▣ No			
Presence of loose material, sediment deposits, or ponding	☐ Yes ▣ No			
Drainage and Adjacent Upstream Areas				
Vegetation encroachment	☐ Yes ▣ No			
Trash, debris, bare soil, and/or erosion	☐ Yes ▣ No			
Inlets/Outlets				
Erosion	☐ Yes ▣ No ☐ N/A			
Clogged or obstructed	☐ Yes ▣ No ☐ N/A			
Observation Wells				
Caps present	☐ Yes ▣ No ☐ N/A			
Standing water in well (3 days after storm event >½ inch)	☐ Yes ▣ No ☐ N/A			

Additional Observations or Comments:

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	**☐ Yes ▣ No**

Arlington National Cemetery Post-Construction Inspection Checklist				CHAMBER/MTD/SAND FILTER
Inspector Name: Renee Lavinsky			Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 60			Time since last rainfall: 4 hrs	
BMP INFORMATION				
BMP Installation Date: 1996			Type: ☒ Pre-Treatment ☒ Storage ☐ Other	
BMP #: PT-UTD	Location: Bldg 123		As-Built Plans available: ☐ Yes ☒ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ☒ No			
Pipe or joint breaks or cracks	☐ Yes ☒ No			
Access cover missing, cracked, damaged, or unable to open	☐ Yes ☒ No			
Sediment Level				
Sediment accumulation in forebay	☐ Yes ☐ No ☒ N/A			
Sediment depth on vault floor greater than 15% of diameter or interior depth of vault	☐ Yes ☒ No			
Standing water inside chamber for more than 24 hours after storm	☒ Yes ☐ No		Water in chamber, as designed	
Scum line present	☒ Yes ☐ No			
Chamber cracked (cracks wider than ½ inch), collapsed, or bent out of shape	☐ Yes ☒ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ☒ No ☐ N/A			
Sediment on pavement	☐ Yes ☒ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ☒ No ☐ N/A			

Additional Observations or Comments:

Full of water, some scum. No debris. Approximately 6 inches of sediment.

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	**☐ Yes ☒ No**

West most chamber

Inside east manhole

Inside east manhole

Arlington National Cemetery **Post-Construction Inspection Checklist**			**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Inspector Name: Aileen Wallace, Quinn Garvey		Date: 11/07/2024	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy, 81		Time since last rainfall: ~1 month	
BMP INFORMATION			
BMP Installation Date: 2012		Underdrain Present: ☒ Yes ☐ No	
BMP #: RG-1	Location: Bldg 123	As-Built Plans available: ☐ Yes ☒ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
Mowing grass filter strips and bioretention turf cover	At least 4 times a year	☒ Yes ☐ No
Spot weeding, erosion repair, trash removal, and mulch raking	Twice during growing season	☒ Yes ☐ No
• Spring visual inspection and cleanup • Supplement mulch to maintain a 3” layer • Prune trees and shrubs	Annually	☒ Yes ☐ No
Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years	☒ Yes ☐ No ☐ Not due
Replace the mulch layer	Every 3 years	☒ Yes ☐ No ☐ Not due

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Surface				
Vegetation • Vegetation species inconsistent with design specs • Less than 75-90% cover (mulch plus vegetation) • High grass • Dying or dead vegetation • Vegetation killed by salt or winter elements	☐ Yes ☒ No			
Filter Media/Mulch Layer • Too low, too compacted, and/or clogged • Older than 3 years and/or in poor condition • Ponding • Chemicals, fertilizers, oil, grease, trash, debris, sediment, sand • Erosion, exposed soil • Topsoil in poor condition	☐ Yes ☒ No		Trash removal	

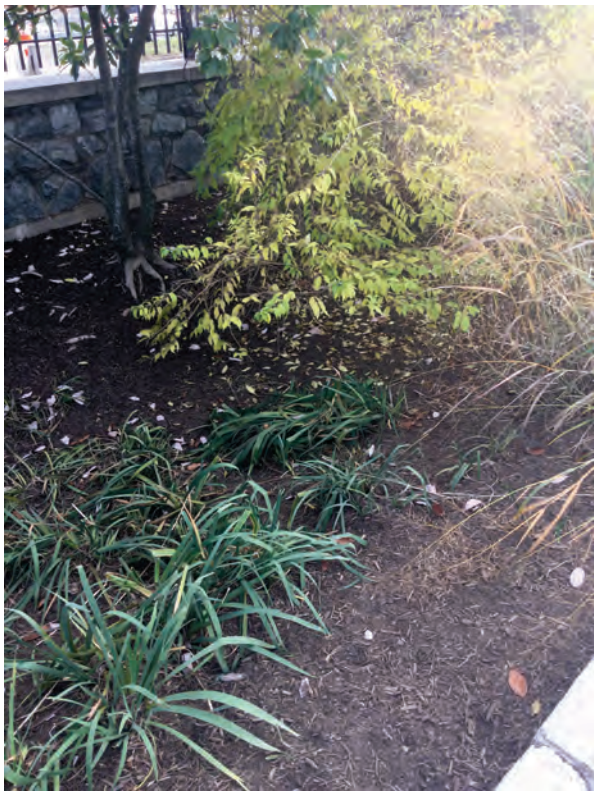
Arlington National Cemetery **Post-Construction Inspection Checklist**				**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Pre-treatment • Trash, sediment, debris, oil, grease • Clogging, standing water • Odor, algae, floating vegetation • Dead vegetation or exposed soil	☐ Yes ▣ No			
Outlet				
Erosion or sediment build-up	☐ Yes ▣ No			
Grate or spillway condition	☐ Yes ▣ No			
Proper Drainage, Underdrains and Observation Wells				
Does not dewater between storms or ponding for more than 48 hours after rain event	☐ Yes ▣ No			
Clogged underdrains	☐ Yes ▣ No			
Observation well caps present	☐ Yes ▣ No ☐ N/A			
Inlets				
Sediment build-up, trash, debris, or erosion at curb cuts, pavement edges, and/or bypassing	☐ Yes ▣ No			
Inflow hindered by vegetation	☐ Yes ▣ No			
Drainage and Adjacent Upstream Areas				
Adequate vegetation	☐ Yes ▣ No			
Trash, debris, bare soil, signs of scour, oil, grease, and/or erosion	☐ Yes ▣ No			
Additional Observations or Comments:				
ANNUAL REPORTING				
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)				**☐ Yes ▣ No**

Arlington National Cemetery **Post-Construction Inspection Checklist**			**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Inspector Name: Aileen Wallace, Quinn Garvey		Date: 11/07/2024	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy, 81		Time since last rainfall: ~1 month	
BMP INFORMATION			
BMP Installation Date: 2012		Underdrain Present: ☒ Yes ☐ No	
BMP #: RG-2	Location: Bldg 123	As-Built Plans available: ☐ Yes ☒ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
Mowing grass filter strips and bioretention turf cover	At least 4 times a year	☒ Yes ☐ No
Spot weeding, erosion repair, trash removal, and mulch raking	Twice during growing season	☒ Yes ☐ No
• Spring visual inspection and cleanup • Supplement mulch to maintain a 3” layer • Prune trees and shrubs	Annually	☒ Yes ☐ No
Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years	☒ Yes ☐ No ☐ Not due
Replace the mulch layer	Every 3 years	☒ Yes ☐ No ☐ Not due

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Surface				
Vegetation • Vegetation species inconsistent with design specs • Less than 75-90% cover (mulch plus vegetation) • High grass • Dying or dead vegetation • Vegetation killed by salt or winter elements	☐ Yes ☒ No			
Filter Media/Mulch Layer • Too low, too compacted, and/or clogged • Older than 3 years and/or in poor condition • Ponding • Chemicals, fertilizers, oil, grease, trash, debris, sediment, sand • Erosion, exposed soil • Topsoil in poor condition	☐ Yes ☒ No		Trash removal	

Arlington National Cemetery **Post-Construction Inspection Checklist**				**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Pre-treatment • Trash, sediment, debris, oil, grease • Clogging, standing water • Odor, algae, floating vegetation • Dead vegetation or exposed soil	☐ Yes ▣ No			
Outlet				
Erosion or sediment build-up	☐ Yes ▣ No			
Grate or spillway condition	☐ Yes ▣ No			
Proper Drainage, Underdrains and Observation Wells				
Does not dewater between storms or ponding for more than 48 hours after rain event	☐ Yes ▣ No			
Clogged underdrains	☐ Yes ▣ No			
Observation well caps present	☐ Yes ▣ No ☐ N/A			
Inlets				
Sediment build-up, trash, debris, or erosion at curb cuts, pavement edges, and/or bypassing	☐ Yes ▣ No			
Inflow hindered by vegetation	☐ Yes ▣ No			
Drainage and Adjacent Upstream Areas				
Adequate vegetation	☐ Yes ▣ No			
Trash, debris, bare soil, signs of scour, oil, grease, and/or erosion	☐ Yes ▣ No			
Additional Observations or Comments:				
ANNUAL REPORTING				
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)				**☐ Yes ▣ No**



Arlington National Cemetery **Post-Construction Inspection Checklist**			**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Inspector Name: Aileen Wallace, Quinn Garvey		Date: 11/07/2024	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy, 81		Time since last rainfall: ~1 month	
BMP INFORMATION			
BMP Installation Date: 2012		Underdrain Present: ☒ Yes ☐ No	
BMP #: RG-3	Location: Bldg 123	As-Built Plans available: ☐ Yes ☒ No	

ROUTINE MAINTENANCE ACTIVITIES

Activity	Frequency	Completed
Mowing grass filter strips and bioretention turf cover	At least 4 times a year	☒ Yes ☐ No
Spot weeding, erosion repair, trash removal, and mulch raking	Twice during growing season	☒ Yes ☐ No
• Spring visual inspection and cleanup • Supplement mulch to maintain a 3" layer • Prune trees and shrubs	Annually	☒ Yes ☐ No
Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years	☐ Yes ☒ No ☐ Not due
Replace the mulch layer	Every 3 years	☒ Yes ☐ No ☐ Not due

FIELD INSPECTION CHECKLIST

Criteria	Maintenance Required?	ANC or Professional fix	Comments	Date Repaired
Surface				
Vegetation • Vegetation species inconsistent with design specs • Less than 75-90% cover (mulch plus vegetation) • High grass • Dying or dead vegetation • Vegetation killed by salt or winter elements	☐ Yes ☒ No			
Filter Media/Mulch Layer • Too low, too compacted, and/or clogged • Older than 3 years and/or in poor condition • Ponding • Chemicals, fertilizers, oil, grease, trash, debris, sediment, sand • Erosion, exposed soil • Topsoil in poor condition	☐ Yes ☒ No			

Arlington National Cemetery **Post-Construction Inspection Checklist**			**BIORETENTION AND RAIN GARDEN** (with or without underdrain)	
Pre-treatment • Trash, sediment, debris, oil, grease • Clogging, standing water • Odor, algae, floating vegetation • Dead vegetation or exposed soil	☐ Yes ▣ No			
Outlet				
Erosion or sediment build-up	☐ Yes ▣ No			
Grate or spillway condition	☐ Yes ▣ No			
Proper Drainage, Underdrains and Observation Wells				
Does not dewater between storms or ponding for more than 48 hours after rain event	☐ Yes ▣ No			
Clogged underdrains	☐ Yes ▣ No			
Observation well caps present	☐ Yes ▣ No ☐ N/A			
Inlets				
Sediment build-up, trash, debris, or erosion at curb cuts, pavement edges, and/or bypassing	▣ Yes ☐ No	ANC	Materials stored in front of inlet that are blocking it and sediment build up at curb cut	
Inflow hindered by vegetation	☐ Yes ▣ No			
Drainage and Adjacent Upstream Areas				
Adequate vegetation	▣ Yes ☐ No			
Trash, debris, bare soil, signs of scour, oil, grease, and/or erosion	▣ Yes ☐ No			
Additional Observations or Comments:				
ANNUAL REPORTING				
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)				**☐ Yes ▣ No**

Arlington National Cemetery **Post-Construction Inspection Checklist**			**BIORETENTION AND RAIN GARDEN** (with or without underdrain)
Inspector Name: Aileen Wallace, Quinn Garvey		Date: 11/07/2024	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy, 81		Time since last rainfall: ~1 month	
BMP INFORMATION			
BMP Installation Date: 2018		Underdrain Present: ▣ Yes ☐ No	
BMP #: RG-4	Location: Lewis Shelter	As-Built Plans available: ☐ Yes ▣ No	

ROUTINE MAINTENANCE ACTIVITIES

Activity	Frequency	Completed
Mowing grass filter strips and bioretention turf cover	At least 4 times a year	▣ Yes ☐ No
Spot weeding, erosion repair, trash removal, and mulch raking	Twice during growing season	▣ Yes ☐ No
• Spring visual inspection and cleanup • Supplement mulch to maintain a 3” layer • Prune trees and shrubs	Annually	▣ Yes ☐ No
Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years	☐ Yes ▣ No ☐ Not due
Replace the mulch layer	Every 3 years	☐ Yes ▣ No ☐ Not due

FIELD INSPECTION CHECKLIST

Criteria	Maintenance Required?	ANC or Professional fix	Comments	Date Repaired
Surface				
Vegetation • Vegetation species inconsistent with design specs • Less than 75-90% cover (mulch plus vegetation) • High grass • Dying or dead vegetation • Vegetation killed by salt or winter elements	▣ Yes ☐ No	ANC	High grass	
Filter Media/Mulch Layer • Too low, too compacted, and/or clogged • Older than 3 years and/or in poor condition • Ponding • Chemicals, fertilizers, oil, grease, trash, debris, sediment, sand • Erosion, exposed soil • Topsoil in poor condition	▣ Yes ☐ No	ANC	Essentially no mulch left	

Arlington National Cemetery **Post-Construction Inspection Checklist**			**BIORETENTION AND RAIN GARDEN** (with or without underdrain)	
Pre-treatment • Trash, sediment, debris, oil, grease • Clogging, standing water • Odor, algae, floating vegetation • Dead vegetation or exposed soil	☐ Yes ▣ No			
Outlet				
Erosion or sediment build-up	☐ Yes ▣ No			
Grate or spillway condition	☐ Yes ▣ No			
Proper Drainage, Underdrains and Observation Wells				
Does not dewater between storms or ponding for more than 48 hours after rain event	☐ Yes ▣ No			
Clogged underdrains	☐ Yes ▣ No			
Observation well caps present	▣ Yes ☐ No ☐ N/A			
Inlets				
Sediment build-up, trash, debris, or erosion at curb cuts, pavement edges, and/or bypassing	▣ Yes ☐ No	ANC	Sediment build up in front of inflow pipe and at curb cuts	
Inflow hindered by vegetation	☐ Yes ▣ No			
Drainage and Adjacent Upstream Areas				
Adequate vegetation	☐ Yes ▣ No			
Trash, debris, bare soil, signs of scour, oil, grease, and/or erosion	☐ Yes ▣ No			
Additional Observations or Comments: Minor sediment build up, standing water, trash				
ANNUAL REPORTING				
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)				**☐ Yes ▣ No**

Arlington National Cemetery **Post-Construction Inspection Checklist**		**OTHER BMPS**
Inspector Name, Title, Affiliation: Renee Lavinsky	Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy, 60	Time since last rainfall: 2 hrs	

BMP INFORMATION

BMP Installation Date: 2016		Type: Stream Restoration
BMP #: SR	Location: Millennium Stream	As-Built Plans available: ☐ Yes ☒ No ☐ N/A

OBSERVATIONS AND RECOMMENDATIONS

Observations:

No erosion observed. Water levels low.

Recommendations:

ANNUAL REPORTING

Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	☐ **Yes** ■ **No**

Arlington National Cemetery Post-Construction Inspection Checklist			**OTHER BMPS**
Inspector Name, Title, Affiliation: Renee Lavinsky		Date: 2/27/2025	Date of last inspection: 6/12/2024
Weather/site conditions: Cloudy, 60		Time since last rainfall: 2 hours	
BMP INFORMATION			
BMP Installation Date: 2013		Type: Street Sweeping	
BMP #: SS	Location: ANC Roads	As-Built Plans available: ☐ Yes ☐ No ■ N/A	
OBSERVATIONS AND RECOMMENDATIONS			
Observations: Street sweeping conducted throughout ANC. Sediment on roads was minimal.			
Recommendations:			
ANNUAL REPORTING			
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)			☐ **Yes** ■ **No**

Arlington National Cemetery Post-Construction Inspection Checklist			**HYDRODYNAMIC SEPARATOR**
Inspector Name, Title, Affiliation: Renee Lavinsky		Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 60		Time since last rainfall: 4 hrs	
BMP INFORMATION			
BMP Installation Date: 2002		Model: ☐ 900 ☐ 1200 ■ 1800 ☐ 2400	
BMP #: STC-1	Location: Columbarium 7	As-Built Plans available: ■ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ■ No			
Pipe or joint breaks or cracks	☐ Yes ■ No			
Access portals cracked, damaged, or unable to open	☐ Yes ■ No			
Sediment Levels				
Sediment depth of the following values (sampling procedures provided below): *Model #* / *Depth (in.)*: STC 900: 6; STC 1200: 7; STC 1800: 12; STC 2400: 12; FD-6: 18; DD 8-ft: 30	■ Yes ☐ No	Professional	Approximately 15 inches of sediment recommend cleaning	
Oil Levels				
Oil greater than 1" (sampling procedures provided below):	☐ Yes ■ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ■ No ☐ N/A			
Sediment on pavement	☐ Yes ■ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ■ No ☐ N/A			

Additional Observations or Comments:

Approximately 15 inches of sediment in the chamber. Water to the top of the chamber.

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	■ **Yes** ☐ **No**

Sediment Level Sampling Procedures:

1. Lower clear plastic sampling tube through the 24-inch discharge opening until it hits bottom of unit.
2. Raise tube to view sediment level.
3. Take average of three samples.
4. If sediment is present in depths listed in table below, perform maintenance/vacuum truck cleaning.

Contech Stormceptor Model #	*Depth (in.)*
900	6
1200	7
1800	12
2400	12
Hydro International First Defense Model #	*Depth (in.)*
FD-6	18
Hydro International Downstream Defender Model #	*Depth (in.)*
8-ft	*30*

Oil Level Sampling Procedures:

1. Lower sampling tube through 6-inch vent pipe into upper portion of separation tank.
2. Remove tube to examine water column.
3. If more than 1-inch of oil is present, remove oil.

Arlington National Cemetery Post-Construction Inspection Checklist			**HYDRODYNAMIC SEPARATOR**
Inspector Name, Title, Affiliation: Renee Lavinsky		Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 60		Time since last rainfall: 4 hrs	
BMP INFORMATION			
BMP Installation Date: 2002		Model: ☐ 900 ☐ 1200 ■ 1800 ☐ 2400	
BMP #: STC-2	Location: Columbarium 8	As-Built Plans available: ■ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ■ No			
Pipe or joint breaks or cracks	☐ Yes ■ No			
Access portals cracked, damaged, or unable to open	☐ Yes ■ No			
Sediment Levels				
Sediment depth of the following values (sampling procedures provided below): *Model # / Depth (in.)* STC 900 / 6 STC 1200 / 7 STC 1800 / 12 STC 2400 / 12 FD-6 / 18 DD 8-ft / 30	☐ Yes ■ No		Approximately 10 inches of sediment. Recommend scheduling cleaning in within next year.	
Oil Levels				
Oil greater than 1" (sampling procedures provided below):	☐ Yes ■ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ■ No ☐ N/A			
Sediment on pavement	☐ Yes ■ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ■ No ☐ N/A			

Additional Observations or Comments:

Active flow due to street washing just prior to inspection. Sediment 10 inches, recommend cleaning within the next 12 months.

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	☐ **Yes** ☐ **No**

Sediment Level Sampling Procedures:

1. Lower clear plastic sampling tube through the 24-inch discharge opening until it hits bottom of unit.
2. Raise tube to view sediment level.
3. Take average of three samples.
4. If sediment is present in depths listed in table below, perform maintenance/vacuum truck cleaning.

Contech Stormceptor Model #	*Depth (in.)*
900	6
1200	7
1800	12
2400	12
Hydro International First Defense Model #	*Depth (in.)*
FD-6	18
Hydro International Downstream Defender Model #	*Depth (in.)*
8-ft	*30*

Oil Level Sampling Procedures:

1. Lower sampling tube through 6-inch vent pipe into upper portion of separation tank.
2. Remove tube to examine water column.
3. If more than 1-inch of oil is present, remove oil.


INLET
Stormcapture
OUTLET

Arlington National Cemetery Post-Construction Inspection Checklist			**HYDRODYNAMIC SEPARATOR**
Inspector Name, Title, Affiliation: Renee Lavinsky		Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 60		Time since last rainfall: 4 hrs	
BMP INFORMATION			
BMP Installation Date: 2013		Model: ☐ 900 ☐ 1200 ■ 1800 ☐ 2400	
BMP #: STC-3	Location: Columbarium 9 N	As-Built Plans available: ■ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ■ No			
Pipe or joint breaks or cracks	☐ Yes ■ No			
Access portals cracked, damaged, or unable to open	☐ Yes ■ No			
Sediment Levels				
Sediment depth of the following values (sampling procedures provided below): *Model # / Depth (in.)* STC 900 — 6 STC 1200 — 7 STC 1800 — 12 STC 2400 — 12 FD-6 — 18 DD 8-ft — 30	☐ Yes ■ No		4 inches of sediment	
Oil Levels				
Oil greater than 1" (sampling procedures provided below):	☐ Yes ■ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ■ No ☐ N/A			
Sediment on pavement	☐ Yes ■ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ■ No ☐ N/A			

Additional Observations or Comments:

Some water, about 18 inches below top of chamber. Approx. 4 inches of sediment.

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	☐ **Yes** ■ **No**

Sediment Level Sampling Procedures:

1. Lower clear plastic sampling tube through the 24-inch discharge opening until it hits bottom of unit.
2. Raise tube to view sediment level.
3. Take average of three samples.
4. If sediment is present in depths listed in table below, perform maintenance/vacuum truck cleaning.

Contech Stormceptor Model #	*Depth (in.)*
900	6
1200	7
1800	12
2400	12
Hydro International First Defense Model #	*Depth (in.)*
FD-6	18
Hydro International Downstream Defender Model #	*Depth (in.)*
8-ft	*30*

Oil Level Sampling Procedures:

1. Lower sampling tube through 6-inch vent pipe into upper portion of separation tank.
2. Remove tube to examine water column.
3. If more than 1-inch of oil is present, remove oil.


OUTLET

Arlington National Cemetery Post-Construction Inspection Checklist			**HYDRODYNAMIC SEPARATOR**
Inspector Name, Title, Affiliation: Renee Lavinsky		Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 60		Time since last rainfall: 4 hrs	
BMP INFORMATION			
BMP Installation Date: 2013		Model: ■ 900 ☐ 1200 ☐ 1800 ☐ 2400	
BMP #: STC-4	Location: Columbarium 9 S	As-Built Plans available: ■ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ■ No			
Pipe or joint breaks or cracks	☐ Yes ■ No			
Access portals cracked, damaged, or unable to open	☐ Yes ■ No			
Sediment Levels				
Sediment depth of the following values (sampling procedures provided below): *Model #* / *Depth (in.)* STC 900 — 6 STC 1200 — 7 STC 1800 — 12 STC 2400 — 12 FD-6 — 18 DD 8-ft — 30	☐ Yes ■ No			
Oil Levels				
Oil greater than 1" (sampling procedures provided below):	☐ Yes ■ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ■ No ☐ N/A			
Sediment on pavement	☐ Yes ■ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ■ No ☐ N/A			

Additional Observations or Comments:

Water to the top of the chamber, 1 to 2 inches of sediment

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	☐ **Yes** ☐ **No**

Sediment Level Sampling Procedures:

1. Lower clear plastic sampling tube through the 24-inch discharge opening until it hits bottom of unit.
2. Raise tube to view sediment level.
3. Take average of three samples.
4. If sediment is present in depths listed in table below, perform maintenance/vacuum truck cleaning.

Contech Stormceptor Model #	*Depth (in.)*
900	6
1200	7
1800	12
2400	12
Hydro International First Defense Model #	*Depth (in.)*
FD-6	18
Hydro International Downstream Defender Model #	*Depth (in.)*
8-ft	*30*

Oil Level Sampling Procedures:

1. Lower sampling tube through 6-inch vent pipe into upper portion of separation tank.
2. Remove tube to examine water column.
3. If more than 1-inch of oil is present, remove oil.

Arlington National Cemetery Post-Construction Inspection Checklist			**HYDRODYNAMIC SEPARATOR**
Inspector Name, Title, Affiliation: Renee Lavinsky		Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 60		Time since last rainfall: 3 hrs	
BMP INFORMATION			
BMP Installation Date: 2006		Model: ☐ 900 ☐ 1200 ☐ 1800 ■ 2400	
BMP #: STC-5	Location: Section 76	As-Built Plans available: ■ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST

Criteria	Maintenance Required?	ANC or Professional fix	Comments	Date Repaired
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ■ No			
Pipe or joint breaks or cracks	☐ Yes ■ No			
Access portals cracked, damaged, or unable to open	☐ Yes ■ No			
Sediment Levels				
Sediment depth of the following values (sampling procedures provided below): *Model #* / *Depth (in.)*: STC 900: 6; STC 1200: 7; STC 1800: 12; STC 2400: 12; FD-6: 18; DD 8-ft: 30	■ Yes ☐ No	Professional	Sediment to within 6 inches of top of chamber.	
Oil Levels				
Oil greater than 1" (sampling procedures provided below):	☐ Yes ■ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ■ No ☐ N/A			
Sediment on pavement	☐ Yes ■ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ■ No ☐ N/A			

Additional Observations or Comments:

Water to top of chamber. Deepest chamber has sediment to within 6 inches of top. Needs to be cleaned.

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	☐ **Yes** ■ **No**

Sediment Level Sampling Procedures:

1. Lower clear plastic sampling tube through the 24-inch discharge opening until it hits bottom of unit.
2. Raise tube to view sediment level.
3. Take average of three samples.
4. If sediment is present in depths listed in table below, perform maintenance/vacuum truck cleaning.

Contech Stormceptor Model #	*Depth (in.)*
900	6
1200	7
1800	12
2400	12
Hydro International First Defense Model #	*Depth (in.)*
FD-6	18
Hydro International Downstream Defender Model #	*Depth (in.)*
8-ft	*30*

Oil Level Sampling Procedures:

1. Lower sampling tube through 6-inch vent pipe into upper portion of separation tank.
2. Remove tube to examine water column.
3. If more than 1-inch of oil is present, remove oil.

Arlington National Cemetery Post-Construction Inspection Checklist			**HYDRODYNAMIC SEPARATOR**
Inspector Name, Title, Affiliation: Renee Lavinsky		Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 60		Time since last rainfall: 3 hrs	
BMP INFORMATION			
BMP Installation Date: 2006		Model: ☐ 900 ☐ 1200 ■ 1800 ☐ 2400	
BMP #: STC-6	Location: Section 73	As-Built Plans available: ■ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST

Criteria	Maintenance Required?	ANC or Professional fix	Comments	Date Repaired
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ■ No			
Pipe or joint breaks or cracks	☐ Yes ■ No			
Access portals cracked, damaged, or unable to open	☐ Yes ■ No			
Sediment Levels				
Sediment depth of the following values (sampling procedures provided below): *Model # / Depth (in.)* STC 900 — 6 STC 1200 — 7 STC 1800 — 12 STC 2400 — 12 FD-6 — 18 DD 8-ft — 30	☐ Yes ■ No		Approx. 6-8 inches sediment. Water flowing through due to street washing and rain today	
Oil Levels				
Oil greater than 1" (sampling procedures provided below):	☐ Yes ■ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ■ No ☐ N/A			
Sediment on pavement	☐ Yes ■ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ■ No ☐ N/A			

Additional Observations or Comments:

Estimate 6-8 inches of sediment in bottom of chamber.

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	☐ **Yes** ■ **No**

Sediment Level Sampling Procedures:

1. Lower clear plastic sampling tube through the 24-inch discharge opening until it hits bottom of unit.
2. Raise tube to view sediment level.
3. Take average of three samples.
4. If sediment is present in depths listed in table below, perform maintenance/vacuum truck cleaning.

Contech Stormceptor Model #	*Depth (in.)*
900	6
1200	7
1800	12
2400	12
Hydro International First Defense Model #	*Depth (in.)*
FD-6	18
Hydro International Downstream Defender Model #	*Depth (in.)*
8-ft	*30*

Oil Level Sampling Procedures:

1. Lower sampling tube through 6-inch vent pipe into upper portion of separation tank.
2. Remove tube to examine water column.
3. If more than 1-inch of oil is present, remove oil.


Stormsaver

Arlington National Cemetery Post-Construction Inspection Checklist			**HYDRODYNAMIC SEPARATOR**
Inspector Name, Title, Affiliation: Renee Lavinsky		Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 50		Time since last rainfall: 1 hour	
BMP INFORMATION			
BMP Installation Date: 1998		Model: ☐ 900 ■ 1200 ☐ 1800 ☐ 2400	
BMP #: STC-7	Location: York Dr/Marshall Dr	As-Built Plans available: ■ Yes ☐ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ■ No			
Pipe or joint breaks or cracks	☐ Yes ■ No			
Access portals cracked, damaged, or unable to open	☐ Yes ■ No			
Sediment Levels				
Sediment depth of the following values (sampling procedures provided below): *Model # / Depth (in.)* STC 900 / 6 STC 1200 / 7 STC 1800 / 12 STC 2400 / 12 FD-6 / 18 DD 8-ft / 30	☐ Yes ■ No		Cleaning conducted 2/27. Removed more than 36 inches of sediment.	
Oil Levels				
Oil greater than 1" (sampling procedures provided below):	☐ Yes ■ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ■ No ☐ N/A			
Sediment on pavement	☐ Yes ■ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ■ No ☐ N/A			

Additional Observations or Comments:

Cleaned 2/27. Removed all sediment. No repairs needed

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	☐ **Yes** ■ **No**

Sediment Level Sampling Procedures:

1. Lower clear plastic sampling tube through the 24-inch discharge opening until it hits bottom of unit.
2. Raise tube to view sediment level.
3. Take average of three samples.
4. If sediment is present in depths listed in table below, perform maintenance/vacuum truck cleaning.

Contech Stormceptor Model #	*Depth (in.)*
900	6
1200	7
1800	12
2400	12
Hydro International First Defense Model #	*Depth (in.)*
FD-6	18
Hydro International Downstream Defender Model #	*Depth (in.)*
8-ft	*30*

Oil Level Sampling Procedures:

1. Lower sampling tube through 6-inch vent pipe into upper portion of separation tank.
2. Remove tube to examine water column.
3. If more than 1-inch of oil is present, remove oil.

Before

After

Arlington National Cemetery Post-Construction Inspection Checklist			**HYDRODYNAMIC SEPARATOR**
Inspector Name, Title, Affiliation: Quinn Garvey and Renee Lavinsky		Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 63		Time since last rainfall: 2 hrs	
BMP INFORMATION			
BMP Installation Date: 2018		Model: Hydro Int'l First Defense FD-6	
BMP #: STC-8	Location: Chaffee Parking lot	As-Built Plans available: ☐ Yes ■ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ■ No			
Pipe or joint breaks or cracks	☐ Yes ■ No			
Access portals cracked, damaged, or unable to open	☐ Yes ■ No			
Sediment Levels				
Sediment depth of the following values (sampling procedures provided below): *Model # / Depth (in.)* STC 900: 6 STC 1200: 7 STC 1800: 12 STC 2400: 12 FD-6: 18 DD 8-ft: 30	☐ Yes ■ No		Farthest downstream: Sediment/water depth 1 inch. Middle structure: sediment on floor, no depth, no standing water Farthest upstream: Upstream structure had about 6-12 in of water	
Oil Levels				
Oil greater than 1" (sampling procedures provided below):	☐ Yes ■ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ■ No ☐ N/A			
Sediment on pavement	☐ Yes ■ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ■ No ☐ N/A			

Additional Observations or Comments:

Upstream locations dry with some sediment build up. Possible floating debris from pipe sections floating in upstream chamber.

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	☐ **Yes** ■ **No**

Sediment Level Sampling Procedures:

1. Lower clear plastic sampling tube through the 24-inch discharge opening until it hits bottom of unit.
2. Raise tube to view sediment level.
3. Take average of three samples.
4. If sediment is present in depths listed in table below, perform maintenance/vacuum truck cleaning.

Contech Stormceptor Model #	*Depth (in.)*
900	6
1200	7
1800	12
2400	12
Hydro International First Defense Model #	*Depth (in.)*
FD-6	18
Hydro International Downstream Defender Model #	*Depth (in.)*
8-ft	*30*

Oil Level Sampling Procedures:

1. Lower sampling tube through 6-inch vent pipe into upper portion of separation tank.
2. Remove tube to examine water column.
3. If more than 1-inch of oil is present, remove oil.

Farthest downstream

Middle manhole

Farthest upstream

Arlington National Cemetery Post-Construction Inspection Checklist			**HYDRODYNAMIC SEPARATOR**
Inspector Name, Title, Affiliation: Quinn Garvey		Date: 10/30/2024	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy, 70		Time since last rainfall: 28 days	
BMP INFORMATION			
BMP Installation Date: 2020		Model: Hydro Int'l Downstream Defender 8-ft	
BMP #: STC-9	Location: Section 52	As-Built Plans available: ☐ Yes ■ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ■ No			
Pipe or joint breaks or cracks	☐ Yes ■ No			
Access portals cracked, damaged, or unable to open	☐ Yes ■ No			
Sediment Levels				
Sediment depth of the following values (sampling procedures provided below): *Model # / Depth (in.)* STC 900 / 6 STC 1200 / 7 STC 1800 / 12 STC 2400 / 12 FD-6 / 18 DD 8-ft / 30	■ Yes ☐ No	Professional	BMP was cleaned using vacuum truck, water and minimal sediment were removed. Estimate 36 inches of sediment in chamber.	
Oil Levels				
Oil greater than 1" (sampling procedures provided below):	☐ Yes ■ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ■ No ☐ N/A			
Sediment on pavement	☐ Yes ■ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ■ No ☐ N/A			

Additional Observations or Comments:

Upon arrival, STC-9 was filled with sediment and water. The BMP appeared to have a constant water source refilling it. The team worked from 1615 to 2140 on 29 October 2024. Between departure on 29 October and return on 30 October, the chamber refilled with water. Work on 30 October 2024 was conducted from 1330 to 1930, primarily removing water and minimal sediment from the underground chamber identified as STC-9.

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	☐ **Yes** ■ **No**

Sediment Level Sampling Procedures:

1. Lower clear plastic sampling tube through the 24-inch discharge opening until it hits bottom of unit.
2. Raise tube to view sediment level.
3. Take average of three samples.
4. If sediment is present in depths listed in table below, perform maintenance/vacuum truck cleaning.

Contech Stormceptor Model #	*Depth (in.)*
900	6
1200	7
1800	12
2400	12
Hydro International First Defense Model #	*Depth (in.)*
FD-6	18
Hydro International Downstream Defender Model #	*Depth (in.)*
8-ft	*30*

Oil Level Sampling Procedures:

1. Lower sampling tube through 6-inch vent pipe into upper portion of separation tank.
2. Remove tube to examine water column.
3. If more than 1-inch of oil is present, remove oil.

Arlington National Cemetery Post-Construction Inspection Checklist				**CHAMBER/MTD/SAND FILTER**
Inspector Name: Renee Lavinsky			Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 60			Time since last rainfall: 2 hrs	
BMP INFORMATION				
BMP Installation Date: 2018			Type: ☐ Pre-Treatment ☒ Storage ☐ Other	
BMP #: STCP-1	Location: Chaffee Parking Lot		As-Built Plans available: ☐ Yes ☒ No	

ROUTINE MAINTENANCE ACTIVITIES		
Activity	**Frequency**	**Completed**
None	NA	NA

FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ☒ No			
Pipe or joint breaks or cracks	☐ Yes ☒ No			
Access cover missing, cracked, damaged, or unable to open	☐ Yes ☒ No			
Sediment Level				
Sediment accumulation in forebay	☐ Yes ☐ No ☒ N/A			
Sediment depth on vault floor greater than 15% of diameter or interior depth of vault	☐ Yes ☒ No			
Standing water inside chamber for more than 24 hours after storm	☐ Yes ☒ No			
Scum line present	☐ Yes ☒ No			
Chamber cracked (cracks wider than ½ inch), collapsed, or bent out of shape	☐ Yes ☒ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ☒ No ☐ N/A			
Sediment on pavement	☐ Yes ☒ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ☒ No ☐ N/A			

Additional Observations or Comments:

Minimal sediment, can see bottom of chamber. Damp, but no standing water.

ANNUAL REPORTING	
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)	**☐ Yes ☒ No**

Chamber 1

Chamber 2

Arlington National Cemetery Post-Construction Inspection Checklist				STORMFILTER
Inspector Name: Renee Lavinsky			Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 60			Time since last rainfall: 3 hrs	
BMP INFORMATION				
BMP Installation Date: 2018			Type: ☒ Vault ☐ Manhole ☐ Linear ☐ Other	
BMP #: STF-1	Location: East Employee Parking Lot		As-Built Plans available: ☐ Yes ☒ No	
ROUTINE MAINTENANCE ACTIVITIES				
Activity			**Frequency**	**Completed**
None			NA	NA
FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ☒ No			
Pipe or joint breaks or cracks	☐ Yes ☒ No			
Access grates cracked, damaged, or unable to open	☐ Yes ☒ No			
Sediment Level and Cartridges				
Sediment accumulation in forebay	☐ Yes ☒ No ☐ N/A		Rip rap forebay clear	
Sediment depth on vault floor greater than 4”	☐ Yes ☒ No			
Sediment depth on top of cartridges greater than 0.25”	☐ Yes ☒ No			
Cartridges submerged with greater than 4” water for more than 24 hours after storm	☐ Yes ☒ No			
Filter media plugged (no pore space) or in bypass condition during storm	☐ Yes ☒ No			
Scum line present above top cap	☐ Yes ☒ No			
Upstream and Drainage Area				
Oil, fuel or chemical spills	☐ Yes ☒ No ☐ N/A			
Sediment on pavement	☐ Yes ☒ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ☒ No ☐ N/A			
Additional Observations or Comments: Both chambers dry, sediment and filters in second chamber minimal sediment.				
ANNUAL REPORTING				
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)				**☐ Yes ☒ No**

Souther (downstream) chamber

Northern (upstream chamber)

Arlington National Cemetery Post-Construction Inspection Checklist				STORMFILTER
Inspector Name: Renee Lavinsky			Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy 60			Time since last rainfall: 4 hrs	
BMP INFORMATION				
BMP Installation Date: 2016			Type: ☒ Vault ☐ Manhole ☐ Linear ☐ Other	
BMP #: STF-2	Location: Bldg 129		As-Built Plans available: ☒ Yes ☐ No	
ROUTINE MAINTENANCE ACTIVITIES				
Activity			**Frequency**	**Completed**
None			NA	NA
FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ☒ No			
Pipe or joint breaks or cracks	☐ Yes ☒ No			
Access grates cracked, damaged, or unable to open	☐ Yes ☒ No			
Sediment Level and Cartridges				
Sediment accumulation in forebay	☐ Yes ☐ No ☒ N/A			
Sediment depth on vault floor greater than 4”	☐ Yes ☒ No			
Sediment depth on top of cartridges greater than 0.25”	☐ Yes ☒ No			
Cartridges submerged with greater than 4” water for more than 24 hours after storm	☐ Yes ☒ No			
Filter media plugged (no pore space) or in bypass condition during storm	☐ Yes ☒ No			
Scum line present above top cap	☐ Yes ☒ No			
Upstream and Drainage Area				
Oil, fuel or chemical spills	☐ Yes ☒ No ☐ N/A			
Sediment on pavement	☒ Yes ☐ No ☐ N/A		Sediment routinely on pavement surrounding BMP	
Trash, debris, bare soil, and/or erosion	☐ Yes ☒ No ☐ N/A			
Additional Observations or Comments: Clean out performed 02/27/2025. Removed 12” sediment, pressure washed filters.				
ANNUAL REPORTING				
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)				☐ **Yes** ☒ **No**

Before cleaning, 12 inches sediment

After

Arlington National Cemetery Post-Construction Inspection Checklist				**CHAMBER/MTD/SAND FILTER**
Inspector Name: Renee Lavinsky			Date: 02/27/2025	Date of last inspection: 06/12/2024
Weather/site conditions: Cloudy, 60			Time since last rainfall: 4 hours	
BMP INFORMATION				
BMP Installation Date: 1996			Type: ☐ Pre-Treatment ☒ Storage ☐ Other	
BMP #: UTD	Location: Bldg 123		As-Built Plans available: ☐ Yes ☒ No	
ROUTINE MAINTENANCE ACTIVITIES				
Activity			**Frequency**	**Completed**
None			NA	NA
FIELD INSPECTION CHECKLIST				
Criteria	**Maintenance Required?**	**ANC or Professional fix**	**Comments**	**Date Repaired**
Inlet/Outlet/Access				
Pipe blockages	☐ Yes ☒ No			
Pipe or joint breaks or cracks	☐ Yes ☒ No			
Access cover missing, cracked, damaged, or unable to open	☐ Yes ☒ No			
Sediment Level				
Sediment accumulation in forebay	☐ Yes ☐ No ☒ N/A			
Sediment depth on vault floor greater than 15% of diameter or interior depth of vault	☐ Yes ☒ No			
Standing water inside chamber for more than 24 hours after storm	☐ Yes ☒ No			
Scum line present	☐ Yes ☒ No			
Chamber cracked (cracks wider than ½ inch), collapsed, or bent out of shape	☐ Yes ☒ No			
Upstream and Drainage Area				
Oil, fuel, or chemical spills	☐ Yes ☒ No ☐ N/A			
Sediment on pavement	☐ Yes ☒ No ☐ N/A			
Trash, debris, bare soil, and/or erosion	☐ Yes ☒ No ☐ N/A			
Additional Observations or Comments: About 2 inches of water in the bottom, no sediment buildup, all pipes clean				
ANNUAL REPORTING				
Are significant maintenance activities required for the stormwater management facility to perform as designed? (does not activities such as grass mowing or trash collection)				**☐ Yes ☒ No**

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Appendix F

Pollution Prevention and Good Housekeeping Supporting Documentation

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Appendix F-1 - Training Module

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Arlington National Cemetery

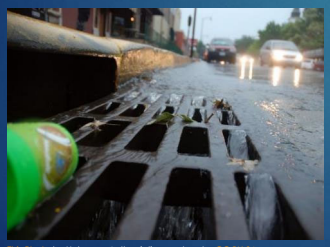
STORMWATER TRAINING 2025

1

What is Stormwater Pollution?

2

- Stormwater
- Precipitation - rain, snow, sleet, freezing rain
- Runs over pavement and grass and can pick up pollutants



- Pollutant = Sediment, dredged spoil, sewage, garbage, chemical wastes, oil/grease, biological materials, heat, rock, sand, soil, etc.
- Common ANC pollutant sources:
  - Sediment/spoil
  - Littering
  - Oil and chemical spills/leaks
  - Washing
  - Fertilizers and pesticides

2

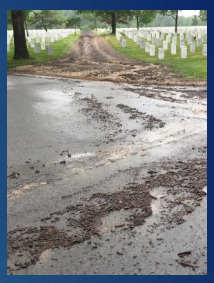
Key Risks

3

ANC storm drains discharge to Boundary Channel and Pentagon Lagoon, and ultimately to the Potomac River and Chesapeake Bay.







Stormwater entering storm drains is not treated!

If regulations are not followed:
- Employees and/or public could be exposed to contaminated water
- Costly to achieve compliance again

3

Municipal Separate Storm Sewer System (MS4) Permit and Program

4

ANC's permit requires a MS4 Program Plan. This Plan includes:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands
- Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by ANC
  - Stormwater Pollution Prevention Plan (SWPPP)

The VDEQ-approved Plan is "law" at ANC!

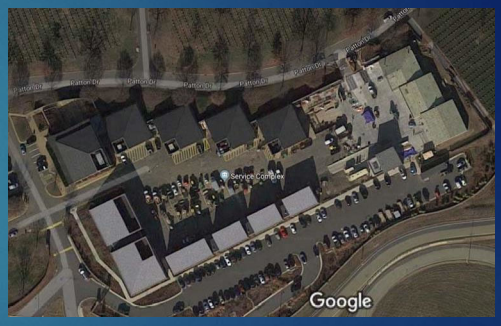
4

SWPPP and Good Housekeeping

5

SWPPP includes:

- Inventory of Potential Pollutants
- Best Management Practices (BMPs)
- Inspection Requirements
- Illicit Discharge Detection
- Training Requirements
- Reporting Requirements



5

SWPPP and Good Housekeeping

6

High Priority Areas at ANC	Potential Pollutants
Building 123 Complex	Sand, salt, sediment, petroleum, oil, lubricants, pesticides and fertilizers, hazardous materials and wastes, saw dust, litter
High-Traffic Visitor Areas	Litter
Spoils Area and Contractor Storage Area	Spoils, unusable soils, green waste, dirt, concrete dust, solid waste, petroleum, oil, lubricants, pesticides and fertilizers
Active Construction Sites	Sediment, petroleum, oil, lubricants, hazardous materials, solid and construction wastes
Parking Lots, Vehicle and Equipment Storage	Petroleum, oil, lubricants, litter
Reseeding and Landscaping Areas	Sediment, petroleum, oil, lubricants, pesticides and fertilizers

6

SWPPP and Good Housekeeping

7

Best Practices at ANC

- Good housekeeping
- Performing maintenance and inspections to prevent and identify leaks
- Sediment and erosion control
- Spill response planning (SPCC plan)
- Street sweeping with vacuum truck
- Rain gardens and bioretention basins
- Stormceptors and storm filters
- Permeable and porous pavement
- Pre-treatment and underground treatment chambers

7

SWPPP and Good Housekeeping

8

See Something!
Say Something!

What should you look for?

- Water backing up, overflowing
- Sediment or litter in BMPs or drains
- Dying vegetation
- Water bypassing BMP
- Sediment in road, not contained to site
- Blocked drains
- Litter on the ground
- Stains or chemical spills
- Improperly stored materials

8

Illicit Discharge Detection and Elimination

9

What is an Illicit Discharge?

- Any discharge into a storm drain system that is not composed entirely of stormwater

Look for…

- Water flowing during dry weather
- Potable water, chemicals, other fluids flowing in storm drains during dry weather
- Water that is cloudy, dirty, has a sheen or foam/soap, contains debris or litter, has an odor
- Sediment, trash, fuels, and oils

PERMIT
ANC is required to track all observed discharges and spills.

9

Spill Response Procedures

10

Spill Reporting Form

Facility name and address:	Arlington National Cemetery, 1 Memorial Drive, Arlington, VA 22211	
Facility phone number:	703-614-0520	
Person reporting spill:	Name:	Phone:
Form completed:	Date:	Time:

Weather conditions:		
Spill location:		
Type of material spilled:		
Estimated total quantity spilled:		
Source of spill:		
Spill occurred or first observed:	Date:	Time:
Duration of spill:		
Cause of the spill (if known)		
Actions used to stop, remove, or mitigate the spill:		

Affected media:	Water (including onsite streams, swales, ditches, and storm drains)	☐ Yes ☐ No
	Soil	☐ Yes ☐ No
If yes, describe:		
Injured or fatalities		☐ Yes ☐ No
If yes, number and type:		
Any anticipated health risks anticipated from spill:		☐ Yes ☐ No
If yes, describe		
Is evacuation required:		☐ Yes ☐ No
If yes, describe		
Damages to property:		☐ Yes ☐ No
If yes, describe		

If there is a threat to human health or the environment, immediately call 911 then the Environmental POC

If the spill is not life-threatening, immediately call the Environmental POC 703-614-0520

If safe to do so:

- Stop the flow of product
- Warn personnel
- Shut off ignition sources
- Initiate containment
- Complete spill report form and submit it to the Environmental POC

10

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