

# CITY OF ABERDEEN

## National Pollutant Discharge Elimination System General Permit For Discharges From Small Municipal Separate Storm Sewer Systems

General Discharge Permit No. 13-IM-5500 / General NPDES Permit No. MDR055500

Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

## FISCAL YEAR 2021 MS4 GENERAL PERMIT PROGRESS REPORT YEAR 3



*Comprehensive Site Compliance Inspection  
Public Works Maintenance Shop – 06/05/20  
Chemical Drums on Rolling Spill Decks*



*Chesapeake Bay Restoration – Hotspot Site Investigation  
HSI 16 Area for BMP – 02/10/20  
Thompson's Auto Repair Center / Budget Rental*

Prepared By:

City of Aberdeen  
Department of Public Works  
60 North Parke Street  
Aberdeen, MD 21001



**OCTOBER 29, 2021**



## **CITY OF ABERDEEN**

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## **FISCAL YEAR 2021**

## **MS4 GENERAL PERMIT PROGRESS REPORT**

## **YEAR 3**

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- PDFs: BMP Database Tables B.1.a, B.1.b, and B.1.c provided as pdf files within Progress Report.
- Electronic: BMP Database Tables B.1.a, B.1.b, and B.1.c also provided via separate Excel attachment.

#### **ATTACHMENT I-4:**

Phase II MS4 Restoration Activity Schedule

- PDFs: Phase II MS4 Restoration Activity Schedule provided as pdf files within Progress Report.
- Electronic: Phase II MS4 Restoration Activity Schedule also provided via separate Adobe attachment.

#### **ATTACHMENT I-5:**

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## **CITY OF ABERDEEN**

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## **FISCAL YEAR 2021 MS4 GENERAL PERMIT PROGRESS REPORT YEAR 3**

## **MARYLAND DEPARTMENT OF THE ENVIRONMENT MS4 GENERAL PERMIT PROGRESS REPORT – APPENDIX D FORM**

## **FISCAL YEAR 2021 MUNICIPAL SMALL MS4 PROGRESS REPORT YEAR 3**



**MARYLAND DEPARTMENT OF THE ENVIRONMENT  
WATER AND SCIENCE ADMINISTRATION**

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
GENERAL PERMIT FOR DISCHARGES FROM  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS**

**GENERAL DISCHARGE PERMIT NO. 13-IM-5500  
GENERAL NPDES NO. MDR055500**

Final Determination: April 27, 2018  
Effective Date: October 31, 2018  
Expiration Date: October 30, 2023

This National Pollutant Discharge Elimination System (NPDES) general permit covers small municipal separate storm sewer systems (MS4s) in certain portions of the State of Maryland. MS4 owners and operators to be regulated under this general permit must submit a Notice of Intent (NOI) to MDE by October 31, 2018. An NOI serves as notification that the MS4 owner or operator intends to comply with the terms and conditions of this general permit.

**APPENDIX D**

**Municipal Small MS4 Progress Report**

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**Maryland Department of the Environment (MDE)**

**National Pollutant Discharge Elimination System (NPDES)  
Small Municipal Separate Storm Sewer Systems (MS4) General Permit**

This Progress Report is required for those jurisdictions covered under General Discharge Permit No. 13-IM-5500. Progress Reports must be submitted to:

Maryland Department of the Environment, Water and Science Administration  
Sediment, Stormwater, and Dam Safety Program  
1800 Washington Boulevard, Suite 440, Baltimore, MD 21230-1708  
Phone: 410-537-3543 FAX: 410-537-3553  
Web Site: [www.mde.maryland.gov](http://www.mde.maryland.gov)

**Contact Information**

Permittee Name:	City of Aberdeen
Responsible Personnel:	Kyle Torster, P.E.
Mailing Address:	60 N. Parke St. Aberdeen, MD 21001
Phone Number(s):	410-272-1600 Extension 217
Email address:	ktorster@aberddeenmd.gov
Additional Contact(s):	
Mailing Address:	
Phone Number(s):	
Email address:	

**Signature of Responsible Personnel**

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

Kyle Torster		10/29/21
Printed Name	Signature	Date



**Reporting Period (State Fiscal Year):**

FY21; July 1, 2020 - Jun 30, 2021

**Due Date:**

10/31/2021

**Date of Submission:**

10/29/2021

**Type of Report Submitted:**

Impervious Area Restoration Progress Report (Annual): ☒

Six Minimum Control Measures Progress (Years 2 and 4): ☐

Both: ☐

**Permittee Information:**

Renewal Permittee: ☒

New Permittee: ☐

**Compliance with Reporting Requirements**

Part VI of the Small MS4 General Discharge Permit (No. 13-IM-5500) specifies the reporting information that must be submitted to MDE to demonstrate compliance with permit conditions. The specific information required in this MS4 Progress Report includes:

1. Annual: Progress toward compliance with impervious area restoration requirements in accordance with Part V of the general permit. All requested information and supporting documentation must be submitted as specified in Section I of the Progress Report.
2. Years 2 and 4: Progress toward compliance with the six minimum control measures in accordance with Part IV of the general permit. All requested information and supporting documentation shall be reported as specified in Section II of the Progress Report. MDE may request more frequent reporting and/or a final report in year 5 if additional information is needed to demonstrate compliance with the permit.

**Instructions for Completing Appendix D Reporting Forms**

The reporting forms provided in Appendix D allow the user to electronically fill in answers to questions. Users may enter quantifiable information (e.g., number of outfalls inspected) in text boxes. When a more descriptive explanation is requested, the reporting forms will expand as the user types to allow as much information needed to fully answer the question. The permittee must indicate in the forms when attachments are included to provide sufficient information required in the MS4 Progress Report.

## **Section I: Impervious Area Restoration Reporting Form**

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### Section I: Impervious Area Restoration Reporting

1. a. Was the impervious area baseline assessment submitted in year 1?

☒ Yes ☐ No

b. If No, describe the status of completing the required information and provide a date at which all information required by MDE will be submitted:

- c. Has the baseline been adjusted since the previous reporting year?

☒ Yes ☐ No

2. Complete the information below based on the most recent data:

Total impervious acres of jurisdiction covered under this permit:

Total impervious acres treated by stormwater water quality best management practices (BMPs):

Total impervious acres treated by BMPs providing partial water quality treatment (multiply acres treated by percent of water quality provided):

Total impervious acres treated by nonstructural practices (i.e., rooftop disconnections, non-rooftop disconnections, or vegetated swales):

[An analysis of these practices may be considered in the future.](#)

Total impervious acres untreated in the jurisdiction:

Twenty percent of this total area (this is the restoration requirement):

Verify that all impervious area draining to BMPs with missing inspection records is not considered treated. Describe how this information was incorporated into the overall analysis:

[BMPs that did not pass inspection within the past three years were not included in impervious area calculations. The BMPs included in the calculations are included in Appendix A of the Impervious Area Restoration Work Plan \(Attachment I-1\).](#)

2. Has an Impervious Area Restoration Work Plan been developed and submitted to MDE in accordance with Part V.B, Table 1 of the permit or other format?

☒ Yes ☐ No

[The Impervious Area Restoration Work Plan – Year 3 is submitted as Attachment I-1 of this Annual Report.](#)

Has MDE approved the work plan?

☒ Yes ☐ No



### Section I: Impervious Area Restoration Reporting

If the answer to either question is No, describe the status of submitting (or resubmitting) the work plan to MDE and provide a date at which all outstanding information will be available:

Describe progress made toward restoration planning, design, and construction efforts and describe adaptive management strategies necessary to meet restoration requirements by the end of the permit term:

In FY21, the City focused on moving forward with three stream restoration projects (SR-1, SR-2 and SR-9) identified in the Stream Site Assessment and Concept designs document (**Attachment I-5**) to help meet the City's impervious area restoration requirement of 193.81 acres.

3. Has a Restoration Schedule been completed and submitted to MDE in accordance with Part V.B, Table 2 of the permit?

☒ Yes ☐ No

The Restoration Activity Schedule is submitted as **Attachment I-4** of this Annual Report.

In year 5, has a complete restoration schedule been submitted including a complete list of projects and implementation dates for all BMPs needed to meet the twenty percent restoration requirement?

☐ Yes ☐ No

N/A

Are the projected implementation years for completion of all BMPs no later than 2025?

☐ Yes ☒ No

Describe actions planned to provide a complete list of projects in order to achieve compliance by the end of the permit term:

A list of projects is located in the Impervious Area Restoration Work Plan included with this report as **Attachment I-1**.

Describe the progress of restoration efforts (attach examples and photos of proposed or completed projects when available):

The Restoration Activity Schedule is submitted as **Attachment I-4** of this Annual Report. A list of projects is located in the Impervious Area Restoration Work Plan included with this report as **Attachment I-1**.

4. Has the BMP database been submitted to MDE in Microsoft Excel format in accordance with Appendix B, Tables B.1.a, b, and c?

☒ Yes ☐ No

The BMP Database is submitted as **Attachment I-3** of this Annual Report; and also provided via electronic excel attachment.

Is the database complete?

☒ Yes ☐ No

### Section I: Impervious Area Restoration Reporting

<p>If either answer is No, describe efforts underway to complete all data fields, and a date that MDE will receive the required information: N/A</p>
<p>5. Provide a summary of impervious area restoration activities planned for the next reporting cycle (attach additional information if necessary): In FY21, the City has worked with KCI Technologies, Inc. (KCI) to create Stream Restoration Concept plans for projects SR-1, SR-2, and SR-9 (<b>Attachment I-5</b>).</p>
<p>6. Describe coordination efforts with other agencies regarding the implementation of impervious area restoration activities: The City has had discussions with other permittees, and no partnerships have been developed to date. However, at this time the City feels that partnerships are unlikely to develop.</p>
<p>7. List total cost of developing and implementing the impervious area restoration program during the permit term: The City is working towards specific funding needs and a long-term budget to meet the cost of design and construction of the stream restoration projects that are expected to be implemented to meet their restoration requirements.</p>

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## **Section II: Minimum Control Measures Reporting Forms**

Not required in Year 3 of the Permit.



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### **MCM #1: Public Education and Outreach**

<p>1. Does the permittee maintain a process and phone number for the public to report water quality complaints? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Number of complaints received: <input type="text"/></p> <p>Describe the actions taken to address the complaints:</p>
<p>2. Describe training to employees to reduce pollutants to the MS4:</p>
<p>3. Describe the target audience(s) within the jurisdiction:</p>
<p>4. Are examples of educational/training materials attached with this report? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Provide the number and type of educational materials distributed: Describe how the public outreach program is appropriate for the target audience(s):</p>
<p>5. Describe how stormwater educational materials were distributed to the public (e.g., newsletters, website):</p>
<p>6. Describe how educational programs facilitated efforts to reduce pollutants in stormwater runoff:</p>
<p>7. Provide a summary of the activities planned for the next reporting cycle:</p>
<p>8. List the total cost of implementing this MCM over the permit term:</p>

## MCM #2: Public Involvement and Participation

1. Describe how the public involvement and participation program is appropriate for the target audience(s):

2. Quantify and report public involvement and participation efforts shown below where applicable.

Number of participants at public events:

Quantity of trash and debris removed at clean up events:

Number of employee volunteers participating in sponsored events:

Number of trees planted:

Length of stream cleaned (feet):

Number of storm drains stenciled:

Number of public notices published to facilitate public participation:

Number of public meetings organized:

Total number of attendees at all public meetings:

Describe the agenda, items discussed, and collaboration efforts with interested parties for public meetings:

Describe how public comments have been incorporated into the permittee's MS4 program, including water quality improvement projects to address impervious area restoration requirements:

Describe any additional events and activities if applicable:

3. Provide a summary of activities planned for the next reporting cycle:

4. List the total cost of implementing this MCM for the permit term:

### **MCM #3: Illicit Discharge Detection and Elimination (IDDE)**

1. Does the permittee maintain a map of the MS4 owned or operated by the permittee, including stormwater conveyances, outfalls, stormwater best management practices (BMPs), and waters of the U.S. receiving stormwater discharges?

☐ Yes ☐ No

If Yes, attach the map to this report and provide a progress update on any features that are still being mapped. If No, detail the current status of map development and provide an estimated date of submission to MDE:

2. Does the permittee have an ordinance, or other regulatory means, that prohibits illicit discharges?

☐ Yes ☐ No

If Yes, describe the means for enforcement utilized by the permittee (alternatively, a link may be provided to the permittee's webpage where this information is available). If No, describe the permittee's plan, including approximate time frame, to establish a regulatory means to prohibit illicit discharges:

3. Describe the process the permittee utilizes for gaining access to private property to investigate and eliminate illicit discharges:

4. Did the permittee submit to MDE standard operating procedures (SOPs) in accordance with Part IV.C of the permit?

☐ Yes ☐ No

If No, provide a proposed date that SOPs will be submitted to MDE. MDE may require more frequent reports for delays in program development:

Did MDE approve the submitted SOPs?

☐ Yes ☐ No

If No, describe the status of requested SOP revisions and approximate date of resubmission for MDE approval:



**MCM #3: Illicit Discharge Detection and Elimination (IDDE)**

5. Describe how the permittee prioritized screening locations in areas of high pollutant potential and identify the areas within which screenings were conducted during this reporting period:

6. Answers to the following questions must reflect this two-year reporting period.

How many outfalls are identified on the map?

How many outfalls were required to be screened for dry weather flows to meet the minimum numeric requirement (i.e., 20% of total outfalls, up to 100)?

How many outfalls were screened for dry weather flows?

Per the permittee's SOP, how frequently were outfalls required to be screened?

At what frequency were outfalls screened during the reporting period?

How many dry weather flows were observed?

If dry weather flows were observed, how many were determined to be illicit discharges?

Describe the investigation process to track and eliminate each suspected illicit discharge and report the status of resolution:

7. Describe maintenance or corrective actions undertaken during this reporting period to address erosion, debris buildup, sediment accumulation, or blockage problems:

8. Is the permittee maintaining all IDDE inspection records and are they available to MDE during site inspections?

☐ Yes ☐ No

**MCM #3: Illicit Discharge Detection and Elimination (IDDE)**

<p>9. If spills, illicit discharges, and illegal dumping occurred during this reporting period, describe the corrective actions taken, including enforcement activities, and indicate the status of resolution:</p>
<p>10. Attach to this report specific examples of educational materials distributed to the public related to illicit discharge reporting, illegal dumping, and spill prevention. If these are not available, describe plans to develop public education materials and submit examples with the next Progress Report:</p>
<p>11. Specify the number of employees trained in illicit discharge detection and spill prevention: <input type="text"/></p> <p>12. Provide examples of training materials. If not available, describe plans to develop employee training and submit examples with the next Progress Report:</p>
<p>13. List the cost of implementing this MCM during this permit term:</p>

#### **MCM #4: Construction Site Stormwater Runoff Control**

##### **Erosion & Sediment Control Program Procedures, Ordinances, and Legal Authority**

1. Does the permittee have an MDE approved ordinance?

☐ Yes ☐ No

Has the permittee submitted modifications to MDE?

☐ Yes ☐ No

Has the adopted ordinance been submitted to MDE?

☐ Yes ☐ No

If No, is the adopted ordinance attached?

☐ Yes ☐ No

2. Does the permittee rely on the County, local Soil Conservation District, or MDE to perform any or all requirements for an acceptable erosion and sediment control program? ☐ Yes ☐ No

If Yes, check all that apply:

☐ Plan Review and Approval

☐ Construction Inspections

☐ Enforcement

3. Does the permittee have a process to ensure that all necessary permits for a proposed development have been obtained prior to issuance of a grading or building permit?

☐ Yes ☐ No

Explain how the permittee ensures all permits are in place:

##### **Erosion & Sediment Control Program Implementation Information**

1. Does the permittee have a process for receiving, investigating, and resolving complaints from interested parties related to construction activities and erosion and sediment control?

☐ Yes ☐ No

Describe the process:

Provide a list of all complaints and summary of actions taken to resolve them:

#### MCM #4: Construction Site Stormwater Runoff Control

2. Total number of active construction projects within the reporting period:

Provide a list of all construction projects and disturbed areas:

Does the permittee submit grading reports to MDE (only applies if the permittee has an MDE approved ordinance)?

☐ Yes ☐ No ☐ N/A

3. Total number of violation notices issued related to this MCM within the permit area (report total number whether the permittee or another entity performs inspections):

Describe the status of enforcement activities:

Describe how the permittee communicates and collaborates with the enforcement authority for violations within the permit area. Include measures taken by the permittee such as suspending or denying a building or grading permit in order to prevent the discharge of pollutants into the MS4:

Are erosion and sediment control inspection records retained and available to MDE during field review of local programs?

☐ Yes ☐ No

If No, explain:

4. Number of staff trained in MDE's Responsible Personnel Certification:

5. Describe the coordination efforts with other entities regarding the implementation of this MCM:

6. List the total cost of implementing this MCM over the permit term:

### MCM #5: Post Construction Stormwater Management

Stormwater Management Program Procedures, Ordinances, and Legal Authority	
1. Does the permittee have an MDE approved ordinance?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Has the permittee submitted modifications to MDE?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Has the adopted ordinance been submitted to MDE?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If No, is the adopted ordinance attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Does the permittee have a memorandum of understanding (MOU) with the County to perform any or all requirements for an acceptable stormwater program? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes, check all that apply: <input type="checkbox"/> Plan Review and Approval <input type="checkbox"/> First Year Post Construction Inspections <input type="checkbox"/> As-Built Plan Approval <input type="checkbox"/> Post Construction Triennial Inspections <input type="checkbox"/> Enforcement <input type="checkbox"/> BMP Tracking and Reporting	
Stormwater Management Program Implementation Information	
1. Has an Urban BMP database been submitted in accordance with the database structure in Appendix B, Tables B.1.a, b, and c as a Microsoft Excel file? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Describe the status of the database and efforts to complete all data fields:	
2. Total number of triennial inspections performed: <input type="text"/>	
Total number of BMPs jurisdiction-wide: <input type="text"/>	
Are inspections performed at least once every three years for all BMPs? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If No, describe how the permittee will catch up on past inspections and remain on track to perform BMP inspections once every three years:	

### MCM #5: Post Construction Stormwater Management

Are BMP inspection records retained and available to MDE during field review of local programs?

☐ Yes ☐ No

3. Total number of violation notices issued:

Describe efforts to bring BMPs into compliance and the status of enforcement activities within the jurisdiction:

4. Describe how the permittee coordinates and cooperates with the County to ensure stormwater BMPs are functioning according to approved standards. (Applicable for municipalities that rely on the County to perform stormwater triennial inspections):

5. Provide a summary of routine maintenance activities for all publicly owned BMPs:

Number of publicly owned BMPs:

Describe how often BMPs are maintained. Specify whether maintenance activities are more frequent for certain BMP types:

Are BMP maintenance checklists and procedures for publicly owned BMPs available to MDE during field review of local programs?

☐ Yes ☐ No

Are BMP maintenance records retained and available to MDE during field review of local programs?

☐ Yes ☐ No

If either answer is No, describe planned actions to implement maintenance checklists and procedures and provide formal documentation of these activities:

6. Number of staff trained in proper BMP design, performance, inspection, and routine maintenance:

**MCM #5: Post Construction Stormwater Management**

7. Provide a summary of activities planned for the next reporting cycle:
8. List the total cost of implementing this MCM over the permit term:

### MCM #6: Pollution Prevention and Good Housekeeping

1. Provide a list of topics covered during the last training session related to pollution prevention and good housekeeping, and attach to this report specific examples of training materials:

List all training dates within this two-year reporting period:

Number of staff attended:

2. Are the good housekeeping plan and inspection records at each property retained and available to MDE during field review of the local program? ☐ Yes ☐ No

If No, explain:

Provide details of all discharges, releases, leaks, or spills that occurred in the past reporting period using the following format (attach additional sheets if necessary).

Property Name:    Date:

Describe observations:

Describe permittee's response:

3. Quantify and report property management efforts as shown below, where applicable (attach additional sheets if necessary).

Number of miles swept:

Amount of debris collected from sweeping (indicate units):

If roads and streets are swept, describe the strategy the permittee has implemented to maximize efficiency and target high priority areas:

Number of inlets cleaned:

Amount of debris collected from inlet cleaning (indicate units):

Describe how trash and hazardous waste materials are disposed of at permittee owned



**MCM #6: Pollution Prevention and Good Housekeeping**

and operated property(ies), including debris collected from street sweeping and inlet cleaning:

Does the permittee have a current State of Maryland public agency permit to apply pesticides?

☐ Yes ☐ No

If No, explain (e.g., contractor applies pesticides):

Does the permittee employ at least one individual certified in pesticide application?

☐ Yes ☐ No

If Yes, list name(s):

If the permittee applied pesticides during the reporting year, describe good housekeeping methods (e.g., integrated pest management, alternative materials/techniques):

If the permittee applied fertilizer during the reporting year, describe good housekeeping methods (e.g., application methods, chemical storage, native or low maintenance species, training):

If the permittee applied materials for snow and ice control during the reporting year, describe good housekeeping methods (e.g., pre-treatment, truck calibration and storage, salt domes):

Describe good housekeeping BMP alternatives not listed above:

4. If applicable, provide a status update for permittee owned or operated properties regarding coverage under the Maryland General Permit for Stormwater Discharges Associated with Industrial Activity or an individual industrial surface water discharge permit:

5. List the total cost of implementing this MCM over the permit term:



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## **FISCAL YEAR 2021 MS4 GENERAL PERMIT PROGRESS REPORT YEAR 3**

# **ATTACHMENT I-1 IMPERVIOUS AREA RESTORATION WORK PLAN YEAR 3**

# **CITY OF ABERDEEN**

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Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

# **IMPERVIOUS AREA RESTORATION WORK PLAN YEAR 3**

Prepared By:

City of Aberdeen  
Department of Public Works  
60 North Parke Street  
Aberdeen, MD 21001



**OCTOBER 29, 2021**



## CITY OF ABERDEEN

### National Pollutant Discharge Elimination System General Permit For Discharges From Small Municipal Separate Storm Sewer Systems

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### IMPERVIOUS AREA RESTORATION WORK PLAN – YEAR 3

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## CITY OF ABERDEEN

### NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM

#### PHASE II MS4 PERMIT

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

### IMPERVIOUS AREA RESTORATION WORK PLAN – YEAR 3

The City of Aberdeen is continuing to make updates to the Impervious Area Restoration Work Plan throughout the Permit cycle. The report below summarizes updates to the Year 1 and Year 2 Work Plan as well as activities in Year 3.

#### I. Develop Impervious Area Baseline Assessment

The City of Aberdeen's Fiscal Year 2020 Phase II MS4 Annual Report dated October 28, 2020 summarized the methodology for preparing the City's Baseline Area Impervious Assessment. As reported in the 2020 report, **Table 1** documents the City's total impervious area, total impervious acres treated by BMPs, and twenty percent of the untreated impervious area.

**TABLE 1 – 2004 IMPERVIOUS AREAS YEAR 2 <sup>1</sup>**

Category	Total Area (Acres)
<b>Total Impervious Area</b>	<b>988.51</b>
Impervious Area Treated by BMPs with Full Water Quality Treatment <sup>2</sup>	10.16
Impervious Area Treated by BMPs with Partial Water Quality Treatment <sup>3</sup>	10.23
Impervious Area Treated by Non-structural Practices	To Be Determined
Untreated Impervious Area	968.12
<b>Restoration Requirement (20% of Untreated Impervious Area)</b>	<b>193.62</b>

<sup>1</sup> Areas may continue to be refined during each reporting year as funding allows and as new data becomes available.

<sup>2</sup> BMPs with a  $P_E$  value  $\geq 1$  were considered Full Water Quality Treatment BMPs.

<sup>3</sup> BMPs with a  $P_E$  value  $< 1$  were considered Partial Water Quality Treatment BMPs.

#### A. Year 3 Updates

The following changes were made to the City of Aberdeen's BMP Database and baseline impervious areas:

- Updated  $P_e$  values per MDE's comments on the FY2020 MDE Annual Report (See Section XII).
- Removed BMPs from the baseline that did not pass inspection within the last 3 years.
- Added new BMPs to the baseline that passed inspection since Year 1 and Year 2.

Based on the changes above BMP Fact Sheets were updated for each BMP detailing the calculations used to determine the impervious acres treated. These BMP Fact Sheets are included in **Appendix A** of this report.

## **B. Year 3 Impervious Acreage**

- The total impervious area treated by BMPs providing FULL water quality treatment in Year 3 is approximately 9.46 acres (Table 2).
- The total impervious area treated by BMPs providing PARTIAL water quality treatment is approximately 10.00 acres (Table 2).
- The total untreated impervious area in the City of Aberdeen increased to 969.05.

**TABLE 2 – 2004 IMPERVIOUS AREAS YEAR 3 <sup>1</sup>**

Category	Total Area (Acres)
<b>Total Impervious Area</b>	<b>988.51</b>
Impervious Area Treated by BMPs with Full Water Quality Treatment <sup>2</sup>	9.46
Impervious Area Treated by BMPs with Partial Water Quality Treatment <sup>3</sup>	10.00
Impervious Area Treated by Non-structural Practices	To Be Determined
Untreated Impervious Area	969.05
<b>Restoration Requirement (20% of Untreated Impervious Area)</b>	<b>193.81</b>

<sup>1</sup> Areas may continue to be refined during each reporting year as funding allows and as new data becomes available.

<sup>2</sup> BMPs with a  $P_E$  value  $\geq 1$  were considered Full Water Quality Treatment BMPs.

<sup>3</sup> BMPs with a  $P_E$  value  $< 1$  were considered Partial Water Quality Treatment BMPs.

## **II. Develop a Restoration Work Plan for MDE Review and Approval**

The City will continue to revise and adjust the Impervious Area Restoration Work Plan as appropriate. The City has already begun to discuss plans for meeting the restoration requirement by evaluating stream restoration projects described in Sections VIII and XIV of this report.

## **III. Assess Opportunities and Timelines for Implementing Water Quality BMPs**

The City developed a Watershed Assessment and Restoration Plan in September 2020 that identified several potential opportunities to implement Water Quality BMPs. They fall into the categories of Stream Restoration, Reforestation, Rain Barrels, and Rain Gardens. More information is located in Section VIII of this report.

#### **IV. Assess Opportunities to Develop Partnerships with other NPDES Permittees**

The City has had discussions with other permittees, and no partnerships have been developed to date. The City feels partnerships are unlikely to develop.

#### **V. Determine Funding Needs and Develop a Long-Term Budget**

The City currently has an agreement with Harford County that allows a portion of the taxes paid to the County within City limits to be used by the City for stormwater retrofits and improvements. These funds will be used to fund a portion of the City's 20% restoration requirement.

The City is working towards specific funding needs and a long-term budget to meet the cost of design and construction of the stream restoration projects that are expected to be implemented to meet their restoration requirements.

In FY22, the City is planning to apply for grant funding to help finance some of the stream restoration projects the City has selected for impervious area restoration credit.

#### **VI. Update and Submit Urban BMP Database**

A summary of past updates were previously documented in the City of Aberdeen's Fiscal Year 2020 Phase II MS4 Annual Report dated October 28, 2020.

#### **VII. Maintain Inspection Records for all BMPs**

The City continues to inspect all BMPs tri-annually according to the Permit and maintain up-to-date inspection records. All new inspection information is current in the BMP Database submitted in the Fiscal Year 2021 MS4 General Permit Progress Report Year 3 **Attachment I-3**.

#### **VIII. Perform Watershed Assessments and Identify Water Quality Problems and Opportunities for Restoration**

The City completed a Watershed Assessment and Restoration Plan in September 2020 in accordance with the Phase II MS4 Permit (**Attachment I-2** of the Fiscal Year 2021 MS4 General Permit Progress Report Year 3). The assessments described below support the City's goals for healthy watersheds and natural resources, and also support progress towards satisfying several regulatory and permit requirements. These assessments provide the next step in the planning process specifically for the urban stormwater sector regulated by the Phase II MS4 Permit. This watershed assessment, through both desktop and field assessments, identifies watershed conditions and specific restoration solutions to meet the City's watershed restoration goals.

Results of desktop and field watershed assessments were compiled and analyzed to determine specific areas of impairment most in need of restoration. Restoration measures were then developed according to the type and source of impact. The following section presents the results and cost for Stream Restoration.

### Stream Restoration

Stream restoration opportunities were field-identified during a Stream Corridor Assessment (SCA). The current condition of streams was assessed, and locations of stream erosion were identified and mapped using a global positioning system (GPS).

The assessment rated each segment of stream erosion on a 1 to 5 scale according to its severity, correctability, and accessibility; where a score of 1 is the most severe, but also the most correctible and the most accessible. These scores were used to identify high priority stream reaches for stream restoration and were generally sites with a severity score of 1 or 2, and a correctability/access score of 1-4.

Eleven (11) stream restoration projects were identified, with a total length of approximately 11,545 linear feet. **Table 3** provides a summary of cost, impervious acre credit, and load reduction for each stream restoration project identified.

**TABLE 3: STREAM RESTORATION COST, IMPERVIOUS CREDIT, AND LOAD REDUCTION**

Site ID	SCA Reach	Erosion length (ft)	Total Initial Cost	Total Cost Over 20 Years	Impervious Credit (Acres)*	Cost Per Impervious Credit	Load Reduction (lbs/yr)		
							TN	TP	TSS
SR_1	R022	130	\$97,393	\$124,301	2.6	\$47,808	9.8	8.8	32,240.0
SR_2	R173	3,856	\$2,888,823	\$3,686,945	77.12	\$47,808	289.2	262.2	956,288.0
SR_3	R165	230	\$172,311	\$219,916	4.6	\$47,808	17.3	15.6	57,040.0
SR_4	R137, R141	2025	\$1,517,082	\$1,936,219	40.5	\$47,808	151.9	137.7	502,200.0
SR_5	R126	103	\$77,165	\$98,484	2.06	\$47,808	7.7	7.0	25,544.0
SR_6	R123	80	\$59,935	\$76,492	1.6	\$47,808	6.0	5.4	19,840.0
SR_7	R105	1485	\$1,112,527	\$1,419,894	29.7	\$47,808	111.4	101.0	368,280.0
SR_8	R107	770	\$576,865	\$736,241	15.4	\$47,808	57.8	52.4	190,960.0
SR_9	R088	1,585	\$1,187,444	\$1,515,510	31.7	\$47,808	118.9	107.8	393,080.0
SR_10	R043	996	\$746,179	\$952,333	19.92	\$47,808	74.7	67.7	247,008.0
SR_11	R057	285	\$213,516	\$272,504	5.7	\$47,808	21.4	19.4	70,680.0
<b>Total</b>		<b>11,545</b>	<b>\$8,649,240</b>	<b>\$11,038,839</b>	<b>230.9</b>	<b>\$47,808</b>	<b>865.9</b>	<b>785.1</b>	<b>2,863,160.0</b>

\*Impervious credit calculated with planning rate. Actual site-specific impervious credit may be higher.



In FY21, the City worked with KCI Technologies, Inc. (KCI) to create Stream Restoration Concept plans for projects SR-1, SR-2, and SR-9 listed in **Table 3** above. One of the main intents of the Stream Restoration Concept Plans is to apply for grant monies to help fund these projects. A summary of work completed for FY21 for these three projects is listed in **Table 4** below:

**TABLE 4: SUMMARY OF WORK COMPLETED**

Description	SR1	SR2	SR9
Budget Estimates	√	√	√
Trilogy Letters	√	√	√
USGS Streamstats Hydrology	√	√	√
Visual Assessments	√	√	√
Wetland Delineations	√	√	√
Forest Stand Delineations	√	√	√
Invasive Baseline Assessment	√	√	√
BANCS or P5 Data Collection	√	√	√
Sediment Sampling	√	√	√
Geomorphic Survey	√		√
Upland BMP Site ID	√	NA	√
Assessment, concept design, NRI Report	√	√	√
P1/P5 Credit Comps	√	√	√
Concept Design and NRI Mapping	√	√	√
Grant Field Walk		√	√

Based upon field surveys and additional research an updated summary of the equivalent impervious acre credit potential the City may receive for these three stream restoration projects is listed below in **Table 5**:

**TABLE 5: EQUIVALENT IMPERVIOUS ACRE CREDIT POTENTIAL**

Site	Approximate Restoration (LF)	Physiographic Region	Site Specific Credit (ac)	Planning Rate Credit (ac)	Selected Project Credit (ac)
SR-1	400	Coastal Plain	4.6	8.0	8.0
SR-1 Upland BMP*	N/A	Coastal Plain	2.6	N/A	2.6
SR-2	3856	Piedmont	23.5	115.7	115.7
SR-2 Pond Trib	72	Piedmont	0.6	2.2	2.2
SR-2 Wetland Swale	28	Piedmont	3.2	0.8	3.2
SR-2 Upstream Trib	577	Piedmont	26.0	17.3	26.0
SR-9	1635	Coastal Plain	38.7	32.7	38.7
SR-9 Upland BMP*	N/A	Coastal Plain	7.8	N/A	7.8
<b>TOTAL</b>	<b>6568</b>	<b>--</b>	<b>107</b>	<b>187.1</b>	<b>204.1</b>

**IX. Develop List of Specific Projects to be Implemented for Restoration and Identify on the Restoration Activity Schedule**

At this time, the City has selected some projects as listed in the Phase II MS4 Restoration Activity Schedule (**Attachment I-4** of the Fiscal Year 2021 MS4 General Permit Progress Report Year 3). Additional potential projects are listed in Section VIII of this Impervious Area Restoration Work Plan; as well as in Section 4 (Potential Water Quality Improvement Projects) of the *Watershed Assessment and Restoration Plan* (**Attachment I-2** of the Fiscal Year 2021 MS4 General Permit Progress Report Year 3).

In FY21, the City focused on moving forward with three stream restoration projects (SR-1, SR-2 and SR-9) to help meet the City's impervious area restoration requirement of 193.382 acres. This is further described in the Impervious Area Restoration Work Plan Year 3 Section XIV below.

**X. Incorporate Future Growth Agency-Wide/Jurisdiction-Wide Master Plans into Restoration Planning Efforts**

The City will continue to require that all future growth and development adhere to current MDE sediment and stormwater regulations. The City will require full treatment of all new development and impervious surfaces.

**XI. Evaluate and Refine Budget Needs for Project Implementation**

The City has an agreement with Harford County that allows a portion of the taxes paid to the County within City limits to be used by the City for stormwater retrofits and improvements. These funds will be used to fund a portion of the City's 20% restoration requirement. In FY22, the City is working with KCI Technologies, Inc. to apply for grant funding through the Watershed Assistance Grant Program (WAGP) administered through the Chesapeake Bay Trust (CBT).

The City is working towards specific funding needs and a long-term budget to meet the cost of design and construction of the stream restoration projects that are expected to be implemented to meet their restoration requirements.

**XII. Update Submit Urban BMP Database and Documented Maintenance and Inspection Status for all BMPs**

New BMPs were added to the BMP Database according to the permit-required specifications (Phase II MS4 Permit Pages B-17 through B-23). Each BMP the Town is claiming credit for has a BMP Fact Sheet detailing all impervious information and calculations. The BMP Fact Sheets are located in **Appendix A** of this report.

Existing BMPs in the database have been updated with the latest inspection and impervious information. All changes are also reflected in the BMP Fact Sheets in **Appendix A** of this report.

The following changes were made to the existing BMP Database, which were based on MDE Year 2 Comments.

**MDE Comment:**

As noted in the Department's previous review, extra credit for over management was intended to be calculated for restoration projects and not for BMPs implemented to meet regulatory requirements for new development. **BMPs built after 2002 should be assumed to have a PE of 1".** Additional treatment may only be applied to BMPs that provide treatment that exceeds regulatory requirements. The City indicated in its response that the estimated treatment for five BMPs was adjusted. However, Table B.1.b lists 29 BMPs with a PE of greater than 1.0. In the next progress report the City must provide information on the how treatment provided by these practices was determined, e.g., was the developer required to provide additional treatment above State regulatory requirements. **The City should provide further documentation showing that treatment was verified for each practice. For example, AB19BMP000027 and AB19BMP000168 were built 1992 and treat 2.7".**

**City Response:**

The following BMPs built after 2002 that have a Pe value > 1 were revised to have a Pe value – 1.0". The explanation of these Pe values is located on the BMP Fact Sheets located in **Appendix A** of this report.

**Impacts:**

1. AB04BMP000110 – Pe value was revised from 1.60" to 1.0".
  - a. This decreased the treatment credit from 0.19 ac to 0.17 ac, a loss of 0.02 ac.
2. AB04BMP000111 – Pe value was revised from 1.40" to 1.0".
  - a. This decreased the treatment credit from 0.23 ac to 0.21 ac, a loss of 0.02 ac.
3. AB05BMP000102 – Pe value was revised from 0.20" to 1.0".
  - a. This increased the treatment credit from 0.13 ac to 0.65 ac, an increase of 0.52 ac.
4. AB05BMP000148 – Pe value was revised from 0.70" to 1.0".
  - a. This increased the treatment credit from 0.10 ac to 0.15 ac, an increase of 0.05 ac.
5. AB03BMP000184 – Pe value was revised from 2.40" to 1.0".
  - a. This decreased the treatment credit from 5.64 ac to 4.18 ac, a loss of 1.46 ac.

**City Response:**

The following BMPs listed in Table B.1.b below have a Pe of greater than 1.0. The City has provided further documentation showing that treatment was verified for each practice located in **Appendix B** of this report.

**Impacts:**

1. AB19BMP000027 - Pe value was revised from 2.7 to 2.00.
2. AB19BMP000097 – Pe value was revised from 2.7 to 2.18.
3. AB19BMP000098 – Pe value was revised from 2.7 to 2.13.
4. AB19BMP000099 – Pe value was revised from 2.7 to 2.16.
5. AB19BMP000100 – Pe value was revised from 2.7 to 2.18.
6. AB19BMP000101 – Pe value was revised from 2.7 to 2.07.
7. AB19BMP000102 – Pe value was revised from 2.7 to 2.21.
8. AB19BMP000103 – Pe value was revised from 2.7 to 2.13.
9. AB19BMP000104 – Pe value was revised from 2.7 to 2.17.
10. AB19BMP000105 – Pe value was revised from 2.7 to 2.40.
11. AB19BMP000106 – Pe value was revised from 2.7 to 2.08.
12. AB19BMP000107 – Pe value was revised from 1.24 to 2.05.
13. AB19BMP000168– Pe value was revised from 2.7 to 2.23.
14. AB20BMP000051 – Pe value remains 1.80.
15. AB20BMP000052 – Pe value remains 1.80.
16. AB20BMP000053 – Pe value remains 2.00.
17. AB20BMP000054 – Pe value remains 2.60.
18. AB20BMP000055 – Pe value remains 1.80.
19. AB20BMP000056 – Pe value remains 2.60.
20. AB20BMP000057 – Pe value remains 2.40.
21. AB20BMP000109 – Pe value remains 1.40.
22. AB20BMP000110 – Pe value remains 1.20.
23. AB20BMP000111 – Pe value remains 1.01.
24. AB21BMP000002– Pe value remains 1.01.
25. AB21BMP000003– Pe value remains 2.56.

**MDE Comment:**

Some BMPs type XOTH were listed in B.1.a; however, were not listed in Table B.1.b. Please complete data for these BMPs in all appropriate tables.

**City Response:**

All BMPs with XOTH were moved to Table B.1.b.

**MDE Comment:**

BMPs AB20BMP000014 – AB20BMP000018 PE\_ADR was listed in cubic feet; however, the database requires that this data is listed in inches.

**City Response:**

1. AB20BMP000014– PE\_ADR was revised from 2246 to 1.95.
2. AB20BMP000015– PE\_ADR was revised from 3188 to 2.10.
3. AB20BMP000016– PE\_ADR was revised from 2504 to 2.20.
4. AB20BMP000017– PE\_ADR was revised from 3220 to 2.36.
5. AB20BMP000018– PE\_ADR was revised from 2828 to 2.01.

**MDE Comment:**

Please check Built\_Date information and ensure it is entered in the proper format, e.g., check built date for “6/22/1905”; “2017” should be in MM/DD/YYYY format.

**City Response:**

BMP AB05BMP000003, AB05BMP000135, and AB05BMP000141 have updated dates in the correct format in the database.

**MDE Comment:**

Several BMP records reported IMP\_ACRES as “20,000” or similar. Please check this data and confirm that the units are reported in acres. For example, the impervious acre data reported for AB20BMP000025 appears to use the wrong units (BMP type FBIO). Please correct this information.

**City Response:**

All BMPs with IMP\_ACRES listed in cubic feet were updated to acres. These changes did not impact the impervious area baseline as these BMPs are all built after 2018.

**Impacts:**

1. AB20BMP000025 – Impervious Acres was revised from 28732 to 0.66.
2. AB20BMP000035 – Impervious Acres was revised from 25822 to 0.59.
3. AB20BMP000026 – Impervious Acres was revised from 22572 to 0.51.
4. AB20BMP000027 – Impervious Acres was revised from 20733 to 0.47.
5. AB20BMP000015 – Impervious Acres was revised from 3188 to 0.07.
6. AB20BMP000018 – Impervious Acres was revised from 17547 to 0.40.
7. AB20BMP000017 – Impervious Acres was revised from 16998 to 0.39.
8. AB20BMP000014 – Impervious Acres was revised from 14423 to 0.33.
9. AB20BMP000016 – Impervious Acres was revised from 14176 to 0.32.
10. AB20BMP000046 – Impervious Acres was revised from 12465 to 0.29.
11. AB20BMP000028 – Impervious Acres was revised from 12384 to 0.28.
12. AB20BMP000037 – Impervious Acres was revised from 12300 to 0.28.
13. AB20BMP000044 – Impervious Acres was revised from 11981 to 0.27.
14. AB20BMP000029 – Impervious Acres was revised from 10837 to 0.24.
15. AB20BMP000043 – Impervious Acres was revised from 10485 to 0.24.
16. AB20BMP000047 – Impervious Acres was revised from 6889 to 0.15.
17. AB20BMP000041 – Impervious Acres was revised from 6573 to 0.15.
18. AB20BMP000036 – Impervious Acres was revised from 6248 to 0.14.
19. AB20BMP000034 – Impervious Acres was revised from 6192 to 0.14.
20. AB20BMP000038 – Impervious Acres was revised from 6184 to 0.14.
21. AB20BMP000042 – Impervious Acres was revised from 6164 to 0.14.
22. AB20BMP000045 – Impervious Acres was revised from 6037 to 0.13.
23. AB20BMP000039 – Impervious Acres was revised from 5084 to 0.11.
24. AB20BMP000040 – Impervious Acres was revised from 4826 to 0.11.
25. AB20BMP000031 – Impervious Acres was revised from 3382 to 0.07.
26. AB20BMP000030 – Impervious Acres was revised from 3133 to 0.07.
27. AB20BMP000033 – Impervious Acres was revised from 1737 to 0.03.
28. AB20BMP000032 – Impervious Acres was revised from 1737 to 0.03.

**XIII. Develop Adaptive Management Strategies for BMP Implementation that Identify Opportunities for Improved Processes and Procedures**

The City has worked on developing adaptive management strategies by conducting a watershed assessment that identified multiple types of BMPs to meet their impervious area restoration requirements. Through an iterative process that included prioritizing projects and conducting field studies the City is now in the position to meet their impervious area requirements by implementing three stream restoration projects, as described in Section VIII of this impervious area restoration work plan.

**XIV. Continue to Identify Opportunities for Water Quality Improvement Projects and Collaborative Partnerships to Meet Restoration Requirements**

The City worked with KCI Technologies, Inc. (KCI) to create Stream Restoration Concept plans for projects SR-1, SR-2, and SR-9.

In FY22, the City plans to work with property owners in order to establish collaborative partnerships regarding access and maintenance agreements for the three stream restoration projects mentioned above. The Stream Restoration Concept Memo is included in **Attachment I-4** of the Fiscal Year 2021 MS4 General Permit Progress Report Year 3.



## **CITY OF ABERDEEN**

### **NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS**

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

# **IMPERVIOUS AREA RESTORATION WORK PLAN YEAR 3**

## **APPENDIX A**

## **BMP FACT SHEETS**





**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB00BMP000041
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	1999
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	16.60
Total Impervious Area (Acres)	6.81
Total Impervious Area within City Limits (Acres)	6.81
I	41.00
Rv	0.42
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>6.81</b>	<b>Town Owned Impervious (Acres):</b>	<b>6.81</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB00BMO000150
BMP Type	Shallow Marsh
BMP Type Code	WSHW
Plan Date	2000
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	30.85
Total Impervious Area (Acres)	17.08
Total Impervious Area within City Limits (Acres)	17.08
I	55.00
Rv	0.55
Runoff Storage Volume (cf) (RS)	32670
Pe Treated by BMP (inches) (Pe)	0.50

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.53
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.50</b>	
<b>Total Impervious (Acres):</b>	<b>17.08</b>	<b>Town Owned Impervious (Acres):</b>	<b>17.08</b>
<b>Impervious Acres Treated:</b>		<b>8.54</b>	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB00BMP000030
BMP Type	Other - Water Quality Basin
BMP Type Code	XOTH
Plan Date	1999
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.95
Total Impervious Area (Acres)	0.78
Total Impervious Area within City Limits (Acres)	0.78
I	82.00
Rv	0.79
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.78</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.78</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB00BMP000151
BMP Type	Shallow Marsh
BMP Type Code	WSHW
Plan Date	2000
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	3.11
Total Impervious Area (Acres)	0.60
Total Impervious Area within City Limits (Acres)	0.60
I	19.00
Rv	0.22
Runoff Storage Volume (cf) (RS)	Attributed to AB00BMP000152
Pe Treated by BMP (inches) (Pe)	

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
---	--

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>			
<b>Total Impervious (Acres):</b>	0.60	<b>Town Owned Impervious (Acres):</b>	0.60
<b>Impervious Acres Treated:</b>		<b>N/A</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB00BMP000152
BMP Type	Shallow Marsh
BMP Type Code	WSHW
Plan Date	2000
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	4.48
Total Impervious Area (Acres)	1.54
Total Impervious Area within City Limits (Acres)	1.54
I	34.00
Rv	0.36
Runoff Storage Volume (cf) (RS)	11566
Pe Treated by BMP (inches) (Pe)	2.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	2.07
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>2.00</b>	
<b>Total Impervious (Acres):</b>	<b>1.54</b>	<b>Town Owned Impervious (Acres):</b>	<b>1.54</b>
<b>Impervious Acres Treated:</b>		<b>1.92</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB00BMP000193
BMP Type	Shallow Marsh
BMP Type Code	WSHW
Plan Date	2000
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	3.00
Total Impervious Area (Acres)	2.55
Total Impervious Area within City Limits (Acres)	2.55
I	85.00
Rv	0.82
Runoff Storage Volume (cf) (RS)	2264
Pe Treated by BMP (inches) (Pe)	0.30

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.24
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.30</b>	
<b>Total Impervious (Acres):</b>	<b>2.55</b>	<b>Town Owned Impervious (Acres):</b>	<b>2.55</b>
<b>Impervious Acres Treated:</b>		<b>0.77</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE:** Additional information is needed to determine the treatment provided by this facility.

BMP ID Number	AB01BMP000118
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	2001
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	46.18
Total Impervious Area (Acres)	6.19
Total Impervious Area within City Limits (Acres)	2.72
I	13.00
Rv	0.17
Runoff Storage Volume (cf) (RS)	UNK
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
---	--

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>6.19</b>	<b>Town Owned Impervious (Acres):</b>	<b>2.72</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE: This BMP does not provide water quality treatment.**

BMP ID Number	AB01BMP000124
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	2001
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	6.63
Total Impervious Area (Acres)	3.13
Total Impervious Area within City Limits (Acres)	3.13
I	47.00
Rv	0.47
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>3.13</b>	<b>Town Owned Impervious (Acres):</b>	<b>3.13</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	





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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB02BMP000016
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	2000
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	5.49
Total Impervious Area (Acres)	4.33
Total Impervious Area within City Limits (Acres)	4.33
I	79.00
Rv	0.76
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>4.33</b>	<b>Town Owned Impervious (Acres):</b>	<b>4.33</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE: This BMP does not provide water quality treatment.**

BMP ID Number	AB03BMP000012
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	2001
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	2.09
Total Impervious Area (Acres)	1.39
Total Impervious Area within City Limits (Acres)	1.39
I	66.00
Rv	0.64
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>1.39</b>	<b>Town Owned Impervious (Acres):</b>	<b>1.39</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB03BMP000139
BMP Type	Oil Grit Separator
BMP Type Code	XOGS
Plan Date	2003
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.65
Total Impervious Area (Acres)	0.00
Total Impervious Area within City Limits (Acres)	0.00
I	0.00
Rv	0.05
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.00</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.00</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB03BMP000184
BMP Type	Multiple Pond System
BMP Type Code	PMPS
Plan Date	2003
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	17.38
Total Impervious Area (Acres)	4.18
Total Impervious Area within City Limits (Acres)	4.18
I	24.00
Rv	0.27
Runoff Storage Volume (cf) (RS)	41077
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	2.71
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>4.18</b>	<b>Town Owned Impervious (Acres):</b>	<b>4.18</b>
<b>Impervious Acres Treated:</b>		<b>4.18</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE:** Additional information is needed to determine the treatment provided by this facility.

BMP ID Number	AB03BMP000186
BMP Type	Submerged Gravel Wetland
BMP Type Code	MSGW
Plan Date	UNK
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	10.37
Total Impervious Area (Acres)	6.26
Total Impervious Area within City Limits (Acres)	6.26
I	60.00
Rv	0.59
Runoff Storage Volume (cf) (RS)	UNK
Pe Treated by BMP (inches) (Pe)	

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>			
<b>Total Impervious (Acres):</b>	6.26	<b>Town Owned Impervious (Acres):</b>	6.26
<b>Impervious Acres Treated:</b>			



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE:** Additional information is needed to determine the treatment provided by this facility.

BMP ID Number	AB04BMP000049
BMP Type	UNK
BMP Type Code	XDED
Plan Date	Before 1999
BMP Inspection Status	Fail
GIS Drainage Area (Acres)	13.70
Total Impervious Area (Acres)	5.60
Total Impervious Area within City Limits (Acres)	5.60
I	41.00
Rv	0.42
Runoff Storage Volume (cf) (RS)	UNK
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>5.60</b>	<b>Town Owned Impervious (Acres):</b>	<b>5.60</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB04BMP000052
BMP Type	Shallow Marsh
BMP Type Code	WSHW
Plan Date	2002
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	5.23
Total Impervious Area (Acres)	0.52
Total Impervious Area within City Limits (Acres)	0.52
I	10.00
Rv	0.14
Runoff Storage Volume (cf) (RS)	9652
Pe Treated by BMP (inches) (Pe)	2.60

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	5.16
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>2.60</b>	
<b>Total Impervious (Acres):</b>	<b>0.52</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.52</b>
<b>Impervious Acres Treated:</b>		<b>0.72</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB04BMP000053
BMP Type	Other - Conveyance Swale
BMP Type Code	XOTH
Plan Date	2002
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	4.73
Total Impervious Area (Acres)	0.01
Total Impervious Area within City Limits (Acres)	0.01
I	0.00
Rv	0.05
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

Construction Purpose:		Baseline	
Pe Treated by BMP (inches):		0.00	
Total Impervious (Acres):	0.01	Town Owned Impervious (Acres):	0.01
Impervious Acres Treated:		0.00	





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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB04BMP000054
BMP Type	Other - Conveyance Swale
BMP Type Code	XOTH
Plan Date	2002
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.72
Total Impervious Area (Acres)	0.08
Total Impervious Area within City Limits (Acres)	0.08
I	11.00
Rv	0.15
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

Construction Purpose:		Baseline	
Pe Treated by BMP (inches):		0.00	
Total Impervious (Acres):	0.08	Town Owned Impervious (Acres):	0.08
Impervious Acres Treated:		0.00	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE: This BMP does not provide water quality treatment.**

BMP ID Number	AB04BMP000055
BMP Type	Other - Conveyance Swale
BMP Type Code	XOTH
Plan Date	2002
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.47
Total Impervious Area (Acres)	0.00
Total Impervious Area within City Limits (Acres)	0.00
I	0.00
Rv	0.05
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.00</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.00</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB04BMP000109
BMP Type	Infiltration Trench
BMP Type Code	ITRN
Plan Date	2004
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	1.53
Total Impervious Area (Acres)	1.37
Total Impervious Area within City Limits (Acres)	1.37
I	89.00
Rv	0.85
Runoff Storage Volume (cf) (RS)	2465
Pe Treated by BMP (inches) (Pe)	0.50

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.50
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.50</b>	
<b>Total Impervious (Acres):</b>	<b>1.37</b>	<b>Town Owned Impervious (Acres):</b>	<b>1.37</b>
<b>Impervious Acres Treated:</b>		<b>0.69</b>	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB04BMP000110
BMP Type	Underground Filter
BMP Type Code	FUND
Plan Date	2004
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.19
Total Impervious Area (Acres)	0.17
Total Impervious Area within City Limits (Acres)	0.17
I	90.00
Rv	0.86
Runoff Storage Volume (cf) (RS)	960
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	1.57
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.17</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.17</b>
<b>Impervious Acres Treated:</b>		<b>0.17</b>	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB04BMP000111
BMP Type	Underground Filter
BMP Type Code	FUND
Plan Date	2004
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.23
Total Impervious Area (Acres)	0.21
Total Impervious Area within City Limits (Acres)	0.21
I	90.00
Rv	0.86
Runoff Storage Volume (cf) (RS)	960
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	1.29
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.21</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.21</b>
<b>Impervious Acres Treated:</b>		<b>0.21</b>	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB04BMP000147
BMP Type	Dry Swale
BMP Type Code	ODSW
Plan Date	2003
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.31
Total Impervious Area (Acres)	0.10
Total Impervious Area within City Limits (Acres)	0.10
I	32.00
Rv	0.34
Runoff Storage Volume (cf) (RS)	399
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	1.10
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.10</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.10</b>
<b>Impervious Acres Treated:</b>		<b>0.10</b>	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
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BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE:** Additional information is needed to determine the treatment provided by this facility.

BMP ID Number	AB04BMP000200
BMP Type	Bioretention
BMP Type Code	FBIO
Plan Date	UNK
BMP Inspection Status	Fail
GIS Drainage Area (Acres)	21.61
Total Impervious Area (Acres)	17.24
Total Impervious Area within City Limits (Acres)	17.24
I	80.00
Rv	0.77
Runoff Storage Volume (cf) (RS)	UNK
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
---	--

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>17.24</b>	<b>Town Owned Impervious (Acres):</b>	<b>17.24</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
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BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB05BMP000046
BMP Type	Impervious Surface Elimination (to pervious)
BMP Type Code	IMPP
Plan Date	2005
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.09
Total Impervious Area (Acres)	0.09
Total Impervious Area within City Limits (Acres)	0.09
I	100.00
Rv	0.95
Runoff Storage Volume (cf) (RS)	N/A
Pe Treated by BMP (inches) (Pe)	

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
---	--

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>			
<b>Total Impervious (Acres):</b>	0.09	<b>Town Owned Impervious (Acres):</b>	0.09
<b>Impervious Acres Treated:</b>			





**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
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BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE: This BMP does not provide water quality treatment.**

BMP ID Number	AB05BMP000084
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	1997
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	10.39
Total Impervious Area (Acres)	5.88
Total Impervious Area within City Limits (Acres)	5.56
I	57.00
Rv	0.56
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>5.88</b>	<b>Town Owned Impervious (Acres):</b>	<b>5.56</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB05BMP000102
BMP Type	Bioretention
BMP Type Code	FBIO
Plan Date	2003
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.66
Total Impervious Area (Acres)	0.65
Total Impervious Area within City Limits (Acres)	0.65
I	98.00
Rv	0.93
Runoff Storage Volume (cf) (RS)	448
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.19
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.65</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.65</b>
<b>Impervious Acres Treated:</b>		<b>0.65</b>	



CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB05BMP000148
BMP Type	Dry Swale
BMP Type Code	ODSW
Plan Date	2003
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.78
Total Impervious Area (Acres)	0.15
Total Impervious Area within City Limits (Acres)	0.15
I	19.00
Rv	0.22
Runoff Storage Volume (cf) (RS)	460
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.87
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

Construction Purpose:		Baseline	
Pe Treated by BMP (inches):		1.00	
Total Impervious (Acres):	0.15	Town Owned Impervious (Acres):	0.15
Impervious Acres Treated:		0.15	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB05BMP000167
BMP Type	Extended Detention Structure, Wet
BMP Type Code	PWED
Plan Date	2001
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	5.38
Total Impervious Area (Acres)	1.21
Total Impervious Area within City Limits (Acres)	1.21
I	23.00
Rv	0.26
Runoff Storage Volume (cf) (RS)	7492
Pe Treated by BMP (inches) (Pe)	1.50

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	1.70
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.50</b>	
<b>Total Impervious (Acres):</b>	<b>1.21</b>	<b>Town Owned Impervious (Acres):</b>	<b>1.21</b>
<b>Impervious Acres Treated:</b>		<b>1.36</b>	



## **CITY OF ABERDEEN**

### **NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS**

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

# **IMPERVIOUS AREA RESTORATION WORK PLAN YEAR 3**

## **APPENDIX B**

### **BMP Pe DOCUMENTATION**

# Stormwater Management Report

**Frito-Lay, Inc.  
Commercial Vehicle Storage**

**800 Hickory Drive  
Aberdeen, MD 21001**

**August 2014**



Prepared for:

**Frito-Lay, Inc.  
c/o The Haskell Company  
111 Riverside Avenue  
Jacksonville, FL 32202  
(904) 791-4500**

Prepared by:

**KCI Technologies, Inc.  
1352 Marrows Road  
Suite 100  
Newark, DE 19711  
(302) 731-9176**

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3487, EXPIRATION DATE: 7/03/2016.



KCI Job No 27065506B



Project: Frito Lay - Aberdeen - Commercial Vehicle Storage  
 J.O. 27065506B  
 By: JMS  
 Checked: \_\_\_\_\_ Date: 8/27/2014  
 Date: \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### Submerged Gravel Wetland Facility 1 - AB19BMP000027

Drainage Area to Facility = 1.865 Acres  
 Impervious = 1.597 Acres  
 Pervious = 0.268 Acres

#### Total Facility Storage Requirements:

Target Pe = 2 "  
 $ESD_v = \frac{(Pe)(R_v)(A)}{12}$   $R_v = 0.05 + 0.009(I)$   
 $R_v = 0.05 + 0.009 (85.630027)$   
 $R_v = 0.82067$   
 $ESD_v = \frac{3.0611}{12}$   
 $ESD_v = 0.255092 \text{ Ac/Ft}$  or **11,112 Cubic Feet**

Max Pe = 2.7 "  
 $ESD_v = \frac{(Pe)(R_v)(A)}{12}$   
 $ESD_v = \frac{4.132485}{12}$   
 $ESD_v = 0.344374 \text{ Ac/Ft}$  or **15,001 Cubic Feet**

#### Facility Geometry:

Facility Surface Area = 5145 Square Feet  
 Ponding Area = 6258 Square Feet  
 Ponding Depth = 1 Feet

Check to ensure facility is  $\geq 2\%$  of the contributing area:  
 $\frac{5,145}{81,239} = 6\%$

#### Facility Storage:

5,702 Cubic Feet of Storage Above Filter Media  
 Media thickness = 3 feet below facility bottom  
 $\frac{5,145}{5,702} \times \frac{3}{6,174} \times 0.4 = \frac{6174}{11,876}$   
 5,702 + 6,174 = 11,876 Cubic Feet of Total Storage for Facility

#### Required Temporary Storage Volume Above Facility:

Af / Ai = Required Surface Storage Percentage  
 $\frac{5,145}{69,565} = 7\%$   
 Af = 5,145 s.f.  
 Ai = 69,565 s.f.

Using the Table for SHA-BSM, the Required

Storage Percentage = 7%  
 $11,112 \text{ c.f.} \times 7\% = 778 \text{ c.f. of Temporary Surface Storage Required with SHA-BSM}$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility  
 $11,112 \text{ c.f.} \times 75\% = 8,334 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$

Total Temporary Storage Volume Provided Above Facility = 5,702 c.f.  
 Total Temporary Storage Volume Provided Below Facility = 6,174 c.f.  
 Total Temporary Storage Volume Provided = 11,876 c.f.  
 Maximum Storage Volume Allowed = 15,001 c.f.

Total Credited Volume towards ESD Requirement =	11,876 c.f.
---	-------------

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.



# Stormwater Management Report

## Frito-Lay, Inc. Warehouse Expansion

800 Hickory Drive  
Aberdeen, MD

February 2014



Prepared for:

Frito-Lay, Inc.  
c/o The Haskell Company  
111 Riverside Avenue  
Jacksonville, FL 32202

Prepared by:

KCI Technologies, Inc.  
1352 Marrows Road  
Suite 100  
Newark, DE 19711

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY  
THAT THESE DOCUMENTS WERE PREPARED OR  
APPROVED BY ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE  
STATE OF MARYLAND, LICENSE NO. 26990,  
EXPIRATION DATE: 12/21/2015.



KCI Job No 27065506A





Project: Frito Lay - Aberdeen  
 J.O. \_\_\_\_\_  
 By: CEM Dat 2/27/2014  
 Checked: \_\_\_\_\_ Dat \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretenention Facility # 1 - AB19BMP000097

Drainage Area to Facility = 0.476 Acres  
 Impervious = 0.395 Acres  
 Pervious = 0.081 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,000 / 20,735 = 10 \%$$

Facility Storage:

2,250 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $2,000 \times 2 \times 0.4 = 1600$  Cubic Feet of Storage within Filter Media  
 $2,250 + 1,600 = 3,850$  Cubic Feet of Total Storage for Facility

**Total Facility Storage Requirement:**

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(82.983193) \\ & & Rv &= 0.7968 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.7968 \times 0.476$$

$$\text{ESDv} = \frac{0.68274}{12}$$

$$\text{ESDv} = 0.056895 \text{ Ac/Ft} \quad \text{or} \quad 2,478 \text{ Cubic Feet}$$

**Required Temporary Storage Volume Above Facility:**

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 2,000 \text{ s.f.} \\ & & \text{Ai} &= 17,206 \text{ s.f.} \\ 2,000 / 17,206 &= 12 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 43\% \\ 2,478 \text{ c.f.} \times 43\% = 1,066 \text{ C.F. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

$$\begin{aligned} \text{ESDv must be Provided Above the Facility} \\ 2,478 \times 75\% = 1,859 \text{ c.f.} \end{aligned}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 2,250 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,250 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 3,000 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (3,000)(12) / (0.7968)(0.476)$$

$$PE = 2.18''$$



Project: Frito Lay - Aberdeen  
 J.O. \_\_\_\_\_  
 By: CEM Dat 2/26/2014  
 Checked: \_\_\_\_\_ Dat \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretenention Facility # 2 - AB19BMP000098

Drainage Area to Facility = 0.491 Acres  
 Impervious = 0.404 Acres  
 Pervious = 0.087 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$\frac{2,000}{21,388} = 9\%$$

Facility Storage:

2,250 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $\frac{2,000}{2,250} \times 2 \times 0.4 = 1600$  Cubic Feet of Storage within Filter Media  
 $2,250 + 1,600 = 3,850$  Cubic Feet of Total Storage for Facility

**Total Facility Storage Requirement:**

$$\text{ESDv} = \frac{(Pe)(Rv)(A)}{12}$$

Pe = 1.8 "  
 Rv = 0.05 + 0.009(I)  
 Rv = 0.05 + 0.009 ( 82.281059 )  
 Rv = 0.7905

$$\text{ESDv} = 1.8 \times 0.7905 \times 0.491$$

$$\text{ESDv} = \frac{0.69867}{12}$$

$$\text{ESDv} = 0.058223 \text{ Ac/Ft} \quad \text{or} \quad 2,536 \text{ Cubic Feet}$$

**Required Temporary Storage Volume Above Facility:**

Af / Ai = Required Surface Storage Percentage Af = 2,000 s.f.  
 Ai = 17,598 s.f.  
 $\frac{2,000}{17,598} = 11\%$

Using the Table for SHA-BSM, the Required

Storage Percentage = 46%  
 $2,536 \text{ c.f.} \times 46\% = 1,167 \text{ c.f. of Temporary Surface Storage Required with SHA BSM}$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,536 \times 75\% = 1,902 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 2,250 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = \frac{2,250}{0.75}$$

$$\text{Total Credited Volume towards ESD Requirement} = 3,000 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$\text{PE} = \frac{(\text{ESDv})(12)}{(Rv)(A)}$$

$$\text{PE} = \frac{(3,000)(12)}{(0.7905)(0.491)}$$

$$\text{PE} = 2.13 "$$



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## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility # 3 - AB19BMP000099

Drainage Area to Facility = 0.496 Acres  
 Impervious = 0.398 Acres  
 Pervious = 0.098 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,000 / 21,606 = 9 \%$$

Facility Storage:

2,250 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $2,000 \times 2 \times 0.4 = 1600$  Cubic Feet of Storage within Filter Media  
 $2,250 + 1,600 = 3,850$  Cubic Feet of Total Storage for Facility

Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(80.241935) \\ & & Rv &= 0.7722 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.7722 \times 0.496$$

$$\text{ESDv} = \frac{0.6894}{12}$$

$$\text{ESDv} = 0.05745 \text{ Ac/Ft} \quad \text{or} \quad 2,503 \text{ Cubic Feet}$$

Required Temporary Storage Volume Above Facility:

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 2,000 \text{ s.f.} \\ & & \text{Ai} &= 17,337 \text{ s.f.} \\ 2,000 / 17,337 &= 12 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 50\% \\ 2,503 \text{ c.f.} \times 50\% = 1,251 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,503 \times 75\% = 1,877 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 2,250 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,250 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 3,000 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided for Treating 100% of the Impervious Draining to the Facility. The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (3,000)(12) / (0.7722)(0.496)$$

$$PE = 2.16''$$



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## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretenention Facility # 4 - AB19BMP000100

Drainage Area to Facility = 0.408 Acres  
 Impervious = 0.34 Acres  
 Pervious = 0.068 Acres

Facility Surface Area = 1,700 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$1,700 / 17,772 = 10 \%$$

Facility Storage:

1,934 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $1,700 \times 2 \times 0.4 = 1360$  Cubic Feet of Storage within Filter Media  
 $1,934 + 1,360 = 3,294$  Cubic Feet of Total Storage for Facility

### Total Facility Storage Requirement:

$$\text{ESDv} = \frac{(Pe)(Rv)(A)}{12}$$

$Pe = 1.8 "$   
 $Rv = 0.05 + 0.009(I)$   
 $Rv = 0.05 + 0.009 ( 83.333333 )$   
 $Rv = 0.8$

$$\text{ESDv} = 1.8 \times 0.8 \times 0.408$$

$$\text{ESDv} = \frac{0.58752}{12}$$

$$\text{ESDv} = 0.04896 \text{ Ac/Ft} \quad \text{or} \quad 2,133 \text{ Cubic Feet}$$

### Required Temporary Storage Volume Above Facility:

$Af / Ai = \text{Required Surface Storage Percentage}$   
 $Af = 1,700 \text{ s.f.}$   
 $Ai = 14,810 \text{ s.f.}$   
 $1,700 / 14,810 = 11 \%$

Using the Table for SHA-BSM, the Required

Storage Percentage = 55%  
 $2,133 \text{ c.f.} \times 55\% = 1,173 \text{ c.f. of Temporary Surface Storage Required}$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,133 \times 75\% = 1,600 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 1,934 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,934 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,578 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided for Treating 100% of the Impervious Draining to the Facility. The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (ESDv)(12) / (Rv)(A)$$

$$PE = ( 2,578 )(12) / ( 0.8 )( 0.408 )$$

$$PE = 2.18 "$$



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## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretenation Facility #5 - AB19BMP000101

Drainage Area to Facility = 0.483 Acres  
 Impervious = 0.403 Acres  
 Pervious = 0.08 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,000 / 21,039 = 10 \%$$

Facility Storage:

2,175 Cubic Feet of Storage Above Filter Media

Media thickness = 2 feet below facility bottom

$$2,000 \times 2 \times 0.4 = 1600 \text{ Cubic Feet of Storage within Filter Media}$$

$$2,175 + 1,600 = 3,775 \text{ Cubic Feet of Total Storage for Facility}$$

### **Total Facility Storage Requirement:**

$$\text{ESDv} = \frac{(Pe)(Rv)(A)}{12}$$

$Pe = 1.8 \text{ ''}$   
 $Rv = 0.05 + 0.009(l)$   
 $Rv = 0.05 + 0.009 (83.436853)$   
 $Rv = 0.8009$

$$\text{ESDv} = 1.8 \times 0.8009 \times 0.483$$

$$\text{ESDv} = \frac{0.69633}{12}$$

$$\text{ESDv} = 0.058028 \text{ Ac/Ft or } 2,528 \text{ Cubic Feet}$$

### **Required Temporary Storage Volume Above Facility:**

$A_f / A_i = \text{Required Surface Storage Percentage}$   
 $A_f = 2,000 \text{ s.f.}$   
 $A_i = 17,555 \text{ s.f.}$   
 $2,000 / 17,555 = 11 \%$

Using the Table for SHA-BSM, the Required

Storage Percentage = 59%

$$2,528 \text{ c.f.} \times 59\% = 1,491 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,528 \times 75\% = 1,896 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

Total Temporary Storage Volume Provided Above Facility = 2,175 c.f.

Total Credited Volume towards ESD Requirement = 2,175 / 0.75

Total Credited Volume towards ESD Requirement = 2,900 c.f.

Therefore, the Total Required Temporary Surface Volume has been Provided

for Treating 100% of the Impervious Draining to the Facility.

The Facility does not Require the use of SHA-BSM.

### **PE for Surface Storage of Facility**

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (2,900)(12) / (0.8009)(0.483)$$

$$PE = 2.07 \text{ ''}$$



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## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility #6 - AB19BMP000102

Drainage Area to Facility = 0.488 Acres  
 Impervious = 0.389 Acres  
 Pervious = 0.099 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,000 / 21,257 = 9 \%$$

Facility Storage:

2,250 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $2,000 \times 2 \times 0.4 = 1600$  Cubic Feet of Storage within Filter Media  
 $2,250 + 1,600 = 3,850$  Cubic Feet of Total Storage for Facility

Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(79.713115) \\ & & Rv &= 0.7674 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.7674 \times 0.488$$

$$\text{ESDv} = \frac{0.6741}{12}$$

$$\text{ESDv} = 0.056175 \text{ Ac/Ft} \quad \text{or} \quad 2,447 \text{ Cubic Feet}$$

Required Temporary Storage Volume Above Facility:

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 2,000 \text{ s.f.} \\ & & \text{Ai} &= 16,945 \text{ s.f.} \\ 2,000 / 16,945 &= 12 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 50\% \\ 2,447 \text{ c.f.} \times 50\% = 1,223 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,447 \times 75\% = 1,835 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 2,250 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,250 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 3,000 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (3,000)(12) / (0.7674)(0.488)$$

$$PE = 2.21''$$



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## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretenention Facility #7 - AB19BMP000103

Drainage Area to Facility = 0.492 Acres  
 Impervious = 0.445 Acres  
 Pervious = 0.047 Acres

Facility Surface Area = 2,200 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,200 / 21,432 = 10 \%$$

Facility Storage:

2,464 Cubic Feet of Storage Above Filter Media

Media thickness = 2 feet below facility bottom

$$2,200 \times 2 \times 0.4 = 1760 \text{ Cubic Feet of Storage within Filter Media}$$

$$2,464 + 1,760 = 4,224 \text{ Cubic Feet of Total Storage for Facility}$$

### Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(90.447154) \\ & & Rv &= 0.864 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.864 \times 0.492$$

$$\text{ESDv} = \frac{0.76518}{12}$$

$$\text{ESDv} = 0.063765 \text{ Ac/Ft or } 2,778 \text{ Cubic Feet}$$

### Required Temporary Storage Volume Above Facility:

$$\begin{aligned} A_f / A_i &= \text{Required Surface Storage Percentage} & A_f &= 2,200 \text{ s.f.} \\ & & A_i &= 19,384 \text{ s.f.} \\ 2,200 / 19,384 &= 11 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\begin{aligned} \text{Storage Percentage} &= 50\% \\ 2,778 \text{ c.f.} \times 50\% &= 1,389 \text{ c.f. of Temporary Surface Storage Required} \end{aligned}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,778 \times 75\% = 2,083 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

Total Temporary Storage Volume Provided Above Facility =	2,464 c.f.
Total Credited Volume towards ESD Requirement =	2,464 / 0.75
Total Credited Volume towards ESD Requirement =	3,285 c.f.

Therefore, the Total Required Temporary Surface Volume has been Provided for Treating 100% of the Impervious Draining to the Facility. The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$\begin{aligned} PE &= (\text{ESDv})(12) / (Rv)(A) \\ PE &= (3,285)(12) / (0.864)(0.492) \\ PE &= 2.13'' \end{aligned}$$



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## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility #8 - AB19BMP000104

Drainage Area to Facility = 0.357 Acres  
 Impervious = 0.283 Acres  
 Pervious = 0.074 Acres

Facility Surface Area = 1,400 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$1,400 / 15,551 = 9 \%$$

#### Facility Storage:

1,613 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $1,400 \times 2 \times 0.4 = 1120$  Cubic Feet of Storage within Filter Media  
 $1,613 + 1,120 = 2,733$  Cubic Feet of Total Storage for Facility

#### Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(79.271709) \\ & & Rv &= 0.7634 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.7634 \times 0.357$$

$$\text{ESDv} = \frac{0.49059}{12}$$

$$\text{ESDv} = 0.040883 \text{ Ac/Ft} \quad \text{or} \quad 1,781 \text{ Cubic Feet}$$

#### Required Temporary Storage Volume Above Facility:

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 1,400 \text{ s.f.} \\ & & \text{Ai} &= 12,327 \text{ s.f.} \\ 1,400 / 12,327 &= 11 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 50\% \\ 1,781 \text{ c.f.} \times 50\% = 890 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$1,781 \times 75\% = 1,336 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 1,613 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,613 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,151 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

#### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (2,151)(12) / (0.7634)(0.357)$$

$$PE = 2.17''$$





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## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility #10- AB19BMP000105

Drainage Area to Facility = 0.304 Acres  
 Impervious = 0.184 Acres  
 Pervious = 0.12 Acres

Facility Surface Area = 1,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$1,000 / 13,242 = 8 \%$$

Facility Storage:

1,183 Cubic Feet of Storage Above Filter Media

Media thickness = 2 feet below facility bottom

$$1,000 \times 2 \times 0.4 = 800 \text{ Cubic Feet of Storage within Filter Media}$$

$$1,183 + 800 = 1,983 \text{ Cubic Feet of Total Storage for Facility}$$

Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(60.526316) \\ & & Rv &= 0.5947 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.5947 \times 0.304$$

$$\text{ESDv} = \frac{0.32544}{12}$$

$$\text{ESDv} = 0.02712 \text{ Ac/Ft or } 1,181 \text{ Cubic Feet}$$

Required Temporary Storage Volume Above Facility:

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 1,000 \text{ s.f.} \\ & & \text{Ai} &= 8,015 \text{ s.f.} \\ 1,000 / 8,015 &= 12 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\begin{aligned} \text{Storage Percentage} &= 46\% \\ 1,181 \text{ c.f.} \times 46\% &= 543 \text{ c.f. of Temporary Surface Storage Required} \end{aligned}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$1,181 \times 75\% = 886 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 1,183 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,183 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,577 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided for Treating 100% of the Impervious Draining to the Facility. The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (1,577)(12) / (0.5947)(0.304)$$

$$PE = 2.40''$$



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## Stormwater Management ESD Techniques and Facility Design

### **Micro-Bioretenention Facility #11 - AB19BMP000106**

Drainage Area to Facility = 0.486 Acres  
 Impervious = 0.414 Acres  
 Pervious = 0.072 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,000 / 21,170 = 9 \%$$

Facility Storage:

2,250 Cubic Feet of Storage Above Filter Media

Media thickness = 2 feet below facility bottom

$$2,000 \times 2 \times 0.4 = 1600 \text{ Cubic Feet of Storage within Filter Media}$$

$$2,250 + 1,600 = 3,850 \text{ Cubic Feet of Total Storage for Facility}$$

**Total Facility Storage Requirement:**

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(85.185185) \\ & & Rv &= 0.8167 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.8167 \times 0.486$$

$$\text{ESDv} = \frac{0.71442}{12}$$

$$\text{ESDv} = 0.059535 \text{ Ac/Ft} \quad \text{or} \quad 2,593 \text{ Cubic Feet}$$

**Required Temporary Storage Volume Above Facility:**

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 2,000 \text{ s.f.} \\ & & \text{Ai} &= 18,034 \text{ s.f.} \\ 2,000 / 18,034 &= 11 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\begin{aligned} \text{Storage Percentage} &= 50\% \\ 2,593 \text{ c.f.} \times 50\% &= 1,297 \text{ c.f. of Temporary Surface Storage Required} \end{aligned}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,593 \times 75\% = 1,945 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 2,250 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,250 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 3,000 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### **PE for Surface Storage of Facility**

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (3,000)(12) / (0.8167)(0.486)$$

$$PE = 2.08''$$



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## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility #12 - AB19BMP000107

Drainage Area to Facility = 0.222 Acres  
 Impervious = 0.164 Acres  
 Pervious = 0.058 Acres

Facility Surface Area = 1,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$1,000 / 9,670 = 10 \%$$

Facility Storage:

1,183 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $1,000 \times 2 \times 0.4 = 800$  Cubic Feet of Storage within Filter Media  
 $1,183 + 800 = 1,983$  Cubic Feet of Total Storage for Facility

Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(73.873874) \\ & & Rv &= 0.7149 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.7149 \times 0.222$$

$$\text{ESDv} = \frac{0.28566}{12}$$

$$\text{ESDv} = 0.023805 \text{ Ac/Ft} \quad \text{or} \quad 1,037 \text{ Cubic Feet}$$

Required Temporary Storage Volume Above Facility:

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 1,000 \text{ s.f.} \\ & & \text{Ai} &= 7,144 \text{ s.f.} \\ 1,000 / 7,144 &= 14 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 45\% \\ 1,037 \text{ c.f.} \times 45\% = 467 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$1,037 \times 0.75 = 778 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 1,183 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,183 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,183 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$\begin{aligned} \text{PE} &= (\text{ESDv})(12) / (Rv)(A) \\ \text{PE} &= (1,183)(12) / (0.7149)(0.222) \\ \text{PE} &= 2.05'' \end{aligned}$$



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## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility #9 - AB19BMP000168

Drainage Area to Facility = 0.488 Acres  
 Impervious = 0.288 Acres  
 Pervious = 0.2 Acres

Facility Surface Area = 1,500 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$1,500 / 21,257 = 7 \%$$

Facility Storage:

1,720 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $1,500 \times 2 \times 0.4 = 1200$  Cubic Feet of Storage within Filter Media  
 $1,720 + 1,200 = 2,920$  Cubic Feet of Total Storage for Facility

Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(P_e)(R_v)(A)}{12} & P_e &= 1.8'' \\ & & R_v &= 0.05 + 0.009(I) \\ & & R_v &= 0.05 + 0.009(59.016393) \\ & & R_v &= 0.5811 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.5811 \times 0.488$$

$$\text{ESDv} = \frac{0.51048}{12}$$

$$\text{ESDv} = 0.04254 \text{ Ac/Ft} \quad \text{or} \quad 1,853 \text{ Cubic Feet}$$

Required Temporary Storage Volume Above Facility:

$$\begin{aligned} A_f / A_i &= \text{Required Surface Storage Percentage} & A_f &= 1,500 \text{ s.f.} \\ & & A_i &= 12,545 \text{ s.f.} \\ 1,500 / 12,545 &= 12 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 50\% \\ 1,853 \text{ c.f.} \times 50\% = 927 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$1,853 \times 75\% = 1,390 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 1,720 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,720 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,293 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (R_v)(A)$$

$$PE = (2,293)(12) / (0.5811)(0.488)$$

$$PE = 2.23''$$

## **SWM Record Computations**

**SUBMIT TO:**

**City of Aberdeen  
Department of Planning and  
Community Development**

**PROJECT:**

**LIDL - Aberdeen  
MD142108**

**PROJECT LOCATION:**

**621 S. Philadelphia Blvd (U.S. Route 40)  
Aberdeen, MD  
City of Aberdeen  
Harford County**

**OWNER/DEVELOPER:**

**LIDL US OPERATIONS, LLC  
3500 South Clark St.  
Arlington, VA, 22202**

**Bohler Engineering**  
901 Dulaney Valley Road  
Suite 801  
Towson, MD, 21204

Phone: 410-821-7900  
Fax : 410-821-7987



I, Joseph J. Ucciferro, P.E., hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 36064, Expiration Date: 6/26/2020.

January 4, 2019

## Bioretention 1 - AB20BMP000051

1/4/2019

### BASE DATA

Drainage Area = 1.58 Acres.

Total Impervious Area on site= 1.16 Acres.

Soils Type on the site : Type B and C soils

### COMPUTATION OF WATER QUALITY VOLUME

Water Quality Volume is given by:

$$WQ_v = (P \cdot R_v \cdot A) / 12$$

Where P = rainfall depth

$$= 1.8 \text{ "}$$

Total Drainage Area = 1.58 Acres

$R_v$  = Volumetric runoff Coefficient

$$= 0.05 + 0.009(I)$$

where I = Percentage Impervious Cover

$$= (1.16 / 1.58) \cdot 100$$

$$= 73.42 \%$$

$$R_v = 0.05 + 0.009(73.42)$$

$$= 0.711$$

Thus, the Water Quality Volume is given by :

$$WQ_v = (1.8 \cdot 0.71 \cdot 1.58) / 12$$

$$= 0.168 \text{ Ac -ft.}$$

Thus, the Total Water Quality Volume required for this Bioretention is (75% of total WQv):

$$WQ_v = 0.168 \text{ Acre-feet}$$

$$7338 \text{ cf} \times 75\% =$$

$$5503 \text{ cf}$$

## Bioretention 2 - AB20BMP000052

1/4/2019

### BASE DATA

Drainage Area = 2.01 Acres.

Total Impervious Area on site= 1.25 Acres.

Soils Type on the site : Type B and C soils

### COMPUTATION OF WATER QUALITY VOLUME

Water Quality Volume is given by:

$$WQ_v = (P \cdot R_v \cdot A) / 12$$

Where P = rainfall depth

$$= 1.8 \text{ "}$$

Total Drainage Area = 2.01 Acres

$R_v$  = Volumetric runoff Coefficient

$$= 0.05 + 0.009(I)$$

where I = Percentage Impervious Cover

$$= (1.25 / 2.01) \cdot 100$$

$$= 62.19 \%$$

$$R_v = 0.05 + 0.009(62.19)$$

$$= 0.610$$

Thus, the Water Quality Volume is given by :

$$WQ_v = (1.8 \cdot 0.61 \cdot 2.01) / 12$$

$$= 0.184 \text{ Ac -ft.}$$

Thus, the Total Water Quality Volume required for this pond is:

$$WQ_v = 0.184 \text{ Acre-feet} \quad 8007 \text{ cf} \quad \times \quad 75\% =$$

6006 cf
---------

**M-6 MBIO-1 - AB20BMP000053**

SWM As-Builts

Location:

Calculate  $R_v$ :

Drainage Area, A	0.46	acres	20000	square feet	(20,000 sf Max, not including facility)
Total Proposed Impervious Area	0.33	acres	14375	square feet	
Impervious Area Percentage, $I_{post}$	71.9%				
Runoff Coefficient, $R_v = 0.05 + 0.009(I_{post})$	0.697				

Calculate ESD Volumes Provided Using Micro-Bioretenention:

Filter Bed Area ( $A_f$ ) Sizing $A_f$  must be a minimum of 2% of DA

$A_{f(min)} = 0.02 * DA =$	400	sf
Area of Filter Bed Provided =	775	sf

Stage Storage Table for Micro-Bioretenention

ELEV	AREA (sf)	AVG AREA (sf)	INC ELEV DIFF (ft)	TOTAL DEPTH (ft)	INTERVAL STOR. (cf)	TOTAL STOR. (cf)	TOTAL STOR. (ac-ft)
61.00	775					0	0.00000
		878	0.5		439		
61.50	980			0.5		439	0.01007
		1,080	0.25		270		
61.75	1,180			0.75		709	0.01627
		1,313	0.25		328		
62.00	1,445			1.00		709	0.01627

Ponding depth =	1.00	ft	(1 ft Max)
Volume Provided prior to filtration =	709	cf	
Depth of Mulch =	0.25	ft	
Depth of Filter Media =	4.0	ft	(2 - 4 ft)
Depth of Stone to Invert of Underdrain =	0.8	ft	(Including 4" pea gravel bridging layer)
Volume Provided within mulch, filter and stone layers			
+ 4 + 0.8) * 775 * 0.4 =	1,566	cf	
Total Volume Provided in Facility =	2,274	cf	

Maximum Amount of Runoff that can be captured = Runoff from 1-yr, 24 hr storm ( $P = 2.6$ )

Max ESDv = $(P)(R_v)(A)/12 =$	3,020	
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ESDv Provided by Micro-Bioretenention = (Use smaller of two volumes)	2,274	cf
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$P_E$ (in) Achieved =	2.0	
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**M-6 MBIO-3 - AB20BMP000054**

SWM As-Builts

Location:

Calculate  $R_v$ :

Drainage Area, A	0.13	acres	5663	square feet	(20,000 sf Max, not including facility)
Total Proposed Impervious Area	0.07	acres	3049	square feet	
Impervious Area Percentage, $I_{post}$	53.8%				
Runoff Coefficient, $R_v = 0.05 + 0.009(I_{post})$	0.535				

Calculate ESD Volumes Provided Using Micro-Bioretenention:

Filter Bed Area ( $A_f$ ) Sizing $A_f$  must be a minimum of 2% of DA

$A_{f(min)} = 0.02 * DA =$	113	sf
Area of Filter Bed Provided =	845	sf

Stage Storage Table for Micro-Bioretenention

ELEV	AREA (sf)	AVG AREA (sf)	INC ELEV DIFF (ft)	TOTAL DEPTH (ft)	INTERVAL STOR. (cf)	TOTAL STOR. (cf)	TOTAL STOR. (ac-ft)
61.75	845					0	0.00000
62.00	1,055	950	0.3	0.3	238	238	0.00545
62.50	1,390	1,223	0.50	0.75	611	849	0.01948
62.75	1,560	1,475	0.25	1.00	369	1,218	0.02795

Elev of mulch approx. 61.60 +/-

Ponding depth =	1.00	ft	(1 ft Max)
Volume Provided prior to filtration =	1,218	cf	
Depth of Mulch =	0.25	ft	
Depth of Filter Media =	2.0	ft	(2 - 4 ft)
Depth of Stone to Invert of Underdrain =	1.0	ft	(Including 4" pea gravel bridging layer)
Volume Provided within mulch, filter and stone layers			
$5 + 2 + 1) * 845 * 0.4 =$	1,099	cf	
Total Volume Provided in Facility =	2,316	cf	

Maximum Amount of Runoff that can be captured = Runoff from 1-yr, 24 hr storm ( $P = 2.6$ )

Max ESDv = $(P)(R_v)(A)/12 =$	656	
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ESDv Provided by Micro-Bioretenention = (Use smaller of two volumes)	656	cf
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$P_E$ (in) Achieved =	2.6	
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**M-6 MBIO-4 - AB20BMP000055**

SWM As-Builts

Location:

Calculate  $R_v$ :

Drainage Area, A	0.19	acres	8196	square feet	(20,000 sf Max, not including facility)
Total Proposed Impervious Area	0.17	acres	7405	square feet	
Impervious Area Percentage, $I_{post}$	90.4%				
Runoff Coefficient, $R_v = 0.05 + 0.009(I_{post})$	0.86				

Calculate ESD Volumes Provided Using Micro-Bioretenention:

Filter Bed Area ( $A_f$ ) Sizing $A_f$  must be a minimum of 2% of DA

$A_{f(min)} = 0.02 * DA =$	164	sf
Area of Filter Bed Provided =	450	sf

Stage Storage Table for Micro-Bioretenention

ELEV	AREA (sf)	AVG AREA (sf)	INC ELEV DIFF (ft)	TOTAL DEPTH (ft)	INTERVAL STOR. (cf)	TOTAL STOR. (cf)	TOTAL STOR. (ac-ft)
58.00	450					0	0.00000
58.25	560	505	0.3	0.3	126	126	0.00290
58.50	660	610	0.25	0.50	153	279	0.00640

Ponding depth =	0.50	ft	(1 ft Max)
Volume Provided prior to filtration =	279	cf	
Depth of Mulch =	0.25	ft	
Depth of Filter Media =	3.0	ft	(2 - 4 ft)
Depth of Stone to Invert of Underdrain =	1.0	ft	(Including 4" pea gravel bridging layer)
Volume Provided within mulch, filter and stone layers			
$5 + 3 + 1) * 450 * 0.4 =$	765	cf	
Total Volume Provided in Facility =	1,044	cf	

Maximum Amount of Runoff that can be captured = Runoff from 1-yr, 24 hr storm ( $P = 2.6$ )

Max ESDv = $(P)(R_v)(A)/12 =$	1,533	
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ESDv Provided by Micro-Bioretenention = (Use smaller of two volumes)	1,044	cf
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$P_E$ (in) Achieved =	1.8
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**M-6 MBIO-5 - AB20BMP000056**

SWM As-Builts

Location:

Calculate  $R_v$ :

Drainage Area, A	0.22	acres	9583	square feet	(20,000 sf Max, not including facility)
Total Proposed Impervious Area	0.12	acres	5227	square feet	
Impervious Area Percentage, $I_{post}$	54.5%				
Runoff Coefficient, $R_v = 0.05 + 0.009(I_{post})$	0.54				

Calculate ESD Volumes Provided Using Micro-Bioretenention:

Filter Bed Area ( $A_f$ ) Sizing $A_f$  must be a minimum of 2% of DA

$A_{f(min)} = 0.02 * DA =$	192	sf
Area of Filter Bed Provided =	1,100	sf

Stage Storage Table for Micro-Bioretenention

ELEV	AREA (sf)	AVG AREA (sf)	INC ELEV DIFF (ft)	TOTAL DEPTH (ft)	INTERVAL STOR. (cf)	TOTAL STOR. (cf)	TOTAL STOR. (ac-ft)
58.00	1,100					0	0.00000
		1,230	0.3		308		
58.25	1,360			0.3		308	0.00706
		1,660	0.25		415		
58.50	1,960			0.50		723	0.01659

Ponding depth =	0.50	ft	(1 ft Max)
Volume Provided prior to filtration =	723	cf	
Depth of Mulch =	0.25	ft	
Depth of Filter Media =	2.0	ft	(2 - 4 ft)
Depth of Stone to Invert of Underdrain =	1.0	ft	(Including 4" pea gravel bridging layer)
Volume Provided within mulch, filter and stone layers			
+ 2 + 1) * 1100 * 0.4 =	1,430	cf	
Total Volume Provided in Facility =	2,153	cf	

Maximum Amount of Runoff that can be captured = Runoff from 1-yr, 24 hr storm ( $P = 2.6$ )

Max ESDv = $(P)(R_v)(A)/12 =$	1,123	
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ESDv Provided by Micro-Bioretenention = (Use smaller of two volumes)	1,123	cf
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$P_E$ (in) Achieved =	2.6	
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**M-6 MBIO-6 - AB20BMP000057**

SWM As-Builts

Location:

Calculate  $R_v$ :

Drainage Area, A	0.23	acres	9971	square feet	(20,000 sf Max, not including facility)
Total Proposed Impervious Area	0.05	acres	2259	square feet	
Impervious Area Percentage, $I_{post}$	22.7%				
Runoff Coefficient, $R_v = 0.05 + 0.009(I_{post})$	0.25				

Calculate ESD Volumes Provided Using Micro-Bioretenention:

Filter Bed Area ( $A_f$ ) Sizing $A_f$  must be a minimum of 2% of DA

$A_{f(min)} = 0.02 * DA =$	200	sf
Area of Filter Bed Provided =	200	sf

Stage Storage Table for Micro-Bioretenention

ELEV	AREA (sf)	AVG AREA (sf)	INC ELEV DIFF (ft)	TOTAL DEPTH (ft)	INTERVAL STOR. (cf)	TOTAL STOR. (cf)	TOTAL STOR. (ac-ft)
58.00	200					0	0.00000
58.25	205	203	0.3	0.3	51	51	0.00116
58.80	210	208	0.55	0.80	114	165	0.00378

MULCH AREA SHOWN AT VARYING ELEVATIC

Ponding depth =	0.80	ft	(1 ft Max)
Volume Provided prior to filtration =	165	cf	
Depth of Mulch =	0.25	ft	
Depth of Filter Media =	3.0	ft	(2 - 4 ft)
Depth of Stone to Invert of Underdrain =	1.0	ft	(Including 4" pea gravel bridging layer)
Volume Provided within mulch, filter and stone layers			
$5 + 3 + 1) * 200 * 0.4 =$	340	cf	
Total Volume Provided in Facility =	505	cf	

Maximum Amount of Runoff that can be captured = Runoff from 1-yr, 24 hr storm ( $P = 2.6$ )

Max ESDv = $(P)(R_v)(A)/12 =$	550	
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ESDv Provided by Micro-Bioretenention = (Use smaller of two volumes)	505	cf
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$P_E$ (in) Achieved =	2.4	
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## STORMWATER MANAGEMENT REPORT

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**Hampton Inn & LaQuinta Inn**

City of Aberdeen  
Harford County, Maryland

---

RECEIVED  
APR 22 2015

CITY OF ABERDEEN

**OWNER/DEVELOPER**

Crossroads Hospitality  
793 West Bel Air Avenue  
Aberdeen, Maryland 21001  
Attn: Mr. Nick Patel  
Phone: 410.272.6000



---

### Professional Certification

"I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 34672, Expiration Date: 08/23/2015."



PREPARED BY:  
**MORRIS & RITCHIE ASSOCIATES, INC.**  
ENGINEERS, ARCHITECTS, PLANNERS, SURVEYORS, AND LANDSCAPE ARCHITECTS  
3445-A Box Hill Corporate Center Drive  
Abingdon, Maryland 21009  
(410) 515-9000  
FAX (410) 515-9002  
CONTACT: Amy G. DiPietro, P.E., LEED AP  
MRA Project No. 18189

---

January 2015

Approved 5/7/15



Project: Aberdeen Hotel  
Job #: 18189  
Designed by: CEM  
Date: 12/31/2014  
Checked by: AGD

**Design of Micro-Bioretention Facility  
in Drainage Area 1a**  
**AB20BMP000109**



**Objective #1: Define the drainage area.**

Total Drainage Area (DA) =	9,386 sf	
Total Impervious Area (Ai) =	6,339 sf	
Impervious Percentage (I) =	67.5%	$I = A_i / DA$
Runoff Coefficient ( $R_v$ ) =	0.658	$R_v = 0.05 + 0.009 \times I \times 100$

**Objective #2: Determine the ESD Volume provided.**

Bottom Area of Ponding =	300 sf	Length =
Top Area of Ponding =	300 sf	Width =
Ponding Depth =	12"	
Ponding Volume =	300 cf	
Filter Area ( $A_f$ ) =	300 sf	
Planting Media Thickness =	2.0 ft.	
Storage within Planting Media =	240 cf	(assumes 40% porosity in planting media)
Total ESD <sub>v</sub> Provided =	540 cf	
Micro-bioretention facilities shall be sized to capture a minimum of 75% of ESD volume		
Total ESD <sub>v</sub> Credited =	720 cf	(ESD <sub>v</sub> provided / 75%)
Equivalent $P_E$ Provided =	1.4 in.	$P_E = (12 \times ESD_v) / (R_v \times DA)$



Project: Aberdeen Hotel  
Job #: 18189  
Designed by: CEM  
Date: 12/31/2014  
Checked by: AGD

**Design of Micro-Bioretention Facility  
in Drainage Area 2a**

**AB20BMP000110**



**Objective #1: Define the drainage area.**

Total Drainage Area (DA) =	18,187 sf	
Total Impervious Area (Ai) =	12,177 sf	
Impervious Percentage (I) =	67.0%	$I = A_i / DA$
Runoff Coefficient ( $R_v$ ) =	0.653	$R_v = 0.05 + 0.009 \times I \times 100$

**Objective #2: Determine the ESD Volume provided.**

Bottom Area of Ponding =	515 sf	Length =
Top Area of Ponding =	515 sf	Width =
Ponding Depth =	12"	
Ponding Volume =	515 cf	
Filter Area ( $A_f$ ) =	515 sf	
Planting Media Thickness =	2.0 ft.	
Storage within Planting Media =	412 cf	(assumes 40% porosity in planting media)
Total $ESD_v$ Provided =	927 cf	
Micro-bioretention facilities shall be sized to capture a minimum of 75% of ESD volume		
Total $ESD_v$ Credited =	1,236 cf	( $ESD_v$ provided / 75%)
Equivalent $P_E$ Provided =	1.2 in.	$P_E = (12 \times ESD_v) / (R_v \times DA)$





Project: Hamilton Reserve  
Job #: 17023  
Designed by DRS  
Date 1/14/2015  
Checked by: AGD

**Design of Bio-Swale Facility #2b  
in Drainage Area 2b  
(Offline Facility - see Flowmaster Outputs)**



AB20BMP000111

**Objective #1: Define the drainage area.**

Total Drainage Area (DA) =	20,728 sf	
Total Impervious Area (A <sub>i</sub> ) =	18,000 sf	
Impervious Percentage (I) =	86.8%	$I = A_i / DA$
Runoff Coefficient (R <sub>v</sub> ) =	0.832	$R_v = 0.05 + 0.009 \times I \times 100$

**Objective #2: Determine the ESD Volume provided.**

Total Filter Area (A <sub>f</sub> ) =	690 sf	Length = 220
Temporary Ponding Depth =	6"	Width = 8
Planting Media Thickness =	4.0 ft.	
Total ESD <sub>v</sub> Provided =	1,449 cf	
Equivalent P <sub>E</sub> Provided =	1.01 in.	$P_E = (12 \times ESD_v) / (R_v \times DA)$

**Objective #3: Determine the peak discharge flow rate for the ESD event (MDE Appendix D.10)**

Runoff Volume (Q <sub>a</sub> ) =	0.84 in.	$Q_a = P_E \times R_v$
Runoff Curve Number (CN) =	98	$CN = 1000 / [10 + 5P_E + 10Q_a - 10\sqrt{(Q_a^2 + 1.25Q_aP_E)}]$
Time of Concentration (T <sub>c</sub> ) =	5 min	assumed
Initial Abstraction (I <sub>a</sub> ) =	0.032	$I_a = 200 / CN - 2$
Unit Peak Discharge (q <sub>u</sub> ) =	1062	TR-55 Exhibit 4-II
Peak Flow Rate (Q <sub>ESD</sub> ) =	0.662 cfs	$Q_{ESD} = q_u \times DA(mi^2) \times Q_a$

10-yr Peak Discharge (Q<sub>10</sub>) = 1.20 cfs \* SEE FLOWMASTER OUTPUT FOR BYPASS MH 7

**Objective #4: Determine the swale velocity for the ESD and 10-yr events (Manning's Equation)**

Swale Geometry			ESD Event	10-yr Event
Width	8.0 ft.	Manning's	0.10	0.10
Side Slope	2:1	Depth	0.15 ft.	0.21 ft.
Slope	1.7% ✓	Discharge	0.661 cfs	1.20 cfs
		Velocity	0.531 fps	0.666 fps
			✓ < 1 fps	✓ < 4 fps



## Middelton Road Extension

From MD Route 22 and Beards Hill Road  
Aberdeen, MD 21001

### STORMWATER MANAGEMENT REPORT

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#### ENGINEERS CERTIFICATION

I HEREBY CERTIFY THAT ALL PROPOSED WORK SHOWN ON THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.28378, EXPIRATION DATE: 01/01/2021.



SIGNATURE

2/5/2019  
DATE

CHRISTOPHER R. MINK  
PRINT NAME



*Property Owner:*

Department of Public Works  
City of Aberdeen  
60 N. Parke Street  
Aberdeen, MD 21001  
Attn: Parley Hess

*Prepared by:*

CNA, LLC.  
1630 Robin Circle  
Forest Hill, Maryland 21050  
Office: 443-652-6160  
Contact: Bob Royer

---

February 2019

Area	GS1 - AB21BMP000002	Grass Swale #1	ESD Requirements			
Total Drainage Area =		34,924 SF	(	0.80	Acres +/-)	
Total Impervious Cover to Facility =		23,670 SF	(	0.54	Acres +/-)	67.8%
Rv= 0.05+0.009 (I)=	0.66					
B Soil =		7,344 SF	(	0.17	Acres +/-)	21.0%
C Soil =		18,536 SF	(	0.43	Acres +/-)	53.1%
D Soil		9,044 SF	(	0.21	Acres +/-)	25.9%
Target B Soil P <sub>E</sub> =	2.2	"	(Table 5.3)			
Target C Soil P <sub>E</sub> =	2.0	"				
Target D Soil P <sub>E</sub> =	1.8	"	Weighted Ave. Soil P <sub>E</sub> = 1.99			
Target ESDv =	[ 2.2 " x 0.21 + 2.0 " x 0.53 + 1.8 " x 0.26 ] x 0.66 x 34,924 /12'					
	=	3,823	CF			
Minimum ESDv=	1.0	x	0.66	x	34,924	\ 12 = 1,921 CF
Maximum ESDv=	2.69	x	0.66	x	34,924	\ 12 = 5,167 CF
Area shown on plan =	5,904	SF				
PE = ESDv x 12" / Rv x DA =	1,948	x12" /	0.66	x	34,924	= 1.01 "
Af = PE x DA / 15	1.99	x	34,924	/ 15	"= 1,249	SF Needed
Min A <sub>f</sub> =	2% of	34,924	=	698	SF	

Grass Swale #1	Facility	GS1
ESDv Treatment =	0.33 ' x	738 ' L x 8 ' W
	=	1948 CF

Total Storage Volume =	1,948	CF
ESDv Provided =	1,948	CF
1,948	CF	> 1,921 CF Facility Meets Minimum ESDv Requirements

Area	GS2 - AB21BMP000003	Grass Swale #2	ESD Requirements			
Total Drainage Area =		39,900 SF	(	0.92	Acres +/-)	
Total Impervious Cover to Facility =		11,208 SF	(	0.26	Acres +/-)	28.1%
Rv= 0.05+0.009 (I)=	0.30					
B Soil =		8,830 SF	(	0.20	Acres +/-)	22.1%
C Soil =		12,319 SF	(	0.28	Acres +/-)	30.9%
D Soil =		18,751 SF	(	0.43	Acres +/-)	47.0%
Target B Soil PE=	1.6					
Target C Soil PE=	1.6		(Table 5.3)			
Target D Soil P <sub>E</sub> =	1.2	"				
			Weighted Ave. Soil P <sub>E</sub> = 1.41			
Target ESDv =	[ 1.6 " x 0.22 + 1.6 " x 0.31 + 1.2 " x 0.47 ] x 0.30 x 39,900 / 12"					
	= 1,422	CF				
Minimum ESDv=	1.0 x 0.30 x 39,900 \ 12 =	1,007 CF				
Maximum ESDv=	2.69 x 0.30 x 39,900 \ 12 =	2,708 CF				
Area shown on plan =	7,800	SF				
PE = ESDv x 12" / Rv x DA =	2,574 x 12" / 0.30 x 39,900 =	2.56 "				
Af = PE x DA / 15	1.41 x 39,900 / 15 "=	4,443 SF Needed				
Min A <sub>f</sub> =	2% of 39,900 =	798 SF				

Grass Swale #2	Facility	GS2
ESDv Treatment = 0.33 ' x	975 ' L x	8 ' W
=	2574	CF

Total Storage Volume =	<b>2,574</b>	<b>CF</b>
ESDv Provided =	<b>2,574</b>	<b>CF</b>
<b>2,574</b>	<b>CF</b>	<b>&gt; 1,422 CF Facility Meets Minimum ESDv Requirements</b>

# **CITY OF ABERDEEN**

## **National Pollutant Discharge Elimination System General Permit For Discharges From Small Municipal Separate Storm Sewer Systems**

General Discharge Permit No. 13-IM-5500 / General NPDES Permit No. MDR055500  
Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

# **IMPERVIOUS AREA RESTORATION WORK PLAN YEAR 3**

Prepared By:

City of Aberdeen  
Department of Public Works  
60 North Parke Street  
Aberdeen, MD 21001



**OCTOBER 29, 2021**



## CITY OF ABERDEEN

### National Pollutant Discharge Elimination System General Permit For Discharges From Small Municipal Separate Storm Sewer Systems

General Discharge Permit No. 13-IM-5500 / General NPDES Permit No. MDR055500

Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

### IMPERVIOUS AREA RESTORATION WORK PLAN – YEAR 3

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## CITY OF ABERDEEN

### NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM PHASE II MS4 PERMIT

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

### IMPERVIOUS AREA RESTORATION WORK PLAN – YEAR 3

The City of Aberdeen is continuing to make updates to the Impervious Area Restoration Work Plan throughout the Permit cycle. The report below summarizes updates to the Year 1 and Year 2 Work Plan as well as activities in Year 3.

#### I. Develop Impervious Area Baseline Assessment

The City of Aberdeen's Fiscal Year 2020 Phase II MS4 Annual Report dated October 28, 2020 summarized the methodology for preparing the City's Baseline Area Impervious Assessment. As reported in the 2020 report, **Table 1** documents the City's total impervious area, total impervious acres treated by BMPs, and twenty percent of the untreated impervious area.

**TABLE 1 – 2004 IMPERVIOUS AREAS YEAR 2 <sup>1</sup>**

Category	Total Area (Acres)
<b>Total Impervious Area</b>	<b>988.51</b>
Impervious Area Treated by BMPs with Full Water Quality Treatment <sup>2</sup>	10.16
Impervious Area Treated by BMPs with Partial Water Quality Treatment <sup>3</sup>	10.23
Impervious Area Treated by Non-structural Practices	To Be Determined
Untreated Impervious Area	968.12
<b>Restoration Requirement (20% of Untreated Impervious Area)</b>	<b>193.62</b>

<sup>1</sup> Areas may continue to be refined during each reporting year as funding allows and as new data becomes available.

<sup>2</sup> BMPs with a  $P_E$  value  $\geq 1$  were considered Full Water Quality Treatment BMPs.

<sup>3</sup> BMPs with a  $P_E$  value  $< 1$  were considered Partial Water Quality Treatment BMPs.

#### A. Year 3 Updates

The following changes were made to the City of Aberdeen's BMP Database and baseline impervious areas:

- Updated  $P_e$  values per MDE's comments on the FY2020 MDE Annual Report (See Section XII).
- Removed BMPs from the baseline that did not pass inspection within the last 3 years.
- Added new BMPs to the baseline that passed inspection since Year 1 and Year 2.

Based on the changes above BMP Fact Sheets were updated for each BMP detailing the calculations used to determine the impervious acres treated. These BMP Fact Sheets are included in **Appendix A** of this report.

## **B. Year 3 Impervious Acreage**

- The total impervious area treated by BMPs providing FULL water quality treatment in Year 3 is approximately 9.46 acres (Table 2).
- The total impervious area treated by BMPs providing PARTIAL water quality treatment is approximately 10.00 acres (Table 2).
- The total untreated impervious area in the City of Aberdeen increased to 969.05.

**TABLE 2 – 2004 IMPERVIOUS AREAS YEAR 3 <sup>1</sup>**

Category	Total Area (Acres)
<b>Total Impervious Area</b>	<b>988.51</b>
Impervious Area Treated by BMPs with Full Water Quality Treatment <sup>2</sup>	9.46
Impervious Area Treated by BMPs with Partial Water Quality Treatment <sup>3</sup>	10.00
Impervious Area Treated by Non-structural Practices	To Be Determined
Untreated Impervious Area	969.05
<b>Restoration Requirement (20% of Untreated Impervious Area)</b>	<b>193.81</b>

<sup>1</sup> Areas may continue to be refined during each reporting year as funding allows and as new data becomes available.

<sup>2</sup> BMPs with a  $P_E$  value  $\geq 1$  were considered Full Water Quality Treatment BMPs.

<sup>3</sup> BMPs with a  $P_E$  value  $< 1$  were considered Partial Water Quality Treatment BMPs.

## **II. Develop a Restoration Work Plan for MDE Review and Approval**

The City will continue to revise and adjust the Impervious Area Restoration Work Plan as appropriate. The City has already begun to discuss plans for meeting the restoration requirement by evaluating stream restoration projects described in Sections VIII and XIV of this report.

## **III. Assess Opportunities and Timelines for Implementing Water Quality BMPs**

The City developed a Watershed Assessment and Restoration Plan in September 2020 that identified several potential opportunities to implement Water Quality BMPs. They fall into the categories of Stream Restoration, Reforestation, Rain Barrels, and Rain Gardens. More information is located in Section VIII of this report.

#### **IV. Assess Opportunities to Develop Partnerships with other NPDES Permittees**

The City has had discussions with other permittees, and no partnerships have been developed to date. The City feels partnerships are unlikely to develop.

#### **V. Determine Funding Needs and Develop a Long-Term Budget**

The City currently has an agreement with Harford County that allows a portion of the taxes paid to the County within City limits to be used by the City for stormwater retrofits and improvements. These funds will be used to fund a portion of the City's 20% restoration requirement.

The City is working towards specific funding needs and a long-term budget to meet the cost of design and construction of the stream restoration projects that are expected to be implemented to meet their restoration requirements.

In FY22, the City is planning to apply for grant funding to help finance some of the stream restoration projects the City has selected for impervious area restoration credit.

#### **VI. Update and Submit Urban BMP Database**

A summary of past updates were previously documented in the City of Aberdeen's Fiscal Year 2020 Phase II MS4 Annual Report dated October 28, 2020.

#### **VII. Maintain Inspection Records for all BMPs**

The City continues to inspect all BMPs tri-annually according to the Permit and maintain up-to-date inspection records. All new inspection information is current in the BMP Database submitted in the Fiscal Year 2021 MS4 General Permit Progress Report Year 3 **Attachment I-3**.

#### **VIII. Perform Watershed Assessments and Identify Water Quality Problems and Opportunities for Restoration**

The City completed a Watershed Assessment and Restoration Plan in September 2020 in accordance with the Phase II MS4 Permit (**Attachment I-2** of the Fiscal Year 2021 MS4 General Permit Progress Report Year 3). The assessments described below support the City's goals for healthy watersheds and natural resources, and also support progress towards satisfying several regulatory and permit requirements. These assessments provide the next step in the planning process specifically for the urban stormwater sector regulated by the Phase II MS4 Permit. This watershed assessment, through both desktop and field assessments, identifies watershed conditions and specific restoration solutions to meet the City's watershed restoration goals.



Results of desktop and field watershed assessments were compiled and analyzed to determine specific areas of impairment most in need of restoration. Restoration measures were then developed according to the type and source of impact. The following section presents the results and cost for Stream Restoration.

### Stream Restoration

Stream restoration opportunities were field-identified during a Stream Corridor Assessment (SCA). The current condition of streams was assessed, and locations of stream erosion were identified and mapped using a global positioning system (GPS).

The assessment rated each segment of stream erosion on a 1 to 5 scale according to its severity, correctability, and accessibility; where a score of 1 is the most severe, but also the most correctible and the most accessible. These scores were used to identify high priority stream reaches for stream restoration and were generally sites with a severity score of 1 or 2, and a correctability/access score of 1-4.

Eleven (11) stream restoration projects were identified, with a total length of approximately 11,545 linear feet. **Table 3** provides a summary of cost, impervious acre credit, and load reduction for each stream restoration project identified.

**TABLE 3: STREAM RESTORATION COST, IMPERVIOUS CREDIT, AND LOAD REDUCTION**

Site ID	SCA Reach	Erosion length (ft)	Total Initial Cost	Total Cost Over 20 Years	Impervious Credit (Acres)*	Cost Per Impervious Credit	Load Reduction (lbs/yr)		
							TN	TP	TSS
SR_1	R022	130	\$97,393	\$124,301	2.6	\$47,808	9.8	8.8	32,240.0
SR_2	R173	3,856	\$2,888,823	\$3,686,945	77.12	\$47,808	289.2	262.2	956,288.0
SR_3	R165	230	\$172,311	\$219,916	4.6	\$47,808	17.3	15.6	57,040.0
SR_4	R137, R141	2025	\$1,517,082	\$1,936,219	40.5	\$47,808	151.9	137.7	502,200.0
SR_5	R126	103	\$77,165	\$98,484	2.06	\$47,808	7.7	7.0	25,544.0
SR_6	R123	80	\$59,935	\$76,492	1.6	\$47,808	6.0	5.4	19,840.0
SR_7	R105	1485	\$1,112,527	\$1,419,894	29.7	\$47,808	111.4	101.0	368,280.0
SR_8	R107	770	\$576,865	\$736,241	15.4	\$47,808	57.8	52.4	190,960.0
SR_9	R088	1,585	\$1,187,444	\$1,515,510	31.7	\$47,808	118.9	107.8	393,080.0
SR_10	R043	996	\$746,179	\$952,333	19.92	\$47,808	74.7	67.7	247,008.0
SR_11	R057	285	\$213,516	\$272,504	5.7	\$47,808	21.4	19.4	70,680.0
<b>Total</b>		<b>11,545</b>	<b>\$8,649,240</b>	<b>\$11,038,839</b>	<b>230.9</b>	<b>\$47,808</b>	<b>865.9</b>	<b>785.1</b>	<b>2,863,160.0</b>

\*Impervious credit calculated with planning rate. Actual site-specific impervious credit may be higher.

In FY21, the City worked with KCI Technologies, Inc. (KCI) to create Stream Restoration Concept plans for projects SR-1, SR-2, and SR-9 listed in **Table 3** above. One of the main intents of the Stream Restoration Concept Plans is to apply for grant monies to help fund these projects. A summary of work completed for FY21 for these three projects is listed in **Table 4** below:

**TABLE 4: SUMMARY OF WORK COMPLETED**

Description	SR1	SR2	SR9
Budget Estimates	√	√	√
Trilogy Letters	√	√	√
USGS Streamstats Hydrology	√	√	√
Visual Assessments	√	√	√
Wetland Delineations	√	√	√
Forest Stand Delineations	√	√	√
Invasive Baseline Assessment	√	√	√
BANCS or P5 Data Collection	√	√	√
Sediment Sampling	√	√	√
Geomorphic Survey	√		√
Upland BMP Site ID	√	NA	√
Assessment, concept design, NRI Report	√	√	√
P1/P5 Credit Comps	√	√	√
Concept Design and NRI Mapping	√	√	√
Grant Field Walk		√	√

Based upon field surveys and additional research an updated summary of the equivalent impervious acre credit potential the City may receive for these three stream restoration projects is listed below in **Table 5**:

**TABLE 5: EQUIVALENT IMPERVIOUS ACRE CREDIT POTENTIAL**

Site	Approximate Restoration (LF)	Physiographic Region	Site Specific Credit (ac)	Planning Rate Credit (ac)	Selected Project Credit (ac)
SR-1	400	Coastal Plain	4.6	8.0	8.0
SR-1 Upland BMP*	N/A	Coastal Plain	2.6	N/A	2.6
SR-2	3856	Piedmont	23.5	115.7	115.7
SR-2 Pond Trib	72	Piedmont	0.6	2.2	2.2
SR-2 Wetland Swale	28	Piedmont	3.2	0.8	3.2
SR-2 Upstream Trib	577	Piedmont	26.0	17.3	26.0
SR-9	1635	Coastal Plain	38.7	32.7	38.7
SR-9 Upland BMP*	N/A	Coastal Plain	7.8	N/A	7.8
<b>TOTAL</b>	<b>6568</b>	<b>--</b>	<b>107</b>	<b>187.1</b>	<b>204.1</b>

**IX. Develop List of Specific Projects to be Implemented for Restoration and Identify on the Restoration Activity Schedule**

At this time, the City has selected some projects as listed in the Phase II MS4 Restoration Activity Schedule (**Attachment I-4** of the Fiscal Year 2021 MS4 General Permit Progress Report Year 3). Additional potential projects are listed in Section VIII of this Impervious Area Restoration Work Plan; as well as in Section 4 (Potential Water Quality Improvement Projects) of the *Watershed Assessment and Restoration Plan* (**Attachment I-2** of the Fiscal Year 2021 MS4 General Permit Progress Report Year 3).

In FY21, the City focused on moving forward with three stream restoration projects (SR-1, SR-2 and SR-9) to help meet the City's impervious area restoration requirement of 193.382 acres. This is further described in the Impervious Area Restoration Work Plan Year 3 Section XIV below.

**X. Incorporate Future Growth Agency-Wide/Jurisdiction-Wide Master Plans into Restoration Planning Efforts**

The City will continue to require that all future growth and development adhere to current MDE sediment and stormwater regulations. The City will require full treatment of all new development and impervious surfaces.

**XI. Evaluate and Refine Budget Needs for Project Implementation**

The City has an agreement with Harford County that allows a portion of the taxes paid to the County within City limits to be used by the City for stormwater retrofits and improvements. These funds will be used to fund a portion of the City's 20% restoration requirement. In FY22, the City is working with KCI Technologies, Inc. to apply for grant funding through the Watershed Assistance Grant Program (WAGP) administered through the Chesapeake Bay Trust (CBT).

The City is working towards specific funding needs and a long-term budget to meet the cost of design and construction of the stream restoration projects that are expected to be implemented to meet their restoration requirements.

**XII. Update Submit Urban BMP Database and Documented Maintenance and Inspection Status for all BMPs**

New BMPs were added to the BMP Database according to the permit-required specifications (Phase II MS4 Permit Pages B-17 through B-23). Each BMP the Town is claiming credit for has a BMP Fact Sheet detailing all impervious information and calculations. The BMP Fact Sheets are located in **Appendix A** of this report.

Existing BMPs in the database have been updated with the latest inspection and impervious information. All changes are also reflected in the BMP Fact Sheets in **Appendix A** of this report.

The following changes were made to the existing BMP Database, which were based on MDE Year 2 Comments.

**MDE Comment:**

As noted in the Department’s previous review, extra credit for over management was intended to be calculated for restoration projects and not for BMPs implemented to meet regulatory requirements for new development. **BMPs built after 2002 should be assumed to have a PE of 1”**. Additional treatment may only be applied to BMPs that provide treatment that exceeds regulatory requirements. The City indicated in its response that the estimated treatment for five BMPs was adjusted. However, Table B.1.b lists 29 BMPs with a PE of greater than 1.0. In the next progress report the City must provide information on the how treatment provided by these practices was determined, e.g., was the developer required to provide additional treatment above State regulatory requirements. **The City should provide further documentation showing that treatment was verified for each practice. For example, AB19BMP000027 and AB19BMP000168 were built 1992 and treat 2.7”**.

**City Response:**

The following BMPs built after 2002 that have a Pe value > 1 were revised to have a Pe value – 1.0”. The explanation of these Pe values is located on the BMP Fact Sheets located in **Appendix A** of this report.

**Impacts:**

1. AB04BMP000110 – Pe value was revised from 1.60” to 1.0”.
  - a. This decreased the treatment credit from 0.19 ac to 0.17 ac, a loss of 0.02 ac.
2. AB04BMP000111 – Pe value was revised from 1.40” to 1.0”.
  - a. This decreased the treatment credit from 0.23 ac to 0.21 ac, a loss of 0.02 ac.
3. AB05BMP000102 – Pe value was revised from 0.20” to 1.0”.
  - a. This increased the treatment credit from 0.13 ac to 0.65 ac, an increase of 0.52 ac.
4. AB05BMP000148 – Pe value was revised from 0.70” to 1.0”.
  - a. This increased the treatment credit from 0.10 ac to 0.15 ac, an increase of 0.05 ac.
5. AB03BMP000184 – Pe value was revised from 2.40” to 1.0”.
  - a. This decreased the treatment credit from 5.64 ac to 4.18 ac, a loss of 1.46 ac.

**City Response:**

The following BMPs listed in Table B.1.b below have a Pe of greater than 1.0. The City has provided further documentation showing that treatment was verified for each practice located in **Appendix B** of this report.

**Impacts:**

1. AB19BMP000027 - Pe value was revised from 2.7 to 2.00.
2. AB19BMP000097 – Pe value was revised from 2.7 to 2.18.
3. AB19BMP000098 – Pe value was revised from 2.7 to 2.13.
4. AB19BMP000099 – Pe value was revised from 2.7 to 2.16.
5. AB19BMP000100 – Pe value was revised from 2.7 to 2.18.
6. AB19BMP000101 – Pe value was revised from 2.7 to 2.07.
7. AB19BMP000102 – Pe value was revised from 2.7 to 2.21.
8. AB19BMP000103 – Pe value was revised from 2.7 to 2.13.
9. AB19BMP000104 – Pe value was revised from 2.7 to 2.17.
10. AB19BMP000105 – Pe value was revised from 2.7 to 2.40.
11. AB19BMP000106 – Pe value was revised from 2.7 to 2.08.
12. AB19BMP000107 – Pe value was revised from 1.24 to 2.05.
13. AB19BMP000168– Pe value was revised from 2.7 to 2.23.
14. AB20BMP000051 – Pe value remains 1.80.
15. AB20BMP000052 – Pe value remains 1.80.
16. AB20BMP000053 – Pe value remains 2.00.
17. AB20BMP000054 – Pe value remains 2.60.
18. AB20BMP000055 – Pe value remains 1.80.
19. AB20BMP000056 – Pe value remains 2.60.
20. AB20BMP000057 – Pe value remains 2.40.
21. AB20BMP000109 – Pe value remains 1.40.
22. AB20BMP000110 – Pe value remains 1.20.
23. AB20BMP000111 – Pe value remains 1.01.
24. AB21BMP000002– Pe value remains 1.01.
25. AB21BMP000003– Pe value remains 2.56.

**MDE Comment:**

Some BMPs type XOTH were listed in B.1.a; however, were not listed in Table B.1.b. Please complete data for these BMPs in all appropriate tables.

**City Response:**

All BMPs with XOTH were moved to Table B.1.b.

**MDE Comment:**

BMPs AB20BMP000014 – AB20BMP000018 PE\_ADR was listed in cubic feet; however, the database requires that this data is listed in inches.

**City Response:**

1. AB20BMP000014– PE\_ADR was revised from 2246 to 1.95.
2. AB20BMP000015– PE\_ADR was revised from 3188 to 2.10.
3. AB20BMP000016– PE\_ADR was revised from 2504 to 2.20.
4. AB20BMP000017– PE\_ADR was revised from 3220 to 2.36.
5. AB20BMP000018– PE\_ADR was revised from 2828 to 2.01.

**MDE Comment:**

Please check Built\_Date information and ensure it is entered in the proper format, e.g., check built date for “6/22/1905”; “2017” should be in MM/DD/YYYY format.

**City Response:**

BMP AB05BMP000003, AB05BMP000135, and AB05BMP000141 have updated dates in the correct format in the database.

**MDE Comment:**

Several BMP records reported IMP\_ACRES as “20,000” or similar. Please check this data and confirm that the units are reported in acres. For example, the impervious acre data reported for AB20BMP000025 appears to use the wrong units (BMP type FBIO). Please correct this information.

**City Response:**

All BMPs with IMP\_ACRES listed in cubic feet were updated to acres. These changes did not impact the impervious area baseline as these BMPs are all built after 2018.

**Impacts:**

1. AB20BMP000025 – Impervious Acres was revised from 28732 to 0.66.
2. AB20BMP000035 – Impervious Acres was revised from 25822 to 0.59.
3. AB20BMP000026 – Impervious Acres was revised from 22572 to 0.51.
4. AB20BMP000027 – Impervious Acres was revised from 20733 to 0.47.
5. AB20BMP000015 – Impervious Acres was revised from 3188 to 0.07.
6. AB20BMP000018 – Impervious Acres was revised from 17547 to 0.40.
7. AB20BMP000017 – Impervious Acres was revised from 16998 to 0.39.
8. AB20BMP000014 – Impervious Acres was revised from 14423 to 0.33.
9. AB20BMP000016 – Impervious Acres was revised from 14176 to 0.32.
10. AB20BMP000046 – Impervious Acres was revised from 12465 to 0.29.
11. AB20BMP000028 – Impervious Acres was revised from 12384 to 0.28.
12. AB20BMP000037 – Impervious Acres was revised from 12300 to 0.28.
13. AB20BMP000044 – Impervious Acres was revised from 11981 to 0.27.
14. AB20BMP000029 – Impervious Acres was revised from 10837 to 0.24.
15. AB20BMP000043 – Impervious Acres was revised from 10485 to 0.24.
16. AB20BMP000047 – Impervious Acres was revised from 6889 to 0.15.
17. AB20BMP000041 – Impervious Acres was revised from 6573 to 0.15.
18. AB20BMP000036 – Impervious Acres was revised from 6248 to 0.14.
19. AB20BMP000034 – Impervious Acres was revised from 6192 to 0.14.
20. AB20BMP000038 – Impervious Acres was revised from 6184 to 0.14.
21. AB20BMP000042 – Impervious Acres was revised from 6164 to 0.14.
22. AB20BMP000045 – Impervious Acres was revised from 6037 to 0.13.
23. AB20BMP000039 – Impervious Acres was revised from 5084 to 0.11.
24. AB20BMP000040 – Impervious Acres was revised from 4826 to 0.11.
25. AB20BMP000031 – Impervious Acres was revised from 3382 to 0.07.
26. AB20BMP000030 – Impervious Acres was revised from 3133 to 0.07.
27. AB20BMP000033 – Impervious Acres was revised from 1737 to 0.03.
28. AB20BMP000032 – Impervious Acres was revised from 1737 to 0.03.

**XIII. Develop Adaptive Management Strategies for BMP Implementation that Identify Opportunities for Improved Processes and Procedures**

The City has worked on developing adaptive management strategies by conducting a watershed assessment that identified multiple types of BMPs to meet their impervious area restoration requirements. Through an iterative process that included prioritizing projects and conducting field studies the City is now in the position to meet their impervious area requirements by implementing three stream restoration projects, as described in Section VIII of this impervious area restoration work plan.

**XIV. Continue to Identify Opportunities for Water Quality Improvement Projects and Collaborative Partnerships to Meet Restoration Requirements**

The City worked with KCI Technologies, Inc. (KCI) to create Stream Restoration Concept plans for projects SR-1, SR-2, and SR-9.

In FY22, the City plans to work with property owners in order to establish collaborative partnerships regarding access and maintenance agreements for the three stream restoration projects mentioned above. The Stream Restoration Concept Memo is included in **Attachment I-4** of the Fiscal Year 2021 MS4 General Permit Progress Report Year 3.





## **CITY OF ABERDEEN**

### **NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS**

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

# **IMPERVIOUS AREA RESTORATION WORK PLAN YEAR 3**

## **APPENDIX A**

## **BMP FACT SHEETS**



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
BMP FACT SHEET**



Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB00BMP000041
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	1999
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	16.60
Total Impervious Area (Acres)	6.81
Total Impervious Area within City Limits (Acres)	6.81
I	41.00
Rv	0.42
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>6.81</b>	<b>Town Owned Impervious (Acres):</b>	<b>6.81</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB00BMO000150
BMP Type	Shallow Marsh
BMP Type Code	WSHW
Plan Date	2000
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	30.85
Total Impervious Area (Acres)	17.08
Total Impervious Area within City Limits (Acres)	17.08
I	55.00
Rv	0.55
Runoff Storage Volume (cf) (RS)	32670
Pe Treated by BMP (inches) (Pe)	0.50

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.53
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.50</b>	
<b>Total Impervious (Acres):</b>	<b>17.08</b>	<b>Town Owned Impervious (Acres):</b>	<b>17.08</b>
<b>Impervious Acres Treated:</b>		<b>8.54</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB00BMP000030
BMP Type	Other - Water Quality Basin
BMP Type Code	XOTH
Plan Date	1999
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.95
Total Impervious Area (Acres)	0.78
Total Impervious Area within City Limits (Acres)	0.78
I	82.00
Rv	0.79
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.78</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.78</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB00BMP000151
BMP Type	Shallow Marsh
BMP Type Code	WSHW
Plan Date	2000
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	3.11
Total Impervious Area (Acres)	0.60
Total Impervious Area within City Limits (Acres)	0.60
I	19.00
Rv	0.22
Runoff Storage Volume (cf) (RS)	Attributed to AB00BMP000152
Pe Treated by BMP (inches) (Pe)	

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>			
<b>Total Impervious (Acres):</b>	0.60	<b>Town Owned Impervious (Acres):</b>	0.60
<b>Impervious Acres Treated:</b>		<b>N/A</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB00BMP000152
BMP Type	Shallow Marsh
BMP Type Code	WSHW
Plan Date	2000
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	4.48
Total Impervious Area (Acres)	1.54
Total Impervious Area within City Limits (Acres)	1.54
I	34.00
Rv	0.36
Runoff Storage Volume (cf) (RS)	11566
Pe Treated by BMP (inches) (Pe)	2.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	2.07
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>2.00</b>	
<b>Total Impervious (Acres):</b>	<b>1.54</b>	<b>Town Owned Impervious (Acres):</b>	<b>1.54</b>
<b>Impervious Acres Treated:</b>		<b>1.92</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB00BMP000193
BMP Type	Shallow Marsh
BMP Type Code	WSHW
Plan Date	2000
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	3.00
Total Impervious Area (Acres)	2.55
Total Impervious Area within City Limits (Acres)	2.55
I	85.00
Rv	0.82
Runoff Storage Volume (cf) (RS)	2264
Pe Treated by BMP (inches) (Pe)	0.30

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.24
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.30</b>	
<b>Total Impervious (Acres):</b>	<b>2.55</b>	<b>Town Owned Impervious (Acres):</b>	<b>2.55</b>
<b>Impervious Acres Treated:</b>		<b>0.77</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE:** Additional information is needed to determine the treatment provided by this facility.

BMP ID Number	AB01BMP000118
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	2001
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	46.18
Total Impervious Area (Acres)	6.19
Total Impervious Area within City Limits (Acres)	2.72
I	13.00
Rv	0.17
Runoff Storage Volume (cf) (RS)	UNK
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>6.19</b>	<b>Town Owned Impervious (Acres):</b>	<b>2.72</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	





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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE: This BMP does not provide water quality treatment.**

BMP ID Number	AB01BMP000124
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	2001
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	6.63
Total Impervious Area (Acres)	3.13
Total Impervious Area within City Limits (Acres)	3.13
I	47.00
Rv	0.47
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>3.13</b>	<b>Town Owned Impervious (Acres):</b>	<b>3.13</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB02BMP000016
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	2000
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	5.49
Total Impervious Area (Acres)	4.33
Total Impervious Area within City Limits (Acres)	4.33
I	79.00
Rv	0.76
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

Construction Purpose:		Baseline	
Pe Treated by BMP (inches):		0.00	
Total Impervious (Acres):	4.33	Town Owned Impervious (Acres):	4.33
Impervious Acres Treated:		0.00	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB03BMP000012
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	2001
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	2.09
Total Impervious Area (Acres)	1.39
Total Impervious Area within City Limits (Acres)	1.39
I	66.00
Rv	0.64
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>1.39</b>	<b>Town Owned Impervious (Acres):</b>	<b>1.39</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE: This BMP does not provide water quality treatment.**

BMP ID Number	AB03BMP000139
BMP Type	Oil Grit Separator
BMP Type Code	XOGS
Plan Date	2003
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.65
Total Impervious Area (Acres)	0.00
Total Impervious Area within City Limits (Acres)	0.00
I	0.00
Rv	0.05
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.00</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.00</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB03BMP000184
BMP Type	Multiple Pond System
BMP Type Code	PMPS
Plan Date	2003
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	17.38
Total Impervious Area (Acres)	4.18
Total Impervious Area within City Limits (Acres)	4.18
I	24.00
Rv	0.27
Runoff Storage Volume (cf) (RS)	41077
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	2.71
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>4.18</b>	<b>Town Owned Impervious (Acres):</b>	<b>4.18</b>
<b>Impervious Acres Treated:</b>		<b>4.18</b>	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE:** Additional information is needed to determine the treatment provided by this facility.

BMP ID Number	AB03BMP000186
BMP Type	Submerged Gravel Wetland
BMP Type Code	MSGW
Plan Date	UNK
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	10.37
Total Impervious Area (Acres)	6.26
Total Impervious Area within City Limits (Acres)	6.26
I	60.00
Rv	0.59
Runoff Storage Volume (cf) (RS)	UNK
Pe Treated by BMP (inches) (Pe)	

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>			
<b>Total Impervious (Acres):</b>	6.26	<b>Town Owned Impervious (Acres):</b>	6.26
<b>Impervious Acres Treated:</b>			



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) * 12}{(Rv) * A}$$

$$Rv = .05 + .009(I)$$

NOTE: Additional information is needed to determine the treatment provided by this facility.

BMP ID Number	AB04BMP000049
BMP Type	UNK
BMP Type Code	XDED
Plan Date	Before 1999
BMP Inspection Status	Fail
GIS Drainage Area (Acres)	13.70
Total Impervious Area (Acres)	5.60
Total Impervious Area within City Limits (Acres)	5.60
I	41.00
Rv	0.42
Runoff Storage Volume (cf) (RS)	UNK
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) * 12}{(IA)}$$

Q	
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

Construction Purpose:		Baseline	
Pe Treated by BMP (inches):		0.00	
Total Impervious (Acres):	5.60	Town Owned Impervious (Acres):	5.60
Impervious Acres Treated:		0.00	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB04BMP000052
BMP Type	Shallow Marsh
BMP Type Code	WSHW
Plan Date	2002
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	5.23
Total Impervious Area (Acres)	0.52
Total Impervious Area within City Limits (Acres)	0.52
I	10.00
Rv	0.14
Runoff Storage Volume (cf) (RS)	9652
Pe Treated by BMP (inches) (Pe)	2.60

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	5.16
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**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>2.60</b>	
<b>Total Impervious (Acres):</b>	<b>0.52</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.52</b>
<b>Impervious Acres Treated:</b>		<b>0.72</b>	





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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB04BMP000053
BMP Type	Other - Conveyance Swale
BMP Type Code	XOTH
Plan Date	2002
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	4.73
Total Impervious Area (Acres)	0.01
Total Impervious Area within City Limits (Acres)	0.01
I	0.00
Rv	0.05
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

Construction Purpose:		Baseline	
Pe Treated by BMP (inches):		0.00	
Total Impervious (Acres):	0.01	Town Owned Impervious (Acres):	0.01
Impervious Acres Treated:		0.00	



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**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE: This BMP does not provide water quality treatment.**

BMP ID Number	AB04BMP000054
BMP Type	Other - Conveyance Swale
BMP Type Code	XOTH
Plan Date	2002
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.72
Total Impervious Area (Acres)	0.08
Total Impervious Area within City Limits (Acres)	0.08
I	11.00
Rv	0.15
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.08</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.08</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB04BMP000055
BMP Type	Other - Conveyance Swale
BMP Type Code	XOTH
Plan Date	2002
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.47
Total Impervious Area (Acres)	0.00
Total Impervious Area within City Limits (Acres)	0.00
I	0.00
Rv	0.05
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
---	--

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

Construction Purpose:		Baseline	
Pe Treated by BMP (inches):		0.00	
Total Impervious (Acres):	0.00	Town Owned Impervious (Acres):	0.00
Impervious Acres Treated:		0.00	



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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB04BMP000109
BMP Type	Infiltration Trench
BMP Type Code	ITRN
Plan Date	2004
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	1.53
Total Impervious Area (Acres)	1.37
Total Impervious Area within City Limits (Acres)	1.37
I	89.00
Rv	0.85
Runoff Storage Volume (cf) (RS)	2465
Pe Treated by BMP (inches) (Pe)	0.50

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.50
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.50</b>	
<b>Total Impervious (Acres):</b>	<b>1.37</b>	<b>Town Owned Impervious (Acres):</b>	<b>1.37</b>
<b>Impervious Acres Treated:</b>		<b>0.69</b>	



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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB04BMP000110
BMP Type	Underground Filter
BMP Type Code	FUND
Plan Date	2004
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.19
Total Impervious Area (Acres)	0.17
Total Impervious Area within City Limits (Acres)	0.17
I	90.00
Rv	0.86
Runoff Storage Volume (cf) (RS)	960
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	1.57
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.17</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.17</b>
<b>Impervious Acres Treated:</b>		<b>0.17</b>	



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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB04BMP000111
BMP Type	Underground Filter
BMP Type Code	FUND
Plan Date	2004
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.23
Total Impervious Area (Acres)	0.21
Total Impervious Area within City Limits (Acres)	0.21
I	90.00
Rv	0.86
Runoff Storage Volume (cf) (RS)	960
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	1.29
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.21</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.21</b>
<b>Impervious Acres Treated:</b>		<b>0.21</b>	



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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB04BMP000147
BMP Type	Dry Swale
BMP Type Code	ODSW
Plan Date	2003
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.31
Total Impervious Area (Acres)	0.10
Total Impervious Area within City Limits (Acres)	0.10
I	32.00
Rv	0.34
Runoff Storage Volume (cf) (RS)	399
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	1.10
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.10</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.10</b>
<b>Impervious Acres Treated:</b>		<b>0.10</b>	



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NATIONAL POLLUTANT DISCHARGE  
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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

**NOTE:** Additional information is needed to determine the treatment provided by this facility.

BMP ID Number	AB04BMP000200
BMP Type	Bioretention
BMP Type Code	FBIO
Plan Date	UNK
BMP Inspection Status	Fail
GIS Drainage Area (Acres)	21.61
Total Impervious Area (Acres)	17.24
Total Impervious Area within City Limits (Acres)	17.24
I	80.00
Rv	0.77
Runoff Storage Volume (cf) (RS)	UNK
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
---	--

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>17.24</b>	<b>Town Owned Impervious (Acres):</b>	<b>17.24</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	





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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB05BMP000046
BMP Type	Impervious Surface Elimination (to pervious)
BMP Type Code	IMPP
Plan Date	2005
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.09
Total Impervious Area (Acres)	0.09
Total Impervious Area within City Limits (Acres)	0.09
I	100.00
Rv	0.95
Runoff Storage Volume (cf) (RS)	N/A
Pe Treated by BMP (inches) (Pe)	

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	
---	--

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>			
<b>Total Impervious (Acres):</b>	0.09	<b>Town Owned Impervious (Acres):</b>	0.09
<b>Impervious Acres Treated:</b>			



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

NOTE: This BMP does not provide water quality treatment.

BMP ID Number	AB05BMP000084
BMP Type	Extended Detention Structure, Dry
BMP Type Code	XDED
Plan Date	1997
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	10.39
Total Impervious Area (Acres)	5.88
Total Impervious Area within City Limits (Acres)	5.56
I	57.00
Rv	0.56
Runoff Storage Volume (cf) (RS)	0
Pe Treated by BMP (inches) (Pe)	0.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.00
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>0.00</b>	
<b>Total Impervious (Acres):</b>	<b>5.88</b>	<b>Town Owned Impervious (Acres):</b>	<b>5.56</b>
<b>Impervious Acres Treated:</b>		<b>0.00</b>	



**CITY OF ABERDEEN  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM PROGRAM  
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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB05BMP000102
BMP Type	Bioretention
BMP Type Code	FBIO
Plan Date	2003
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.66
Total Impervious Area (Acres)	0.65
Total Impervious Area within City Limits (Acres)	0.65
I	98.00
Rv	0.93
Runoff Storage Volume (cf) (RS)	448
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.19
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.65</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.65</b>
<b>Impervious Acres Treated:</b>		<b>0.65</b>	



**CITY OF ABERDEEN  
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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB05BMP000148
BMP Type	Dry Swale
BMP Type Code	ODSW
Plan Date	2003
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	0.78
Total Impervious Area (Acres)	0.15
Total Impervious Area within City Limits (Acres)	0.15
I	19.00
Rv	0.22
Runoff Storage Volume (cf) (RS)	460
Pe Treated by BMP (inches) (Pe)	1.00

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	0.87
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.00</b>	
<b>Total Impervious (Acres):</b>	<b>0.15</b>	<b>Town Owned Impervious (Acres):</b>	<b>0.15</b>
<b>Impervious Acres Treated:</b>		<b>0.15</b>	



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NATIONAL POLLUTANT DISCHARGE  
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Date: 9/27/2021

**Pe Addressed Calculation:**

$$Pe = \frac{(RS) \cdot 12}{(Rv) \cdot A}$$

$$Rv = .05 + .009(I)$$

BMP ID Number	AB05BMP000167
BMP Type	Extended Detention Structure, Wet
BMP Type Code	PWED
Plan Date	2001
BMP Inspection Status	Pass
GIS Drainage Area (Acres)	5.38
Total Impervious Area (Acres)	1.21
Total Impervious Area within City Limits (Acres)	1.21
I	23.00
Rv	0.26
Runoff Storage Volume (cf) (RS)	7492
Pe Treated by BMP (inches) (Pe)	1.50

**Runoff Depth Treated per Impervious:**

$$Q = \frac{(RS) \cdot 12}{(IA)}$$

Q	1.70
---	------

**Impervious Area Treated Calculation:**

If  $P_E$  is less than or equal to 1, then:

$$\text{Impervious Acres} \times PE \text{ Treated by BMP} = \text{Impervious Acres Treated}$$

If  $P_E$  is greater than 1, then:

$$\left[ \text{Impervious Acres} \times \frac{(PE \text{ Treated by BMP} - 1)}{0.4} \times 0.1 \right] + \text{Impervious Acres} = \text{Impervious Acres Treated}$$

<b>Construction Purpose:</b>		<b>Baseline</b>	
<b>Pe Treated by BMP (inches):</b>		<b>1.50</b>	
<b>Total Impervious (Acres):</b>	<b>1.21</b>	<b>Town Owned Impervious (Acres):</b>	<b>1.21</b>
<b>Impervious Acres Treated:</b>		<b>1.36</b>	



## **CITY OF ABERDEEN**

### **NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS**

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

# **IMPERVIOUS AREA RESTORATION WORK PLAN YEAR 3**

## **APPENDIX B**

### **BMP Pe DOCUMENTATION**

# Stormwater Management Report

**Frito-Lay, Inc.  
Commercial Vehicle Storage**

**800 Hickory Drive  
Aberdeen, MD 21001**

**August 2014**



Prepared for:

**Frito-Lay, Inc.  
c/o The Haskell Company  
111 Riverside Avenue  
Jacksonville, FL 32202  
(904) 791-4500**

Prepared by:

**KCI Technologies, Inc.  
1352 Marrows Road  
Suite 100  
Newark, DE 19711  
(302) 731-9176**

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3487, EXPIRATION DATE: 7/03/2016.



KCI Job No 27065506B





Project: Frito Lay - Aberdeen - Commercial Vehicle Storage  
 J.O. 27065506B  
 By: JMS  
 Checked: \_\_\_\_\_ Date: 8/27/2014  
 Date: \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### Submerged Gravel Wetland Facility 1 - AB19BMP000027

Drainage Area to Facility = 1.865 Acres  
 Impervious = 1.597 Acres  
 Pervious = 0.268 Acres

#### Total Facility Storage Requirements:

Target Pe = 2 "  
 $ESD_v = \frac{(Pe)(R_v)(A)}{12}$   $R_v = 0.05 + 0.009(I)$   
 $R_v = 0.05 + 0.009 (85.630027)$   
 $R_v = 0.82067$   
 $ESD_v = \frac{3.0611}{12}$   
 $ESD_v = 0.255092 \text{ Ac/Ft}$  or **11,112 Cubic Feet**

Max Pe = 2.7 "  
 $ESD_v = \frac{(Pe)(R_v)(A)}{12}$   
 $ESD_v = \frac{4.132485}{12}$   
 $ESD_v = 0.344374 \text{ Ac/Ft}$  or **15,001 Cubic Feet**

#### Facility Geometry:

Facility Surface Area = 5145 Square Feet  
 Ponding Area = 6258 Square Feet  
 Ponding Depth = 1 Feet

Check to ensure facility is  $\geq 2\%$  of the contributing area:  
 $\frac{5,145}{81,239} = 6\%$

#### Facility Storage:

5,702 Cubic Feet of Storage Above Filter Media  
 Media thickness = 3 feet below facility bottom  
 $\frac{5,145}{5,702} \times \frac{3}{6,174} \times 0.4 = \frac{6174}{11,876}$   
 6174 Cubic Feet of Storage within Filter Media  
 11,876 Cubic Feet of Total Storage for Facility

#### Required Temporary Storage Volume Above Facility:

Af / Ai = Required Surface Storage Percentage  
 $\frac{5,145}{69,565} = 7\%$   
 Af = 5,145 s.f.  
 Ai = 69,565 s.f.

Using the Table for SHA-BSM, the Required

Storage Percentage = 7%  
 $11,112 \text{ c.f.} \times 7\% = 778 \text{ c.f. of Temporary Surface Storage Required with SHA-BSM}$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility  
 $11,112 \text{ c.f.} \times 75\% = 8,334 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$

Total Temporary Storage Volume Provided Above Facility = 5,702 c.f.  
 Total Temporary Storage Volume Provided Below Facility = 6,174 c.f.  
 Total Temporary Storage Volume Provided = 11,876 c.f.  
 Maximum Storage Volume Allowed = 15,001 c.f.

Total Credited Volume towards ESD Requirement =	11,876 c.f.
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Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.



# Stormwater Management Report

## Frito-Lay, Inc. Warehouse Expansion

800 Hickory Drive  
Aberdeen, MD

February 2014



Prepared for:

Frito-Lay, Inc.  
c/o The Haskell Company  
111 Riverside Avenue  
Jacksonville, FL 32202

Prepared by:

KCI Technologies, Inc.  
1352 Marrows Road  
Suite 100  
Newark, DE 19711

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY  
THAT THESE DOCUMENTS WERE PREPARED OR  
APPROVED BY ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE  
STATE OF MARYLAND, LICENSE NO. 26990,  
EXPIRATION DATE: 12/21/2015.



KCI Job No 27065506A

Project:	Frito Lay - Aberdeen		
J.O.			
By:	CEM	Dat	2/27/2014
Checked:		Dat	

## Stormwater Management ESD Techniques and Facility Design

**Micro-Bioretention Facility # 1 - AB19BMP000097**

Drainage Area to Facility =	0.476 Acres
Impervious =	0.395 Acres
Pervious =	0.081 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2.000 / 20.735 = 10 \%$$

**Facility Storage:**

**2,250 Cubic Feet of Storage Above Filter Media**

Media thickness = 2 feet below facility bottom

$$2.000 \times 2 \times 0.4 = 1600 \text{ Cubic Feet of Storage within Filter Media}$$
$$2,250 + 1,600 = 3,850 \text{ Cubic Feet of Total Storage for Facility}$$

**Total Facility Storage Requirement:**

ESDv =  $\frac{(Pe)(Rv)(A)}{12}$       Pe = 1.8 "      Rv = 0.05 + 0.009(l)      Rv = 0.05 + 0.009 ( 82.983193 )      Rv = 0.7968

$$ESD_y = 1.8 \times 0.7968 \times 0.476$$
$$ESD_v = \frac{0.68274}{12}$$

**ESD<sub>v</sub> = 0.056895 Ac/Ft      or      2.478 Cubic Feet**

**Required Temporary Storage Volume Above Facility:**

[illegible]
$$2.000 \quad / \quad 17.206 \quad = \quad 12 \%$$

Using the Table for SHA-BSM, the Required

Storage Percentage = 43%

$$2,478 \text{ c.f.} \times 43\% = 1,066 \text{ C.F. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,478 \times 75\% = 1,859 \text{ c.f.}$$

**Total Temporary Storage Volume Provided Above Facility = 2,250 c.f.**

**Total Credited Volume towards ESD Requirement = 2,250 / 0.75**

Total Credited Volume towards ESD Requirement =	3,000 c.f.
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Therefore, the Total Required Temporary Surface Volume has been Provided for Treating 100% of the Impervious Draining to the Facility.  
The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (ESD_v)(12) / (R_v)(A)$$
$$PE = (3,000)(12) / (0.7968)(0.476)$$

PE = 2.18 "



Project: Frito Lay - Aberdeen  
 J.O. \_\_\_\_\_  
 By: CEM Dat 2/26/2014  
 Checked: \_\_\_\_\_ Dat \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility # 2 - AB19BMP000098

Drainage Area to Facility = 0.491 Acres  
 Impervious = 0.404 Acres  
 Pervious = 0.087 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$\frac{2,000}{21,388} = 9\%$$

Facility Storage:

2,250 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $\frac{2,000}{2,250} \times 2 \times 0.4 = 1600$  Cubic Feet of Storage within Filter Media  
 $2,250 + 1,600 = 3,850$  Cubic Feet of Total Storage for Facility

**Total Facility Storage Requirement:**

$$\text{ESDv} = \frac{(P_e)(R_v)(A)}{12}$$

$P_e = 1.8''$   
 $R_v = 0.05 + 0.009(I)$   
 $R_v = 0.05 + 0.009(82.281059)$   
 $R_v = 0.7905$

$$\text{ESDv} = 1.8 \times 0.7905 \times 0.491$$

$$\text{ESDv} = \frac{0.69867}{12}$$

$$\text{ESDv} = 0.058223 \text{ Ac/Ft or } 2,536 \text{ Cubic Feet}$$

**Required Temporary Storage Volume Above Facility:**

Af / Ai = Required Surface Storage Percentage

$A_f = 2,000 \text{ s.f.}$   
 $A_i = 17,598 \text{ s.f.}$   
 $\frac{2,000}{17,598} = 11\%$

Using the Table for SHA-BSM, the Required

Storage Percentage = 46%

$2,536 \text{ c.f.} \times 46\% = 1,167 \text{ c.f. of Temporary Surface Storage Required with SHA BSM}$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$2,536 \times 75\% = 1,902 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$

Total Temporary Storage Volume Provided Above Facility = 2,250 c.f.

Total Credited Volume towards ESD Requirement =  $\frac{2,250}{0.75}$

Total Credited Volume towards ESD Requirement = 3,000 c.f.

Therefore, the Total Required Temporary Surface Volume has been Provided for Treating 100% of the Impervious Draining to the Facility. The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$PE = (\text{ESDv})(12) / (R_v)(A)$

$PE = \left( \frac{3,000}{2.13} \right) (12) / (0.7905)(0.491)$

$PE = 2.13''$



Project: Frito Lay - Aberdeen  
 J.O.  
 By: CEM  
 Checked:  
 Dat 2/26/2014  
 Dat

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility # 3 - AB19BMP000099

Drainage Area to Facility = 0.496 Acres  
 Impervious = 0.398 Acres  
 Pervious = 0.098 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,000 / 21,606 = 9 \%$$

Facility Storage:

2,250 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $2,000 \times 2 \times 0.4 = 1600$  Cubic Feet of Storage within Filter Media  
 $2,250 + 1,600 = 3,850$  Cubic Feet of Total Storage for Facility

Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(80.241935) \\ & & Rv &= 0.7722 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.7722 \times 0.496$$

$$\text{ESDv} = \frac{0.6894}{12}$$

$$\text{ESDv} = 0.05745 \text{ Ac/Ft} \quad \text{or} \quad 2,503 \text{ Cubic Feet}$$

Required Temporary Storage Volume Above Facility:

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 2,000 \text{ s.f.} \\ & & \text{Ai} &= 17,337 \text{ s.f.} \\ 2,000 / 17,337 &= 12 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 50\% \\ 2,503 \text{ c.f.} \times 50\% = 1,251 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,503 \times 75\% = 1,877 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 2,250 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,250 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 3,000 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided for Treating 100% of the Impervious Draining to the Facility. The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$\begin{aligned} \text{PE} &= (\text{ESDv})(12) / (Rv)(A) \\ \text{PE} &= (3,000)(12) / (0.7722)(0.496) \\ \text{PE} &= 2.16'' \end{aligned}$$



Project: Frito Lay - Aberdeen  
 J.O. \_\_\_\_\_  
 By: CEM Dat 2/26/2014  
 Checked: \_\_\_\_\_ Dat \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretenention Facility # 4 - AB19BMP000100

Drainage Area to Facility = 0.408 Acres  
 Impervious = 0.34 Acres  
 Pervious = 0.068 Acres

Facility Surface Area = 1,700 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$1,700 / 17,772 = 10 \%$$

Facility Storage:

1,934 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $1,700 \times 2 \times 0.4 = 1360$  Cubic Feet of Storage within Filter Media  
 $1,934 + 1,360 = 3,294$  Cubic Feet of Total Storage for Facility

### Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8 \text{ "} \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009 (83.333333) \\ & & Rv &= 0.8 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.8 \times 0.408$$

$$\text{ESDv} = \frac{0.58752}{12}$$

$$\text{ESDv} = 0.04896 \text{ Ac/Ft} \quad \text{or} \quad 2,133 \text{ Cubic Feet}$$

### Required Temporary Storage Volume Above Facility:

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 1,700 \text{ s.f.} \\ & & \text{Ai} &= 14,810 \text{ s.f.} \\ 1,700 / 14,810 &= 11 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\begin{aligned} \text{Storage Percentage} &= 55\% \\ 2,133 \text{ c.f.} \times 55\% &= 1,173 \text{ c.f. of Temporary Surface Storage Required} \end{aligned}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,133 \times 75\% = 1,600 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 1,934 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,934 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,578 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$\begin{aligned} PE &= (\text{ESDv})(12) / (Rv)(A) \\ PE &= (2,578)(12) / (0.8)(0.408) \\ PE &= 2.18 \text{ "} \end{aligned}$$





Project: Frito Lay - Aberdeen  
 J.O. \_\_\_\_\_  
 By: CEM Dat 2/27/2014  
 Checked: \_\_\_\_\_ Dat \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretenation Facility #5 - AB19BMP000101

Drainage Area to Facility = 0.483 Acres  
 Impervious = 0.403 Acres  
 Pervious = 0.08 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,000 / 21,039 = 10 \%$$

Facility Storage:

2,175 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $2,000 \times 2 \times 0.4 = 1600$  Cubic Feet of Storage within Filter Media  
 $2,175 + 1,600 = 3,775$  Cubic Feet of Total Storage for Facility

### **Total Facility Storage Requirement:**

$$\text{ESDv} = \frac{(Pe)(Rv)(A)}{12}$$

$Pe = 1.8$  "  
 $Rv = 0.05 + 0.009(I)$   
 $Rv = 0.05 + 0.009(83.436853)$   
 $Rv = 0.8009$

$$\text{ESDv} = 1.8 \times 0.8009 \times 0.483$$

$$\text{ESDv} = \frac{0.69633}{12}$$

$$\text{ESDv} = 0.058028 \text{ Ac/Ft} \quad \text{or} \quad 2,528 \text{ Cubic Feet}$$

### **Required Temporary Storage Volume Above Facility:**

$A_f / A_i = \text{Required Surface Storage Percentage}$      $A_f = 2,000 \text{ s.f.}$   
 $A_i = 17,555 \text{ s.f.}$   
 $2,000 / 17,555 = 11 \%$

Using the Table for SHA-BSM, the Required

Storage Percentage = 59%  
 $2,528 \text{ c.f.} \times 59\% = 1,491 \text{ c.f. of Temporary Surface Storage Required}$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,528 \times 75\% = 1,896 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

Total Temporary Storage Volume Provided Above Facility = 2,175 c.f.

Total Credited Volume towards ESD Requirement =  $2,175 / 0.75$

Total Credited Volume towards ESD Requirement = 2,900 c.f.

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (2,900)(12) / (0.8009)(0.483)$$

$$PE = 2.07$$



Project: Frito Lay - Aberdeen  
 J.O.  
 By: CEM  
 Checked:  
 Dat 2/26/2014  
 Dat

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility #6 - AB19BMP000102

Drainage Area to Facility = 0.488 Acres  
 Impervious = 0.389 Acres  
 Pervious = 0.099 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,000 / 21,257 = 9 \%$$

Facility Storage:

2,250 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $2,000 \times 2 \times 0.4 = 1600$  Cubic Feet of Storage within Filter Media  
 $2,250 + 1,600 = 3,850$  Cubic Feet of Total Storage for Facility

Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(79.713115) \\ & & Rv &= 0.7674 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.7674 \times 0.488$$

$$\text{ESDv} = \frac{0.6741}{12}$$

$$\text{ESDv} = 0.056175 \text{ Ac/Ft} \quad \text{or} \quad 2,447 \text{ Cubic Feet}$$

Required Temporary Storage Volume Above Facility:

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 2,000 \text{ s.f.} \\ & & \text{Ai} &= 16,945 \text{ s.f.} \\ 2,000 / 16,945 &= 12 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 50\% \\ 2,447 \text{ c.f.} \times 50\% = 1,223 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,447 \times 75\% = 1,835 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 2,250 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,250 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 3,000 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (3,000)(12) / (0.7674)(0.488)$$

$$PE = 2.21''$$



Project: Frito Lay - Aberdeen  
 J.O. \_\_\_\_\_  
 By: CEM Date: 2/26/2014  
 Checked: \_\_\_\_\_ Date: \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretenention Facility #7 - AB19BMP000103

Drainage Area to Facility = 0.492 Acres  
 Impervious = 0.445 Acres  
 Pervious = 0.047 Acres

Facility Surface Area = 2,200 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,200 / 21,432 = 10 \%$$

Facility Storage:

2,464 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $2,200 \times 2 \times 0.4 = 1760$  Cubic Feet of Storage within Filter Media  
 $2,464 + 1,760 = 4,224$  Cubic Feet of Total Storage for Facility

### Total Facility Storage Requirement:

$$\text{ESDv} = \frac{(\text{Pe})(\text{Rv})(\text{A})}{12}$$

Pe = 1.8 "  
 Rv =  $0.05 + 0.009(\text{I})$   
 Rv =  $0.05 + 0.009(90.447154)$   
 Rv = 0.864

$$\text{ESDv} = 1.8 \times 0.864 \times 0.492$$

$$\text{ESDv} = \frac{0.76518}{12}$$

$$\text{ESDv} = 0.063765 \text{ Ac/Ft} \quad \text{or} \quad 2,778 \text{ Cubic Feet}$$

### Required Temporary Storage Volume Above Facility:

Af / Ai = Required Surface Storage Percentage

Af = 2,200 s.f.  
 Ai = 19,384 s.f.

$$2,200 / 19,384 = 11 \%$$

Using the Table for SHA-BSM, the Required

Storage Percentage = 50%

$$2,778 \text{ c.f.} \times 50\% = 1,389 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,778 \times 75\% = 2,083 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

Total Temporary Storage Volume Provided Above Facility =	2,464 c.f.
Total Credited Volume towards ESD Requirement =	2,464 / 0.75
Total Credited Volume towards ESD Requirement =	3,285 c.f.

Therefore, the Total Required Temporary Surface Volume has been Provided for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$\text{PE} = (\text{ESDv})(12) / (\text{Rv})(\text{A})$$

$$\text{PE} = (3,285)(12) / (0.864)(0.492)$$

$$\text{PE} = 2.13 "$$





Project: Frito Lay - Aberdeen  
 J.O. \_\_\_\_\_  
 By: CEM Dat 2/26/2014  
 Checked: \_\_\_\_\_ Dat \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility #8 - AB19BMP000104

Drainage Area to Facility = 0.357 Acres  
 Impervious = 0.283 Acres  
 Pervious = 0.074 Acres

Facility Surface Area = 1,400 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$1,400 / 15,551 = 9 \%$$

#### Facility Storage:

1,613 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $1,400 \times 2 \times 0.4 = 1120$  Cubic Feet of Storage within Filter Media  
 $1,613 + 1,120 = 2,733$  Cubic Feet of Total Storage for Facility

#### Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(79.271709) \\ & & Rv &= 0.7634 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.7634 \times 0.357$$

$$\text{ESDv} = \frac{0.49059}{12}$$

$$\text{ESDv} = 0.040883 \text{ Ac/Ft} \quad \text{or} \quad 1,781 \text{ Cubic Feet}$$

#### Required Temporary Storage Volume Above Facility:

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 1,400 \text{ s.f.} \\ & & \text{Ai} &= 12,327 \text{ s.f.} \\ 1,400 / 12,327 &= 11 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 50\% \\ 1,781 \text{ c.f.} \times 50\% = 890 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$1,781 \times 75\% = 1,336 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 1,613 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,613 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,151 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

#### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (2,151)(12) / (0.7634)(0.357)$$

$$PE = 2.17''$$



Project: Frito Lay - Aberdeen  
 J.O. \_\_\_\_\_  
 By: CEM Dat 2/26/2014  
 Checked: \_\_\_\_\_ Dat \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility #10- AB19BMP000105

Drainage Area to Facility = 0.304 Acres  
 Impervious = 0.184 Acres  
 Pervious = 0.12 Acres

Facility Surface Area = 1,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$1,000 / 13,242 = 8 \%$$

Facility Storage:

1,183 Cubic Feet of Storage Above Filter Media

Media thickness = 2 feet below facility bottom

$$1,000 \times 2 \times 0.4 = 800 \text{ Cubic Feet of Storage within Filter Media}$$

$$1,183 + 800 = 1,983 \text{ Cubic Feet of Total Storage for Facility}$$

**Total Facility Storage Requirement:**

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(60.526316) \\ & & Rv &= 0.5947 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.5947 \times 0.304$$

$$\text{ESDv} = \frac{0.32544}{12}$$

$$\text{ESDv} = 0.02712 \text{ Ac/Ft or } 1,181 \text{ Cubic Feet}$$

**Required Temporary Storage Volume Above Facility:**

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 1,000 \text{ s.f.} \\ & & \text{Ai} &= 8,015 \text{ s.f.} \\ 1,000 / 8,015 &= 12 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\begin{aligned} \text{Storage Percentage} &= 46\% \\ 1,181 \text{ c.f.} \times 46\% &= 543 \text{ c.f. of Temporary Surface Storage Required} \end{aligned}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$1,181 \times 75\% = 886 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 1,183 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,183 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,577 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (1,577)(12) / (0.5947)(0.304)$$

$$PE = 2.40''$$



Project: Frito Lay - Aberdeen  
 J.O. \_\_\_\_\_  
 By: CEM Dat 2/26/2014  
 Checked: \_\_\_\_\_ Dat \_\_\_\_\_

## Stormwater Management ESD Techniques and Facility Design

### **Micro-Bioretenention Facility #11 - AB19BMP000106**

Drainage Area to Facility = 0.486 Acres  
 Impervious = 0.414 Acres  
 Pervious = 0.072 Acres

Facility Surface Area = 2,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$2,000 / 21,170 = 9 \%$$

Facility Storage:

2,250 Cubic Feet of Storage Above Filter Media

Media thickness = 2 feet below facility bottom

$$2,000 \times 2 \times 0.4 = 1600 \text{ Cubic Feet of Storage within Filter Media}$$

$$2,250 + 1,600 = 3,850 \text{ Cubic Feet of Total Storage for Facility}$$

**Total Facility Storage Requirement:**

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(85.185185) \\ & & Rv &= 0.8167 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.8167 \times 0.486$$

$$\text{ESDv} = \frac{0.71442}{12}$$

$$\text{ESDv} = 0.059535 \text{ Ac/Ft} \quad \text{or} \quad 2,593 \text{ Cubic Feet}$$

**Required Temporary Storage Volume Above Facility:**

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 2,000 \text{ s.f.} \\ & & \text{Ai} &= 18,034 \text{ s.f.} \\ 2,000 / 18,034 &= 11 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\begin{aligned} \text{Storage Percentage} &= 50\% \\ 2,593 \text{ c.f.} \times 50\% &= 1,297 \text{ c.f. of Temporary Surface Storage Required} \end{aligned}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$2,593 \times 75\% = 1,945 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 2,250 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,250 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 3,000 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### **PE for Surface Storage of Facility**

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (3,000)(12) / (0.8167)(0.486)$$

$$PE = 2.08''$$



Project: Frito Lay - Aberdeen  
 J.O.  
 By: CEM  
 Checked: Dat 2/26/2014  
 Dat

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretentation Facility #12 - AB19BMP000107

Drainage Area to Facility = 0.222 Acres  
 Impervious = 0.164 Acres  
 Pervious = 0.058 Acres

Facility Surface Area = 1,000 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$1,000 / 9,670 = 10 \%$$

Facility Storage:

1,183 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $1,000 \times 2 \times 0.4 = 800$  Cubic Feet of Storage within Filter Media  
 $1,183 + 800 = 1,983$  Cubic Feet of Total Storage for Facility

Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(73.873874) \\ & & Rv &= 0.7149 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.7149 \times 0.222$$

$$\text{ESDv} = \frac{0.28566}{12}$$

$$\text{ESDv} = 0.023805 \text{ Ac/Ft} \quad \text{or} \quad 1,037 \text{ Cubic Feet}$$

Required Temporary Storage Volume Above Facility:

$$\begin{aligned} \text{Af} / \text{Ai} &= \text{Required Surface Storage Percentage} & \text{Af} &= 1,000 \text{ s.f.} \\ & & \text{Ai} &= 7,144 \text{ s.f.} \\ 1,000 / 7,144 &= 14 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 45\% \\ 1,037 \text{ c.f.} \times 45\% = 467 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$1,037 \times 0.75 = 778 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 1,183 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,183 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,183 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$\begin{aligned} \text{PE} &= (\text{ESDv})(12) / (Rv)(A) \\ \text{PE} &= (1,183)(12) / (0.7149)(0.222) \\ \text{PE} &= 2.05'' \end{aligned}$$



Project: Frito Lay - Aberdeen  
 J.O.  
 By: CEM  
 Checked: Dat 2/26/2014  
 Dat

## Stormwater Management ESD Techniques and Facility Design

### Micro-Bioretention Facility #9 - AB19BMP000168

Drainage Area to Facility = 0.488 Acres  
 Impervious = 0.288 Acres  
 Pervious = 0.2 Acres

Facility Surface Area = 1,500 (See Storage Table)

Check to ensure facility is  $\geq 2\%$  of the contributing area:

$$1,500 / 21,257 = 7 \%$$

Facility Storage:

1,720 Cubic Feet of Storage Above Filter Media  
 Media thickness = 2 feet below facility bottom  
 $1,500 \times 2 \times 0.4 = 1200$  Cubic Feet of Storage within Filter Media  
 $1,720 + 1,200 = 2,920$  Cubic Feet of Total Storage for Facility

Total Facility Storage Requirement:

$$\begin{aligned} \text{ESDv} &= \frac{(Pe)(Rv)(A)}{12} & Pe &= 1.8'' \\ & & Rv &= 0.05 + 0.009(I) \\ & & Rv &= 0.05 + 0.009(59.016393) \\ & & Rv &= 0.5811 \end{aligned}$$

$$\text{ESDv} = 1.8 \times 0.5811 \times 0.488$$

$$\text{ESDv} = \frac{0.51048}{12}$$

$$\text{ESDv} = 0.04254 \text{ Ac/Ft} \quad \text{or} \quad 1,853 \text{ Cubic Feet}$$

Required Temporary Storage Volume Above Facility:

$$\begin{aligned} A_f / A_i &= \text{Required Surface Storage Percentage} & A_f &= 1,500 \text{ s.f.} \\ & & A_i &= 12,545 \text{ s.f.} \\ 1,500 / 12,545 &= 12 \% \end{aligned}$$

Using the Table for SHA-BSM, the Required

$$\text{Storage Percentage} = 50\% \\ 1,853 \text{ c.f.} \times 50\% = 927 \text{ c.f. of Temporary Surface Storage Required}$$

If SHA-BSM is not Provided for the Facility, 75% of the Required

ESDv must be Provided Above the Facility

$$1,853 \times 75\% = 1,390 \text{ c.f. of Temporary Surface Storage Required w/o SHA-BSM}$$

$$\text{Total Temporary Storage Volume Provided Above Facility} = 1,720 \text{ c.f.}$$

$$\text{Total Credited Volume towards ESD Requirement} = 1,720 / 0.75$$

$$\text{Total Credited Volume towards ESD Requirement} = 2,293 \text{ c.f.}$$

Therefore, the Total Required Temporary Surface Volume has been Provided  
 for Treating 100% of the Impervious Draining to the Facility.  
 The Facility does not Require the use of SHA-BSM.

### PE for Surface Storage of Facility

$$PE = (\text{ESDv})(12) / (Rv)(A)$$

$$PE = (2,293)(12) / (0.5811)(0.488)$$

$$PE = 2.23''$$

## **SWM Record Computations**

**SUBMIT TO:**

**City of Aberdeen  
Department of Planning and  
Community Development**

**PROJECT:**

**LIDL - Aberdeen  
MD142108**

**PROJECT LOCATION:**

**621 S. Philadelphia Blvd (U.S. Route 40)  
Aberdeen, MD  
City of Aberdeen  
Harford County**

**OWNER/DEVELOPER:**

**LIDL US OPERATIONS, LLC  
3500 South Clark St.  
Arlington, VA, 22202**

**Bohler Engineering**  
901 Dulaney Valley Road  
Suite 801  
Towson, MD, 21204

Phone: 410-821-7900  
Fax : 410-821-7987



I, Joseph J. Ucciferro, P.E., hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 36064, Expiration Date: 6/26/2020.

January 4, 2019

## Bioretention 1 - AB20BMP000051

1/4/2019

### BASE DATA

Drainage Area = 1.58 Acres.

Total Impervious Area on site= 1.16 Acres.

Soils Type on the site : Type B and C soils

### COMPUTATION OF WATER QUALITY VOLUME

Water Quality Volume is given by:

$$WQ_v = (P \cdot R_v \cdot A) / 12$$

Where P = rainfall depth

$$= 1.8 \text{ "}$$

Total Drainage Area = 1.58 Acres

$R_v$  = Volumetric runoff Coefficient

$$= 0.05 + 0.009(I)$$

where I = Percentage Impervious Cover

$$= (1.16 / 1.58) \cdot 100$$

$$= 73.42 \%$$

$$R_v = 0.05 + 0.009(73.42)$$

$$= 0.711$$

Thus, the Water Quality Volume is given by :

$$WQ_v = (1.8 \cdot 0.71 \cdot 1.58) / 12$$

$$= 0.168 \text{ Ac -ft.}$$

Thus, the Total Water Quality Volume required for this Bioretention is (75% of total WQv):

$$WQ_v = 0.168 \text{ Acre-feet}$$

$$7338 \text{ cf} \times 75\% =$$

$$5503 \text{ cf}$$

## Bioretention 2 - AB20BMP000052

1/4/2019

### BASE DATA

Drainage Area = 2.01 Acres.

Total Impervious Area on site= 1.25 Acres.

Soils Type on the site : Type B and C soils

### COMPUTATION OF WATER QUALITY VOLUME

Water Quality Volume is given by:

$$WQ_v = (P \cdot R_v \cdot A) / 12$$

Where P = rainfall depth

$$= 1.8 \text{ "}$$

Total Drainage Area = 2.01 Acres

$R_v$  = Volumetric runoff Coefficient

$$= 0.05 + 0.009(I)$$

where I = Percentage Impervious Cover

$$= (1.25/2.01) \cdot 100$$

$$= 62.19 \%$$

$$R_v = 0.05 + 0.009(62.19)$$

$$= 0.610$$

Thus, the Water Quality Volume is given by :

$$WQ_v = (1.8 \cdot 0.61 \cdot 2.01) / 12$$

$$= 0.184 \text{ Ac -ft.}$$

Thus, the Total Water Quality Volume required for this pond is:

$$WQ_v = 0.184 \text{ Acre-feet} \quad 8007 \text{ cf} \quad \times \quad 75\% =$$

6006 cf
---------



**M-6 MBIO-1 - AB20BMP000053**

SWM As-Builts

Location:

Calculate  $R_v$ :

Drainage Area, A	0.46	acres	20000	square feet	(20,000 sf Max, not including facility)
Total Proposed Impervious Area	0.33	acres	14375	square feet	
Impervious Area Percentage, $I_{post}$	71.9%				
Runoff Coefficient, $R_v = 0.05 + 0.009(I_{post})$	0.697				

Calculate ESD Volumes Provided Using Micro-Bioretenention:

Filter Bed Area ( $A_f$ ) Sizing $A_{f(min)} = 0.02 * DA =$ 

$A_{f(min)} = 0.02 * DA =$	400	sf
Area of Filter Bed Provided =	775	sf

Stage Storage Table for Micro-Bioretenention

ELEV	AREA (sf)	AVG AREA (sf)	INC ELEV DIFF (ft)	TOTAL DEPTH (ft)	INTERVAL STOR. (cf)	TOTAL STOR. (cf)	TOTAL STOR. (ac-ft)
61.00	775					0	0.00000
		878	0.5		439		
61.50	980			0.5		439	0.01007
		1,080	0.25		270		
61.75	1,180			0.75		709	0.01627
		1,313	0.25		328		
62.00	1,445			1.00		709	0.01627

Ponding depth =	1.00	ft	(1 ft Max)
Volume Provided prior to filtration =	709	cf	
Depth of Mulch =	0.25	ft	
Depth of Filter Media =	4.0	ft	(2 - 4 ft)
Depth of Stone to Invert of Underdrain =	0.8	ft	(Including 4" pea gravel bridging layer)
Volume Provided within mulch, filter and stone layers			
+ 4 + 0.8) * 775 * 0.4 =	1,566	cf	
Total Volume Provided in Facility =	2,274	cf	

Maximum Amount of Runoff that can be captured = Runoff from 1-yr, 24 hr storm (P = 2.6)

Max ESDv = $(P)(R_v)(A)/12 =$	3,020
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ESDv Provided by Micro-Bioretenention = (Use smaller of two volumes)	2,274	cf
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$P_E$ (in) Achieved =	2.0
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**M-6 MBIO-3 - AB20BMP000054**

SWM As-Builts

Location:

Calculate  $R_v$ :

Drainage Area, A	0.13	acres	5663	square feet	(20,000 sf Max, not including facility)
Total Proposed Impervious Area	0.07	acres	3049	square feet	
Impervious Area Percentage, $I_{post}$	53.8%				
Runoff Coefficient, $R_v = 0.05 + 0.009(I_{post})$	0.535				

Calculate ESD Volumes Provided Using Micro-Bioretenention:

Filter Bed Area ( $A_f$ ) Sizing $A_f$  must be a minimum of 2% of DA

$A_{f(min)} = 0.02 * DA =$	113	sf
Area of Filter Bed Provided =	845	sf

Stage Storage Table for Micro-Bioretenention

ELEV	AREA (sf)	AVG AREA (sf)	INC ELEV DIFF (ft)	TOTAL DEPTH (ft)	INTERVAL STOR. (cf)	TOTAL STOR. (cf)	TOTAL STOR. (ac-ft)
61.75	845					0	0.00000
62.00	1,055	950	0.3	0.3	238	238	0.00545
62.50	1,390	1,223	0.50	0.75	611	849	0.01948
62.75	1,560	1,475	0.25	1.00	369	1,218	0.02795

Elev of mulch approx. 61.60 +/-

Ponding depth =	1.00	ft	(1 ft Max)
Volume Provided prior to filtration =	1,218	cf	
Depth of Mulch =	0.25	ft	
Depth of Filter Media =	2.0	ft	(2 - 4 ft)
Depth of Stone to Invert of Underdrain =	1.0	ft	(Including 4" pea gravel bridging layer)
Volume Provided within mulch, filter and stone layers			
$5 + 2 + 1) * 845 * 0.4 =$	1,099	cf	
Total Volume Provided in Facility =	2,316	cf	

Maximum Amount of Runoff that can be captured = Runoff from 1-yr, 24 hr storm ( $P = 2.6$ )

Max ESDv = $(P)(R_v)(A)/12 =$	656	
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ESDv Provided by Micro-Bioretenention = (Use smaller of two volumes)	656	cf
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$P_E$ (in) Achieved =	2.6
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**M-6 MBIO-4 - AB20BMP000055**

SWM As-Builts

Location:

Calculate  $R_v$ :

Drainage Area, A	0.19	acres	8196	square feet	(20,000 sf Max, not including facility)
Total Proposed Impervious Area	0.17	acres	7405	square feet	
Impervious Area Percentage, $I_{post}$	90.4%				
Runoff Coefficient, $R_v = 0.05 + 0.009(I_{post})$	0.86				

Calculate ESD Volumes Provided Using Micro-Bioretenention:

Filter Bed Area ( $A_f$ ) Sizing $A_f$  must be a minimum of 2% of DA

$A_{f(min)} = 0.02 * DA =$	164	sf
Area of Filter Bed Provided =	450	sf

Stage Storage Table for Micro-Bioretenention

ELEV	AREA (sf)	AVG AREA (sf)	INC ELEV DIFF (ft)	TOTAL DEPTH (ft)	INTERVAL STOR. (cf)	TOTAL STOR. (cf)	TOTAL STOR. (ac-ft)
58.00	450					0	0.00000
58.25	560	505	0.3	0.3	126	126	0.00290
58.50	660	610	0.25	0.50	153	279	0.00640

Ponding depth =	0.50	ft	(1 ft Max)
Volume Provided prior to filtration =	279	cf	
Depth of Mulch =	0.25	ft	
Depth of Filter Media =	3.0	ft	(2 - 4 ft)
Depth of Stone to Invert of Underdrain =	1.0	ft	(Including 4" pea gravel bridging layer)
Volume Provided within mulch, filter and stone layers			
$5 + 3 + 1) * 450 * 0.4 =$	765	cf	
Total Volume Provided in Facility =	1,044	cf	

Maximum Amount of Runoff that can be captured = Runoff from 1-yr, 24 hr storm ( $P = 2.6$ )

Max ESDv = $(P)(R_v)(A)/12 =$	1,533	
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ESDv Provided by Micro-Bioretenention = (Use smaller of two volumes)	1,044	cf
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$P_E$ (in) Achieved =	1.8	
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**M-6 MBIO-5 - AB20BMP000056**

SWM As-Builts

Location:

Calculate  $R_v$ :

Drainage Area, A	0.22	acres	9583	square feet	(20,000 sf Max, not including facility)
Total Proposed Impervious Area	0.12	acres	5227	square feet	
Impervious Area Percentage, $I_{post}$	54.5%				
Runoff Coefficient, $R_v = 0.05 + 0.009(I_{post})$	0.54				

Calculate ESD Volumes Provided Using Micro-Bioretenention:

Filter Bed Area ( $A_f$ ) Sizing $A_f$  must be a minimum of 2% of DA

$A_{f(min)} = 0.02 * DA =$	192	sf
Area of Filter Bed Provided =	1,100	sf

Stage Storage Table for Micro-Bioretenention

ELEV	AREA (sf)	AVG AREA (sf)	INC ELEV DIFF (ft)	TOTAL DEPTH (ft)	INTERVAL STOR. (cf)	TOTAL STOR. (cf)	TOTAL STOR. (ac-ft)
58.00	1,100					0	0.00000
		1,230	0.3		308		
58.25	1,360			0.3		308	0.00706
		1,660	0.25		415		
58.50	1,960			0.50		723	0.01659

Ponding depth =	0.50	ft	(1 ft Max)
Volume Provided prior to filtration =	723	cf	
Depth of Mulch =	0.25	ft	
Depth of Filter Media =	2.0	ft	(2 - 4 ft)
Depth of Stone to Invert of Underdrain =	1.0	ft	(Including 4" pea gravel bridging layer)
Volume Provided within mulch, filter and stone layers			
+ 2 + 1) * 1100 * 0.4 =	1,430	cf	
Total Volume Provided in Facility =	2,153	cf	

Maximum Amount of Runoff that can be captured = Runoff from 1-yr, 24 hr storm ( $P = 2.6$ )

Max ESDv = $(P)(R_v)(A)/12 =$	1,123	
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ESDv Provided by Micro-Bioretenention = (Use smaller of two volumes)	1,123	cf
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$P_E$ (in) Achieved =	2.6	
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**M-6 MBIO-6 - AB20BMP000057**

SWM As-Builts

Location:

Calculate  $R_v$ :

Drainage Area, A	0.23	acres	9971	square feet	(20,000 sf Max, not including facility)
Total Proposed Impervious Area	0.05	acres	2259	square feet	
Impervious Area Percentage, $I_{post}$	22.7%				
Runoff Coefficient, $R_v = 0.05 + 0.009(I_{post})$	0.25				

Calculate ESD Volumes Provided Using Micro-Bioretenention:

Filter Bed Area ( $A_f$ ) Sizing $A_f$  must be a minimum of 2% of DA

$A_{f(min)} = 0.02 * DA =$	200	sf
Area of Filter Bed Provided =	200	sf

Stage Storage Table for Micro-Bioretenention

ELEV	AREA (sf)	AVG AREA (sf)	INC ELEV DIFF (ft)	TOTAL DEPTH (ft)	INTERVAL STOR. (cf)	TOTAL STOR. (cf)	TOTAL STOR. (ac-ft)
58.00	200					0	0.00000
58.25	205	203	0.3	0.3	51	51	0.00116
58.80	210	208	0.55	0.80	114	165	0.00378

MULCH AREA SHOWN AT VARYING ELEVATIC

Ponding depth =	0.80	ft	(1 ft Max)
Volume Provided prior to filtration =	165	cf	
Depth of Mulch =	0.25	ft	
Depth of Filter Media =	3.0	ft	(2 - 4 ft)
Depth of Stone to Invert of Underdrain =	1.0	ft	(Including 4" pea gravel bridging layer)
Volume Provided within mulch, filter and stone layers			
$5 + 3 + 1) * 200 * 0.4 =$	340	cf	
Total Volume Provided in Facility =	505	cf	

Maximum Amount of Runoff that can be captured = Runoff from 1-yr, 24 hr storm ( $P = 2.6$ )

Max ESDv = $(P)(R_v)(A)/12 =$	550	
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ESDv Provided by Micro-Bioretenention = (Use smaller of two volumes)	505	cf
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$P_E$ (in) Achieved =	2.4	
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## STORMWATER MANAGEMENT REPORT

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**Hampton Inn & LaQuinta Inn**

City of Aberdeen  
Harford County, Maryland

---

RECEIVED  
APR 22 2015

CITY OF ABERDEEN

**OWNER/DEVELOPER**

Crossroads Hospitality  
793 West Bel Air Avenue  
Aberdeen, Maryland 21001  
Attn: Mr. Nick Patel  
Phone: 410.272.6000



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### Professional Certification

"I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 34672, Expiration Date: 08/23/2015."



PREPARED BY:  
**MORRIS & RITCHIE ASSOCIATES, INC.**  
ENGINEERS, ARCHITECTS, PLANNERS, SURVEYORS, AND LANDSCAPE ARCHITECTS  
3445-A Box Hill Corporate Center Drive  
Abingdon, Maryland 21009  
(410) 515-9000  
FAX (410) 515-9002  
CONTACT: Amy G. DiPietro, P.E., LEED AP  
MRA Project No. 18189

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January 2015

Approved 5/7/15



Project: Aberdeen Hotel  
Job #: 18189  
Designed by: CEM  
Date: 12/31/2014  
Checked by: AGD

**Design of Micro-Bioretention Facility  
in Drainage Area 1a**  
**AB20BMP000109**



**Objective #1: Define the drainage area.**

Total Drainage Area (DA) =	9,386 sf	
Total Impervious Area (Ai) =	6,339 sf	
Impervious Percentage (I) =	67.5%	$I = A_i / DA$
Runoff Coefficient ( $R_v$ ) =	0.658	$R_v = 0.05 + 0.009 \times I \times 100$

**Objective #2: Determine the ESD Volume provided.**

Bottom Area of Ponding =	300 sf	Length =
Top Area of Ponding =	300 sf	Width =
Ponding Depth =	12"	
Ponding Volume =	300 cf	
Filter Area ( $A_f$ ) =	300 sf	
Planting Media Thickness =	2.0 ft.	
Storage within Planting Media =	240 cf	(assumes 40% porosity in planting media)
Total ESD <sub>v</sub> Provided =	540 cf	
Micro-bioretention facilities shall be sized to capture a minimum of 75% of ESD volume		
Total ESD <sub>v</sub> Credited =	720 cf	(ESD <sub>v</sub> provided / 75%)
Equivalent $P_E$ Provided =	1.4 in.	$P_E = (12 \times ESD_v) / (R_v \times DA)$



Project: Aberdeen Hotel  
Job #: 18189  
Designed by: CEM  
Date: 12/31/2014  
Checked by: AGD

### Design of Micro-Bioretention Facility in Drainage Area 2a

AB20BMP000110



#### Objective #1: Define the drainage area.

Total Drainage Area (DA) =	18,187 sf	
Total Impervious Area (Ai) =	12,177 sf	
Impervious Percentage (I) =	67.0%	$I = A_i / DA$
Runoff Coefficient ( $R_v$ ) =	0.653	$R_v = 0.05 + 0.009 \times I \times 100$

#### Objective #2: Determine the ESD Volume provided.

Bottom Area of Ponding =	515 sf	Length =
Top Area of Ponding =	515 sf	Width =
Ponding Depth =	12"	
Ponding Volume =	515 cf	
Filter Area ( $A_f$ ) =	515 sf	
Planting Media Thickness =	2.0 ft.	
Storage within Planting Media =	412 cf	(assumes 40% porosity in planting media)
Total ESD <sub>v</sub> Provided =	927 cf	
Micro-bioretention facilities shall be sized to capture a minimum of 75% of ESD volume		
Total ESD <sub>v</sub> Credited =	1,236 cf	(ESD <sub>v</sub> provided / 75%)
Equivalent $P_E$ Provided =	1.2 in.	$P_E = (12 \times ESD_v) / (R_v \times DA)$





Project: Hamilton Reserve  
Job #: 17023  
Designed by DRS  
Date 1/14/2015  
Checked by: AGD

**Design of Bio-Swale Facility #2b  
in Drainage Area 2b  
(Offline Facility - see Flowmaster Outputs)**



AB20BMP000111

**Objective #1: Define the drainage area.**

Total Drainage Area (DA) =	20,728 sf	
Total Impervious Area (A <sub>i</sub> ) =	18,000 sf	
Impervious Percentage (I) =	86.8%	$I = A_i / DA$
Runoff Coefficient (R <sub>v</sub> ) =	0.832	$R_v = 0.05 + 0.009 \times I \times 100$

**Objective #2: Determine the ESD Volume provided.**

Total Filter Area (A <sub>f</sub> ) =	690 sf	Length = 220
Temporary Ponding Depth =	6"	Width = 8
Planting Media Thickness =	4.0 ft.	
Total ESD <sub>v</sub> Provided =	1,449 cf	
Equivalent P <sub>E</sub> Provided =	1.01 in.	$P_E = (12 \times ESD_v) / (R_v \times DA)$

**Objective #3: Determine the peak discharge flow rate for the ESD event (MDE Appendix D.10)**

Runoff Volume (Q <sub>a</sub> ) =	0.84 in.	$Q_a = P_E \times R_v$
Runoff Curve Number (CN) =	98	$CN = 1000 / [10 + 5P_E + 10Q_a - 10\sqrt{(Q_a^2 + 1.25Q_aP_E)}]$
Time of Concentration (T <sub>c</sub> ) =	5 min	assumed
Initial Abstraction (I <sub>a</sub> ) =	0.032	$I_a = 200 / CN - 2$
Unit Peak Discharge (q <sub>u</sub> ) =	1062	TR-55 Exhibit 4-II
Peak Flow Rate (Q <sub>ESD</sub> ) =	0.662 cfs	$Q_{ESD} = q_u \times DA(mi^2) \times Q_a$

10-yr Peak Discharge (Q<sub>10</sub>) = 1.20 cfs \* SEE FLOWMASTER OUTPUT FOR BYPASS MH 7

**Objective #4: Determine the swale velocity for the ESD and 10-yr events (Manning's Equation)**

Swale Geometry			ESD Event	10-yr Event
Width	8.0 ft.	Manning's	0.10	0.10
Side Slope	2:1	Depth	0.15 ft.	0.21 ft.
Slope	1.7% ✓	Discharge	0.661 cfs	1.20 cfs
		Velocity	0.531 fps	0.666 fps
			✓ < 1 fps	✓ < 4 fps

## Middelton Road Extension

From MD Route 22 and Beards Hill Road  
Aberdeen, MD 21001

### STORMWATER MANAGEMENT REPORT

---



#### ENGINEERS CERTIFICATION

I HEREBY CERTIFY THAT ALL PROPOSED WORK SHOWN ON THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.28378, EXPIRATION DATE: 01/01/2021.



SIGNATURE

2/5/2019  
DATE

CHRISTOPHER R. MINK  
PRINT NAME



*Property Owner:*

Department of Public Works  
City of Aberdeen  
60 N. Parke Street  
Aberdeen, MD 21001  
Attn: Parley Hess

*Prepared by:*

CNA, LLC.  
1630 Robin Circle  
Forest Hill, Maryland 21050  
Office: 443-652-6160  
Contact: Bob Royer

---

February 2019

Area	GS1 - AB21BMP000002	Grass Swale #1	ESD Requirements			
Total Drainage Area =		34,924 SF	(	0.80	Acres +/-)	
Total Impervious Cover to Facility =		23,670 SF	(	0.54	Acres +/-)	67.8%
Rv= 0.05+0.009 (I)=	0.66					
B Soil =		7,344 SF	(	0.17	Acres +/-)	21.0%
C Soil =		18,536 SF	(	0.43	Acres +/-)	53.1%
D Soil		9,044 SF	(	0.21	Acres +/-)	25.9%
Target B Soil P <sub>E</sub> =	2.2	"	(Table 5.3)			
Target C Soil P <sub>E</sub> =	2.0	"				
Target D Soil P <sub>E</sub> =	1.8	"	Weighted Ave. Soil P <sub>E</sub> = 1.99			
Target ESDv =	[ 2.2 "x 0.21 + 2.0 "x 0.53 + 1.8 "x 0.26 ] x 0.66 x 34,924 /12'					
	=	3,823	CF			
Minimum ESDv=	1.0	x	0.66	x	34,924	\ 12 = 1,921 CF
Maximum ESDv=	2.69	x	0.66	x	34,924	\ 12 = 5,167 CF
Area shown on plan =	5,904	SF				
PE = ESDv x 12" / Rv x DA =	1,948	x12" /	0.66	x	34,924	= 1.01 "
Af = PE x DA / 15	1.99	x	34,924	/ 15	"=	1,249 SF Needed
Min A <sub>f</sub> =	2% of	34,924	=	698	SF	

Grass Swale #1	Facility	GS1
ESDv Treatment = 0.33 ' x	738 ' L x	8 ' W
= 1948	CF	

Total Storage Volume =	1,948	CF
ESDv Provided =	1,948	CF
1,948	CF	> 1,921 CF Facility Meets Minimum ESDv Requirements

Area	GS2 - AB21BMP000003	Grass Swale #2	ESD Requirements			
Total Drainage Area =		39,900 SF	(	0.92	Acres +/-)	
Total Impervious Cover to Facility =		11,208 SF	(	0.26	Acres +/-)	28.1%
Rv= 0.05+0.009 (I)=	0.30					
B Soil =		8,830 SF	(	0.20	Acres +/-)	22.1%
C Soil =		12,319 SF	(	0.28	Acres +/-)	30.9%
D Soil =		18,751 SF	(	0.43	Acres +/-)	47.0%
Target B Soil PE=	1.6					
Target C Soil PE=	1.6		(Table 5.3)			
Target D Soil P <sub>E</sub> =	1.2	"				
Weighted Ave. Soil P <sub>E</sub> = 1.41						
Target ESDv =	[ 1.6 " x 0.22 + 1.6 " x 0.31 + 1.2 " x 0.47 ] x 0.30 x 39,900 / 12"					
	=	1,422	CF			
Minimum ESDv=	1.0	x	0.30	x	39,900	\ 12 = 1,007 CF
Maximum ESDv=	2.69	x	0.30	x	39,900	\ 12 = 2,708 CF
Area shown on plan =	7,800	SF				
PE = ESDv x 12" / Rv x DA =	2,574	x12" /	0.30	x	39,900	= 2.56 "
Af = PE x DA / 15	1.41	x	39,900	/ 15	"= 4,443	SF Needed
Min A <sub>f</sub> =	2% of 39,900	=	798	SF		

Grass Swale #2	Facility	GS2
ESDv Treatment = 0.33 ' x	975 ' L x	8 ' W
=	2574	CF

Total Storage Volume =	<b>2,574</b>	<b>CF</b>
ESDv Provided =	<b>2,574</b>	<b>CF</b>
<b>2,574</b>	<b>CF</b>	<b>&gt; 1,422 CF Facility Meets Minimum ESDv Requirements</b>



## **CITY OF ABERDEEN**

### **National Pollutant Discharge Elimination System General Permit For Discharges From Small Municipal Separate Storm Sewer Systems**

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

## **FISCAL YEAR 2021**

## **MS4 GENERAL PERMIT PROGRESS REPORT YEAR 3**

## **ATTACHMENT I-2**

## **WATERSHED ASSESSMENT AND RESTORATION PLAN**

# CITY OF ABERDEEN

## WATERSHED ASSESSMENT AND RESTORATION PLAN

SEPTEMBER | 2020

### PREPARED FOR

City of Aberdeen  
60 N. Parke Street  
Aberdeen, MD 21001

### PREPARED BY

KCI Technologies, Inc.  
936 Ridgebrook Road  
Sparks, MD 21152



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- APPENDIX B – HOT SPOT SITE INVESTIGATION DATA SHEETS
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## LIST OF ACRONYMS

BMP	Best Management Practices
EPA	U.S. Environmental Protection Agency
GPS	Global Positioning System
MDE	Maryland Department of the Environment
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
SPSC	Step Pool Storm Conveyance
SCA	Stream Corridor Assessment
SW-WLA	Stormwater Wasteload Allocation
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids

# 1 INTRODUCTION

## 1.1 BACKGROUND

The City of Aberdeen has initiated a watershed assessment in response to requirements set forth by the Maryland Department of the Environment (MDE) in the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s; 13-IM-5500, MDR055500), issued on October 31, 2018 (MDE, 2018). The assessments described in this report support the City's goals for healthy watersheds and natural resources, and also support progress towards satisfying several regulatory and permit requirements. The assessments provide the next step in the planning process specifically for the urban stormwater sector regulated by the NPDES permit. The watershed assessment, through desktop and field assessment, identify watershed conditions and specific restoration solutions to meet the City's watershed restoration goals.

## 1.2 STUDY AREA DESCRIPTION

The City of Aberdeen is the largest municipality in Harford County, Maryland, and is located in the southeastern side of the County just north of Aberdeen Proving Grounds (**Figure 1**). The City falls within three distinct 8-digit watersheds. The northeastern portion of the City is part of the Swan Creek watershed and includes Carsins Run to the west, which flows into the mainstem Swan Creek, which flows southeast to the Chesapeake Bay. The southwestern portion of the City is part of the Bush River watershed and includes several tributaries to Church Creek, which flows south into the Bush River. Finally, several small tributary streams in the Aberdeen Proving Ground watershed of the Bush River fall within the southern portion of the Aberdeen boundary. The City of Aberdeen is bisected by both Pulaski Highway (Route 40) and Interstate 95 (**Figure 2**).

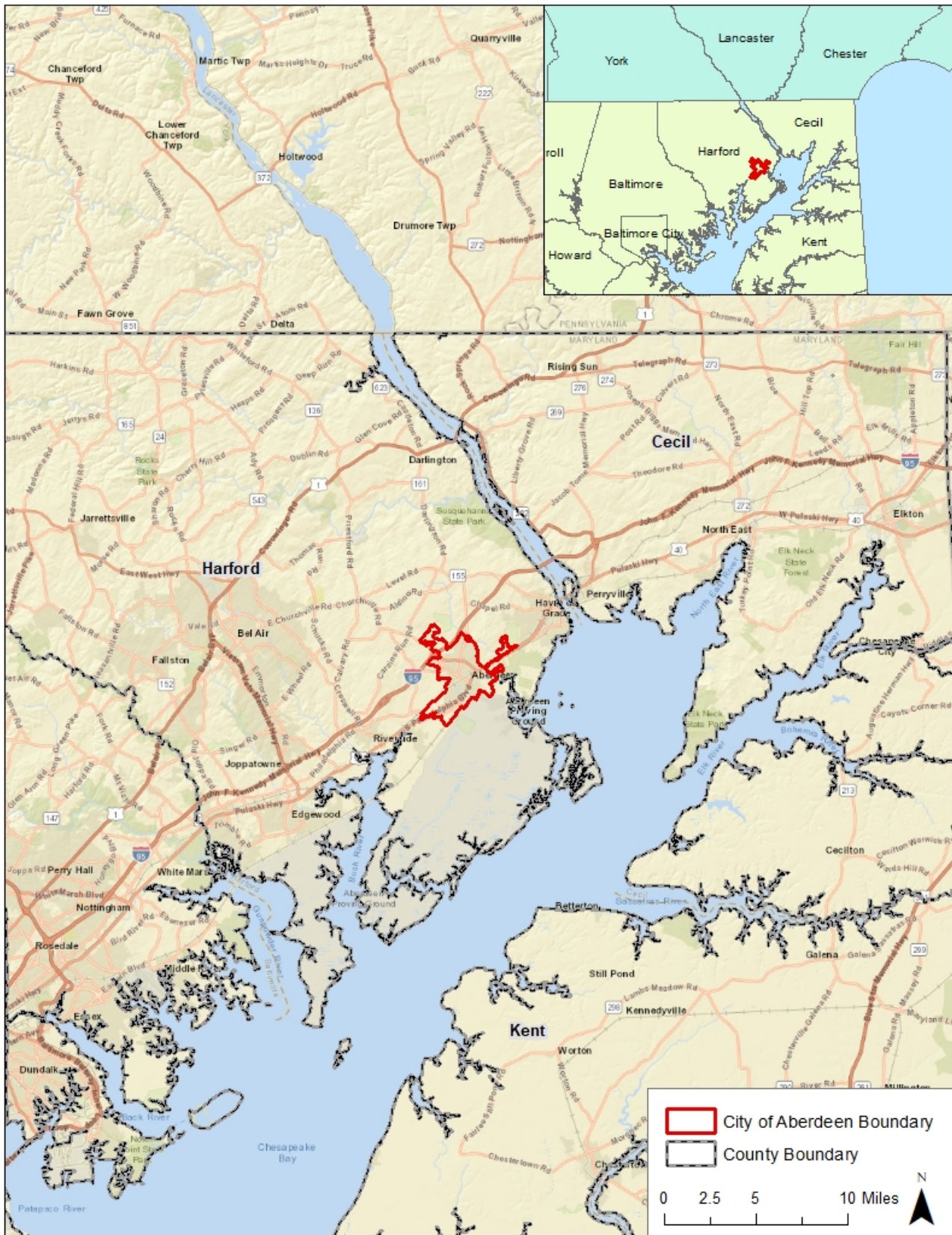


FIGURE 1: STUDY AREA LOCATION MAP



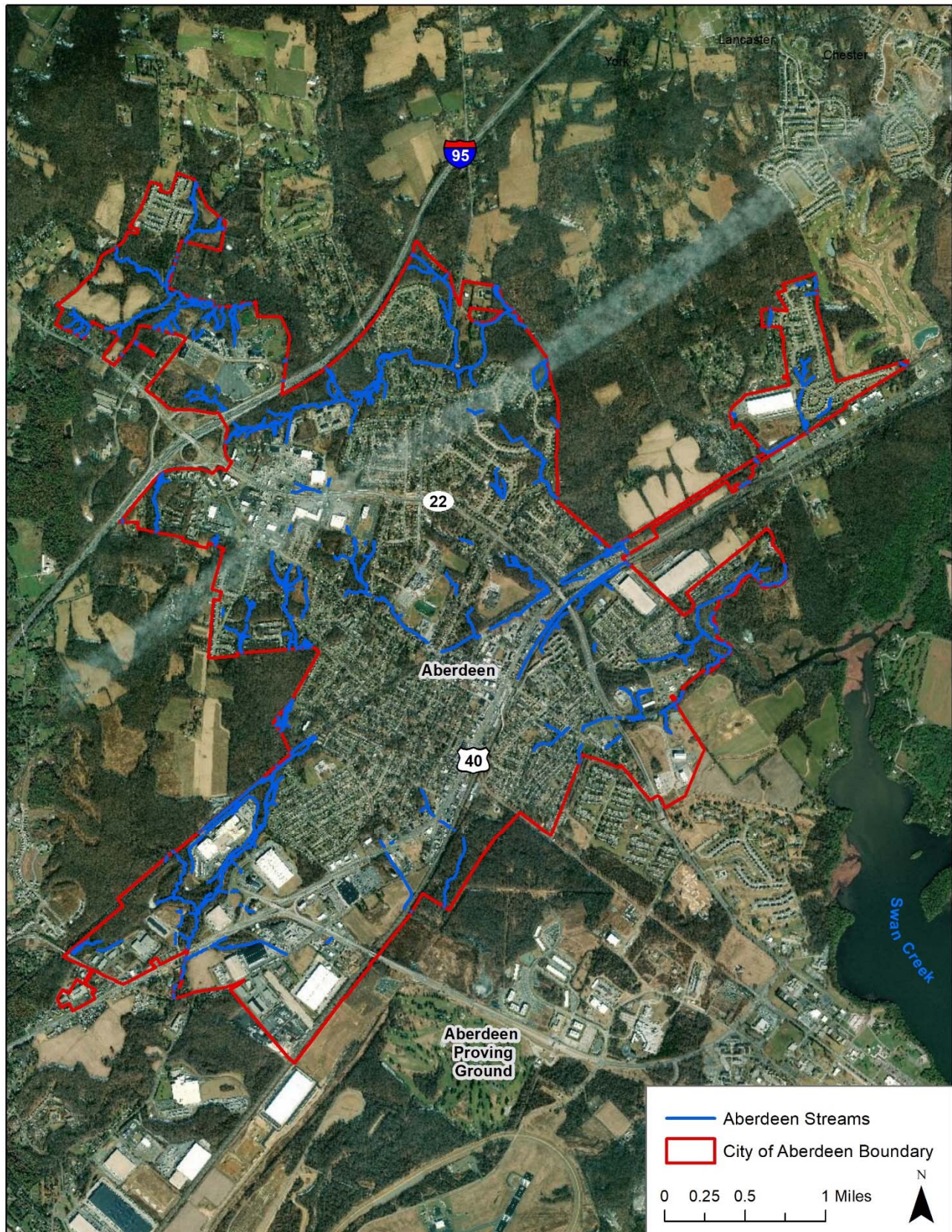


FIGURE 2: CITY OF ABERDEEN LOCATION



### 1.3 IMPERVIOUS RESTORATION GOALS

As a requirement of the NPDES small Municipal Separate Storm Sewer System (MS4) Discharge Permit issued by MDE to small MS4s, the City of Aberdeen must treat 20% of remaining baseline untreated impervious acres by 2025. Impervious accounting methodology is included in *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated* (MDE, 2019). Untreated impervious includes those areas where stormwater practices provide less than the current Maryland standard water quality volume for runoff from 1" of rainfall. The City of Aberdeen has completed an Impervious Area Restoration Work Plan, which outlines the requirements for restoration activities and begins to outline the suite of Best Management Practices (BMPs) required to meet the 20% impervious surface restoration goal.

The assessments described in this report are designed to rapidly assess the current conditions of stream corridors and upland areas throughout the City. The goal of this effort is to identify and develop conceptual designs and planning level cost estimates for restoration opportunities such as stream restoration, tree planting, and stormwater management retrofits to achieve cost-effective impervious treatment. Section 5.2 of this report describes the impervious credit associated with these recommended projects.

## 2 WATERSHED ASSESSMENT METHODS

Stream corridor assessments (SCA) were conducted in the City of Aberdeen in February and March 2020. The assessments required permission to access streams on private property. Target stream sites were identified, and the property owners were sent property access permission letters. No landowners denied access to their properties; therefore, all properties targeted for assessments were able to be accessed as part of this effort.

### 2.1 UPLAND ASSESSMENT

Upland areas in the watershed were assessed to locate potential pollution sources that could influence water quality and to identify opportunities for restoration projects. This assessment was conducted according to the Unified Subwatershed and Site Reconnaissance (USSR) Manual developed by the Center for Watershed Protection (Wright et al., 2005). This manual provides detailed guidance for watershed groups, municipal staff and consultants to quickly identify major sources of stormwater pollution and to assess restoration potential for source controls, pervious area management and improved municipal maintenance (e.g., education, retrofits, street sweeping, open space management, etc.).

This section outlines two major components of the USSR:

- Neighborhood Source Assessment (NSA)
- Hotspot Site Investigation (HSI)

Each of these components is described in detail in the following sections.

### 2.1.1 NEIGHBORHOOD SOURCE ASSESSMENT

A Neighborhood Source Assessment (NSA) reconnaissance was conducted in residential neighborhood areas to evaluate pollution-producing behaviors. The NSA rates the potential severity and type of non-point source pollution from residential behaviors. It also provides an assessment of the influence of imperviousness for each site by providing an estimate of whether roof drainage is directed to cisterns, storm drains, impervious areas or pervious areas and the percent of driveways in the neighborhood that are impervious.

Prior to conducting NSAs in the field, neighborhoods were delineated in the office using GIS data, including parcel data and aerial photographs. Neighborhoods were delineated and categorized based on groups of homes with similar characteristics such as house type (single family, townhouse, etc.) lot size, age of development, and lot characteristics (majority lawn, forested, etc.). These neighborhoods were then verified in the field.

The field team drove through every street in each selected neighborhood to identify potential pollution sources and restoration opportunities. General information was collected in each neighborhood for yards and lawns; driveways, sidewalks, and curbs; rooftop runoff; and common areas. These are each described briefly below.

#### Yards and Lawns

In suburban residential areas, lawns typically represent a large portion of the pervious cover and can be a major source of pollutants such as pesticides and nutrients. Potential pollution sources evaluated by field teams under this category include grass cover and management status (i.e. fertilization and irrigation methods), bare soils, swimming pools and trash in yards. Existing tree cover and landscaping in each neighborhood was also noted to evaluate the potential to expand these areas to intercept additional stormwater runoff.

#### Driveways, Parking Lots, Sidewalks and Curbs

The presence of driveways, sidewalks and curbs was noted for each neighborhood assessed. Information was collected for potential or existing pollution sources from these areas such as stained or dirty driveways, lawn clippings or leaves on sidewalks, pet waste, trash and/or debris along curbs and long term car parking (i.e. unused cars can potentially leak oil and other pollutants).

#### Rooftops

Rooftops that are directly connected to other impervious surfaces through downspouts can contribute pollutants directly to stream systems. Disconnecting rooftops through downspout retrofits can reduce this potential source of pollution. In each neighborhood field teams estimated the percentage of downspouts discharging to impervious surfaces and evaluated the potential for implementing downspout retrofits.

### Common Areas

Common areas within neighborhoods and in public parks are a good place to evaluate community behaviors such as pet waste disposal, trash dumping, storm drain marking, and buffer management. Field teams noted the condition of common areas, the activities occurring there that could be a potential source of pollution, and opportunities for tree plantings.

Upon completion of the Neighborhood Source Assessments, specific actions were identified based on the overall assessment. Potential actions that result in restoration credit for the City of Aberdeen generally include:

- Downspout disconnection
- Rain gardens
- Rain barrels
- Conservation landscaping
- Tree planting

Once all of the above neighborhood information was compiled, the final step of the NSA was to rate the overall neighborhood pollution severity and restoration potential. The severity of pollution generated by a neighborhood is denoted by the Pollution Severity Index (PSI). There are up to 14 potential pollution sources rated. Neighborhoods are given PSI ratings of severe (7 or more sources), high (4 to 6), moderate (2 to 3), or low (0 to 1). The neighborhood's potential for restoration projects is also rated with the Restoration Opportunity Index (ROI) in a similar fashion, with nine potential opportunities. These are assigned a rating of high (5 or more), moderate (3 to 4), or low (0 to 2).

#### 2.1.2 HOTSPOT SITE INVESTIGATIONS

Stormwater hotspots are areas that have potential to generate higher concentrations of stormwater pollutants than typically found in urban runoff and/or have a higher risk of spills, leaks, or illicit discharges due to the nature of their operations (Wright et al., 2005). These generally include commercial, industrial, government, or transport-related operations. Stormwater pollutants generated as a result of hotspot operations depend on the specific site activities, but typically include nutrients, hydrocarbons, metals, chloride, pesticides, bacteria, and trash.

Commercial hotspots include a range of businesses and activities. Operations characteristic of commercial hotspots include waste or wash water generation, outdoor material storage, fuel handling, or vehicle repair. Common commercial hotspots include auto repair shops, car dealers, car washes, parking facilities, gas stations, marinas, garden centers, construction equipment and building material lots, community swimming pools, and restaurants.

Industrial operations utilize, generate, handle, and/or store pollutants that can be washed off with stormwater, spilled, or mistakenly discharged into the storm drain. Many industrial hotspots are regulated under National Pollution Discharge Elimination System (NPDES) industrial discharge permits. Like industrial operations, many government hotspots are subject to NPDES stormwater permits. Many are regulated and include uses such as airports, ports, highway construction, and trucking centers.

The purpose of the HSI is to evaluate pollution potential from hotspot operations and identify potential restoration practices that may be necessary.

The HSI assessment was conducted at locations identified in the office from aerial photography and mapping layers in GIS, and was targeted towards business, commercial, and industrial sites. The HSIs were focused on unregulated hotspots since regulated hotspots are previously known pollutant sources. Regulated stormwater hotspots are already subject to NPDES permit regulations.

While hotspots have unique operations, drainage systems, and pollutant-related risks, stormwater quality problems can be characterized and evaluated by operations and activities common to most hotspots. The HSI provides an evaluation of six common operations at each potential hotspot: vehicle operations, outdoor materials, waste management, physical plant, turf/landscaping, and stormwater infrastructure. The field team visited each potential hotspot to determine water quality impacts and restoration opportunities. These six categories were used to standardize the HSI process and to be able to prioritize potential restoration efforts. These categories are described briefly below.

#### Vehicle Operations

Vehicle operations include maintenance, repair, recycling, fueling, washing or long-term parking. The presence of any of these activities was noted for each site since they can be a major source of metals, oil and grease, and hydrocarbons. Outdoor activities including vehicle storage, repair, fueling, and washing were also noted as potential pollution sources.

#### Outdoor Materials

Stormwater quality issues result from improper handling or storage of outdoor materials at hotspots. Locations where materials were loaded or unloaded were examined to see if they were uncovered and draining to a storm drain inlet. Storage areas were also evaluated for types of materials stored outdoors and their potential for entering the storm drain system. The field team looked for improperly labeled storage containers, lack of secondary containment for liquids, and whether the storage area was directly or indirectly connected to the storm drain system. If any of these were observed, they were marked as potential pollution sources.

#### Waste Management

Every hotspot generates waste as a result of daily operations that can be potentially hazardous or a source of stormwater pollution depending on the type of waste and how it is stored. The field team noted the type of waste generated (e.g., hazardous, garbage, etc.) and the condition of dumpsters. Dumpsters with no cover or open lids, with leaks, damaged/in poor condition, and/or overflowing were noted as potential pollution sources. Dumpsters located near storm drain inlets or lacking runoff diversion methods were also recorded as potential pollution sources.



### Physical Plant

Common physical plant practices include cleaning, maintaining, or repairing the building, outdoor work areas, and parking lots. For each hotspot, the condition of the building itself was evaluated. Similarly, parking lots that were stained, dirty, breaking up, and/or impervious were recorded as potential pollution sources.

### Turf/Landscaping

Ground maintenance activities for turf/landscaped areas were also evaluated at hotspot sites. High turf management and improper irrigation practices were noted since they are potential pollution sources of nutrients, fertilizer, and pesticides. The field team also determined whether landscaped areas drained directly to storm drains or if organics such as leaves and grass accumulated on impervious surfaces.

### Stormwater Infrastructure

If stormwater treatment practices were not present, this was flagged as a potential pollution source. Private storm drains were also evaluated for pollution potential. Storm drains with considerable amounts of sediment, organics, and/or trash was identified as potential pollution sources. Opportunities for new stormwater treatment practices were noted and will be revisited during the Retrofit Reconnaissance Inventory (RRI).

For each operation on the HSI field form, there is an observed pollution source box that is checked when there is clear evidence of pollution problems at a site. One example would be washwater from an automotive or vehicle operations business being washed down into a storm drain, or oil and grease stains on the pavement. If applicable, one or more of the potential follow-up actions listed below were identified, based on field observations of a hotspot site:

- Refer for immediate enforcement
- Follow-up on-site inspection
- Test for illicit discharge
- Future education effort
- On-site non-residential retrofit
- Check to see if hotspot is an NPDES non-filer
- Pervious area restoration candidate
- Schedule a review of storm water pollution prevention plan

The overall pollution prevention potential for each hotspot site is assessed based on observed sources of pollution and the potential of the site to generate pollutants that would likely enter the storm drain network. There are up to 26 potential pollution sources rated in the assessment. Sites are classified into four hotspot severity categories:

- Not a Hotspot – no observed pollutant; less than 5 sources noted
- Potential – no observed pollution; 5 to 10 sources noted
- Confirmed – pollution observed; 10 to 15 sources noted
- Severe – multiple polluting activities directly observed, more than 15 sources noted

## 2.2 STREAM CORRIDOR ASSESSMENT

Stream corridor assessments (SCA) were conducted on all stream reaches within the City boundary, in order to assess the conditions of the stream corridors and identify potential restoration opportunities.

Field crews conducted stream field investigations using modified SCA protocols as outlined in *Stream Corridor Assessment Survey: SCA Survey Protocols* (Yetman, 2001). Slight modifications were made to the protocols to allow a more rapid assessment to quickly inventory important features and identify restoration opportunities. This allowed field crews to more quickly walk all stream reaches within the City limits. Property access permission letters were sent to all landowners within the target watershed with streams on their property. No landowners denied access to their properties, therefore all properties targeted for assessments were able to be accessed as part of this effort.

The field investigation consisted of a two-person team walking the stream channel and conducting a visual assessment to locate problem areas and assess their severity and correctability. The field team collected information on channel alteration, erosion, exposed utility pipes, drainage pipe outfalls, fish barriers, inadequate buffers, construction in or near the stream, trash dumping, and recorded any unusual conditions observed. Representative sites were selected at locations representative of each perennial stream or intermittent stream segment of significant size or flow. The general physical habitat condition was assessed at the representative sites using a modified version of the *U.S. Environmental Protection Agency's (EPA) Rapid Bioassessment Protocols* (Barbour et al., 1999). The assessment includes qualitative ratings for ten habitat parameters as well as information on wetted width, pool, run, and riffle depths, and channel substrate.

During the field assessment, points were given unique alphanumeric identifiers according to the stream reach and point type. This allowed each point to have a unique ID, for example, 001\_IB001. A complete list of point types and corresponding alphanumeric identifiers used during the field assessments is included below:

- Erosion (ES)
- Exposed pipe (EP)
- Pipe outfall (PO)
- Fish barrier (FB)
- Trash dumping (TD)
- Channel alteration (CA)
- Unusual condition (UC)

Inadequate buffers (IB) are typically documented in stream corridor assessments. Since Aberdeen is highly urbanized, inadequate stream buffers are widespread due to urban encroachment and in most cases it would be impractical to reestablish forest due to the presence of development. As a result, individual inadequate buffer inventory points were not collected. Instead, feasible opportunities for tree planting projects were identified and documented.

Trash dumping (TD) was also ubiquitous across the study area, therefore every location was not documented. Instead, only trash dumping sites that were isolated and severe were recorded.

A GPS location was recorded, and a photograph was taken for each assessment point. Linear features (eroding banks and channel alteration) were documented with a GPS location at each end of the impact and a line feature was developed to better represent the full extent of the problem area. The assessment rated each feature on a 1 to 5 scale according to its severity, correctability, and accessibility; where a score of 1 is the most severe, but also the most correctible and the most accessible. The results were then compiled into a database which will be used to identify and prioritize areas for restoration actions.

In addition to the basic SCA set of impacts and assessments, KCI added an inventory of Potential Best Management Practice (BMP) locations, in which the field crew could identify potential BMP types that could be implemented at any particular location. This reduced the need for additional field visits and property owner coordination. The potential BMP types included the following:

- Bioretention/raingarden
- Outfall stabilization/Step Pool Conveyance System (SPSC)
- Riparian buffer enhancement or replacement
- Stormwater management pond/pond retrofit
- Stream restoration
- Wetland creation

### 3 WATERSHED ASSESSMENT RESULTS

#### 3.1 UPLAND ASSESSMENT

Upland assessments including both the NSA and HSI were completed between February 10 and March 9, 2020. Field crews assessed a total of 26 neighborhoods and 20 hotspots in the City of Aberdeen.

##### 3.1.1 NEIGHBORHOOD SOURCE ASSESSMENT

A total of 26 neighborhoods were assessed in the City of Aberdeen (**Figure 3**). Neighborhoods consisted of a mix of single family detached, multifamily apartment complexes, single family attached, and mobile homes. In general, the assessed neighborhoods ranged from 10 to 110 years old. General characteristics of each neighborhood are presented in **Table 1**. A complete record of NSA data is included in **Appendix C**.

TABLE 1: GENERAL CHARACTERISTICS OF NEIGHBORHOODS ASSESSED

Site ID	Neighborhood / Subdivision	LU Type	Lot Size (acres)	Age (Decade)	Curb & Gutter	% Imper-vious	% Lawn	% Canopy
NSA-1	Eagle's Rest	Single Fam Detached	1/4	2010	Yes	50	50	0
NSA-2	The Yard's at Fieldside Village	Multifamily	<1/4	2010	Yes	90	10	0
NSA-3	Residences of Summerlin	Multifamily	<1/4	2005	Yes	80	20	0
NSA-4	The Osprey Apartments/ Cranberry Run Apartments	Multifamily	<1/4	1970	Yes	60	30	0
NSA-5	Pine Ridge Rental Homes	Single Fam Detached	<1/4	1950	Yes	40	60	0
NSA-6	Hillside Terrace Apartments	Multifamily	<1/4	2000	No	75	25	0
NSA-7	Bush Chapel Rd, Schofield Ave	Single Fam Detached	1/4	1930	No	50	45	0
NSA-8	Chapel Glen	Single Fam Detached	1/4	2000	Yes	75	25	0
NSA-9	Fairbrooke Apartments	Multifamily	<1/4	1990	Yes	90	5	0
NSA-10	Woodland Green Way, Woodland Green Ct	Single Fam Attached	1/4	1990	Yes	60	30	0
NSA-11	Plater St, Baltimore St	Single Fam Detached	1/4	1910	Yes	50	45	0
NSA-12	Baker St, Colaine Dr	Single Fam Detached	1/4	1950	Yes	50	30	0
NSA-13	Hillcrest Dr, Beards Hill Rd	Single Fam Detached	1/4	1950	Yes	40	50	0

Site ID	Neighborhood / Subdivision	LU Type	Lot Size (acres)	Age (Decade)	Curb & Gutter	% Imper-vious	% Lawn	% Canopy
NSA-14	Farm Rd, Greenbird Ln	Single Fam Attached	<1/4	1980	Yes	70	30	0
NSA-15	Burton Manor Apartments	Multifamily	<1/4	1980	Yes	75	20	0
NSA-16	Cambridge Ave, Avon Dr	Single Fam Detached	1/4	1950	Yes	30	60	0
NSA-17	Robinson Ave, Church Ln	Single Fam Detached	1/4	1910	Yes	40	45	0
NSA-18	Holly Dr, Holly Cir	Single Fam Attached	1/4	1970	Yes	70	30	0
NSA-19	Defense Dr, Darlington Ave	Singe Fam Detached	<1/4	1940	Yes	40	50	0
NSA-20	The Highlands	Single Fam Attached	1/4	2000	Yes	60	30	0
NSA-21	The Residences at Highlands Commons	Multifamily	<1/4	1960	Yes	70	30	0
NSA-22	Spring Valley Estates	Mobile Homes	<1/4	1940-1950	Yes	35	65	0
NSA-23	Old Post Apartments	Multifamily	<1/4	1970	Yes	70	30	0
NSA-24	Center Deen Ave, N. Deen Ave	Single Fam Attached	<1/4	1960	Yes	40	60	0
NSA-25	S. Deen Ave, Allendale Ave	Single Fam Detached	1/4	1950	Yes	40	60	0
NSA-26	Argonne Dr, Rock Glenn Rd	Single Fam Detached	1/4	2000	Yes	70	25	0

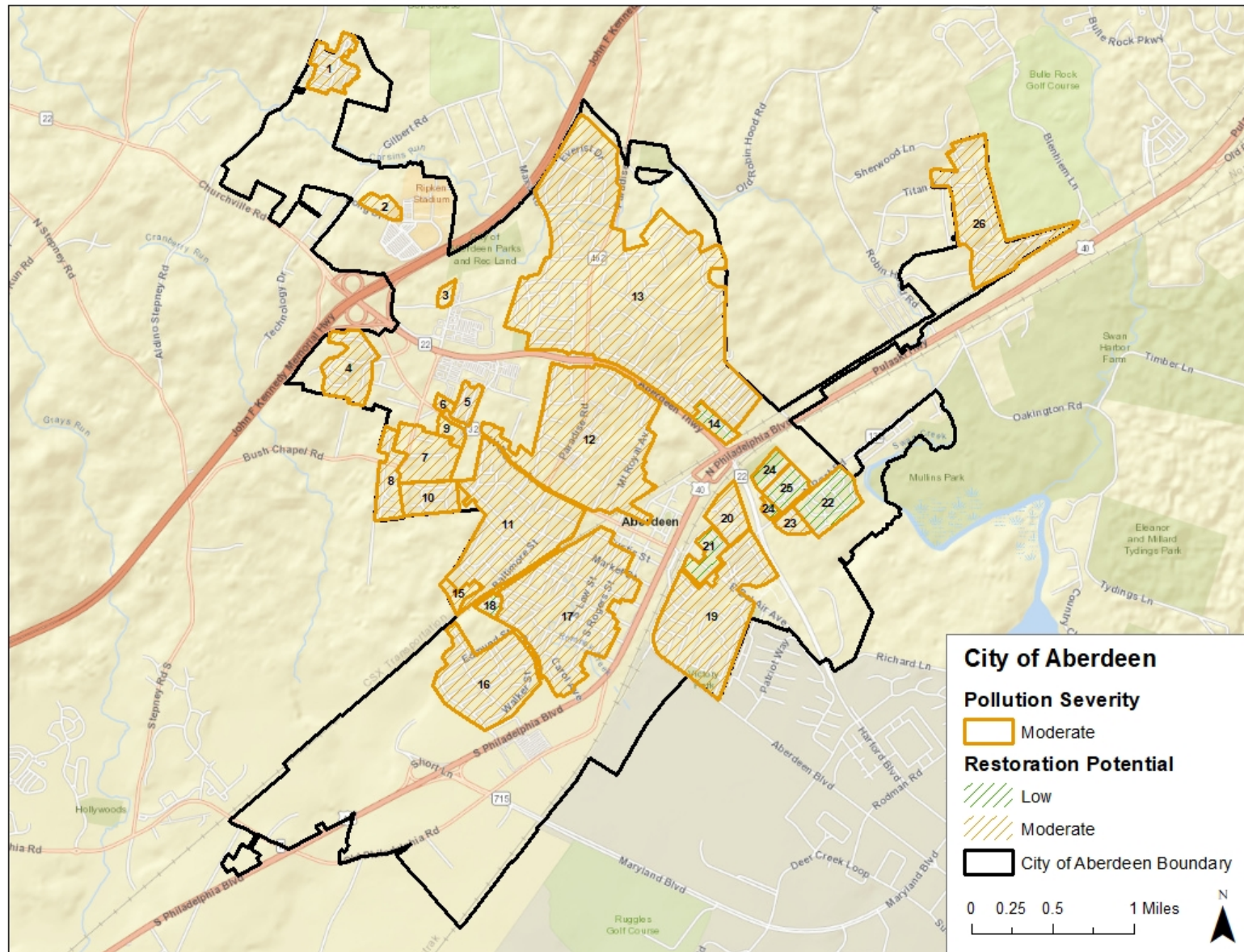


FIGURE 3: NEIGHBORHOOD SOURCE ASSESSMENT RESULTS

All 26 neighborhoods assessed received a 'moderate' pollution severity rating due to various examples of the potential for nutrient, bacteria, trash/litter and oil and grease pollution (**Table 2**). The restoration potential was rated as 'moderate' for all but six neighborhoods, which received a 'low' rating (**Table 2**).

The following sections describe the actions for the City of Aberdeen based on the NSA results. A description of the methods and criteria used to evaluate the potential for each action is provided. Most lots assessed had adequate space for rain barrels, rain gardens, and conservation landscaping. While overall lawn management was not high, there were opportunities for lawn management education. **Appendix C** includes a summary of NSA data collected and the actions needed for each individual neighborhood.

### Conservation Landscaping

Conservation landscaping, or BayScaping, refers to the use of plants native to the Chesapeake Bay watershed for landscaping. Plants used in conservation landscaping are native to the region and therefore require less irrigation, fertilizers, and pesticides to maintain as compared to non-native or exotic plants. This means less stormwater pollution and lawn maintenance requirements.

Conservation landscaping was identified for implementation in neighborhoods where the lots were at least ¼ acre in size and where there was sufficient open grass area available to implement conservation landscaping. conservation landscaping was recommended in many neighborhoods (**Table 2**).

### Stormwater Retrofits

Potential sites for stormwater management upgrades were identified in two neighborhoods (NSA-2 and 15). The most efficient method to augment stormwater treatment is to convert existing stormwater facilities to a design with greater pollutant removal capability, for example a dry detention pond to an extended detention pond or wetland. This is referred to as a stormwater pond conversion. Two ponds were identified as good candidates for further investigation by stormwater engineers to determine potential retrofit opportunities. Four neighborhoods (NSA-4, 6, 21, and 23) were identified as having ample space for new BMP opportunities.

### Rain Barrels

Installation of rain barrels encourage the community to actively participate in cleaning up and taking ownership of the health of their watershed. Rain barrels capture runoff from roof surfaces, allowing homeowners to use the water later, reducing the amount of runoff to local streams.

Rain barrels were recommended in neighborhoods that had downspouts directed to impervious surfaces and that had enough space for rain barrels. Rain barrels were recommended in many neighborhoods (**Table 2**).

### Rain Gardens

Installation of rain gardens encourages community involvement and awareness in watershed health. These gardens are depressions in the ground placed strategically to capture runoff from a downspout or other impervious surfaces and are planted with native plants, which soak up water while also providing food and habitat for wildlife.

Rain gardens were recommended in neighborhoods with enough available space down gradient of downspouts. Rain gardens were recommended in many neighborhoods (**Table 2**).

**TABLE 2: NEIGHBORHOOD POLLUTION SEVERITY AND RESTORATION POTENTIAL**

<b>NSA Site ID</b>	<b>Neighborhood / Subdivision</b>	<b>Pollution Severity</b>	<b>Pollution Sources</b>	<b>Restoration Potential</b>	<b>Potential Action</b>
NSA-1	Eagle's Rest	Moderate	Nutrients	Moderate	Conservation landscaping, several large existing wet ponds
NSA-2	The Yard's at Fieldside Village	Moderate	Nutrients, Bacteria	Moderate	Pond retrofit
NSA-3	Residences of Summerlin	Moderate	Nutrients, Bacteria	Moderate	None; Abundant BMPs present
NSA-4	The Osprey Apartments/ Cranberry Run Apartments	Moderate	Nutrients, Bacteria	Moderate	Several areas for potential BMPs
NSA-5	Pine Ridge Rental Homes	Moderate	Nutrients, Bacteria	Moderate	Rain barrels, rain gardens, conservation landscaping
NSA-6	Hillside Terrace Apartments	Moderate	Nutrients, Oil and Grease	Moderate	Several areas for potential BMPs
NSA-7	Bush Chapel Rd, Schofield Ave	Moderate	Nutrients, Oil and Grease, Trash/Litter, Bacteria	Moderate	Rain barrels, rain gardens, conservation landscaping
NSA-8	Chapel Glen	Moderate	Nutrients, Bacteria	Moderate	Rain barrels, rain gardens, conservation landscaping
NSA-9	Fairbrooke Apartments	Moderate	Nutrients, Bacteria	Moderate	None; SWM pond present
NSA-10	Woodland Green Way, Woodland Green Ct	Moderate	Nutrients, Bacteria	Moderate	None; Limited space, 1 BMP (filter) noted
NSA-11	Plater St, Baltimore St	Moderate	Nutrients, Bacteria	Moderate	Rain barrels, conservation landscaping
NSA-12	Baker St, Colaine Dr	Moderate	Nutrients, Bacteria	Moderate	Rain barrels, rain gardens, conservation landscaping
NSA-13	Hillcrest Dr, Beards Hill Rd	Moderate	Nutrients, Bacteria	Moderate	Rain barrels, rain gardens, conservation landscaping



NSA Site ID	Neighborhood / Subdivision	Pollution Severity	Pollution Sources	Restoration Potential	Potential Action
NSA-14	Farm Rd, Greenbird Ln	Moderate	Nutrients, Trash/Litter, Bacteria	Low	None; No room for BMPs
NSA-15	Burton Manor Apartments	Moderate	Nutrients	Moderate	Pond retrofit
NSA-16	Cambridge Ave, Avon Dr	Moderate	Nutrients	Moderate	Rain barrels, rain garden, conservation landscaping
NSA-17	Robinson Ave, Church Ln	Moderate	Nutrients	Moderate	Rain barrels, rain garden, conservation landscaping
NSA-18	Holly Dr, Holly Cir	Moderate	Nutrients, Trash/Litter	Low	None; No room for BMPs
NSA-19	Defense Dr, Darlington Ave	Moderate	Nutrients, Bacteria	Moderate	Rain barrels, rain garden, conservation landscaping
NSA-20	The Highlands	Moderate	Nutrients, Bacteria	Moderate	None; SWM pond present
NSA-21	The Highlands Commons	Moderate	Nutrients, Bacteria	Low	New BMP opportunities
NSA-22	Spring Valley Estates	Moderate	Nutrients, Bacteria	Low	None; No room for BMPs
NSA-23	Old Post Apartments	Moderate	Nutrients, Bacteria	Moderate	New BMP opportunities
NSA-24	Center Deen Ave, N. Deen Ave	Moderate	Nutrients, Bacteria	Low	None; No room for BMPs
NSA-25	S. Deen Ave, Allendale Ave	Moderate	Nutrients, Trash/Litter, Bacteria	Low	None; No room for BMPs
NSA-26	Argonne Dr, Rock Glenn Rd	Moderate	Nutrients, Bacteria	Moderate	Rain barrels, rain garden, conservation landscaping

### 3.1.2 HOTSPOT SITE INVESTIGATIONS

A total of 20 sites were investigated in the City of Aberdeen area (**Figure 4**). The location, general description, and common operations (i.e., vehicle operations, outdoor materials, waste management, physical plant, turf/landscaping) of each site investigated are presented in **Table 3**. A complete record of HSI data is included in **Appendix B**.

Of the 20 sites investigated, only two (HSI-7, HSI-15) were designated ‘confirmed’ as having high potential for discharging pollutants into stormwater runoff (**Table 3**). These sites had car washing activities observed or significant signs of poor washing practices. A total of 15 locations were designated as ‘potential’ hotspots (where there were activities that had the potential to be polluting but where no active pollution was found), while the remaining three sites were considered ‘low’ potential. Most sites had very limited room for new stormwater management facilities; five sites were noted as good opportunities for stormwater management retrofits (HSI-1, 6, 7, 16, 20). Specific recommendations for each site can be found in **Table 3**.

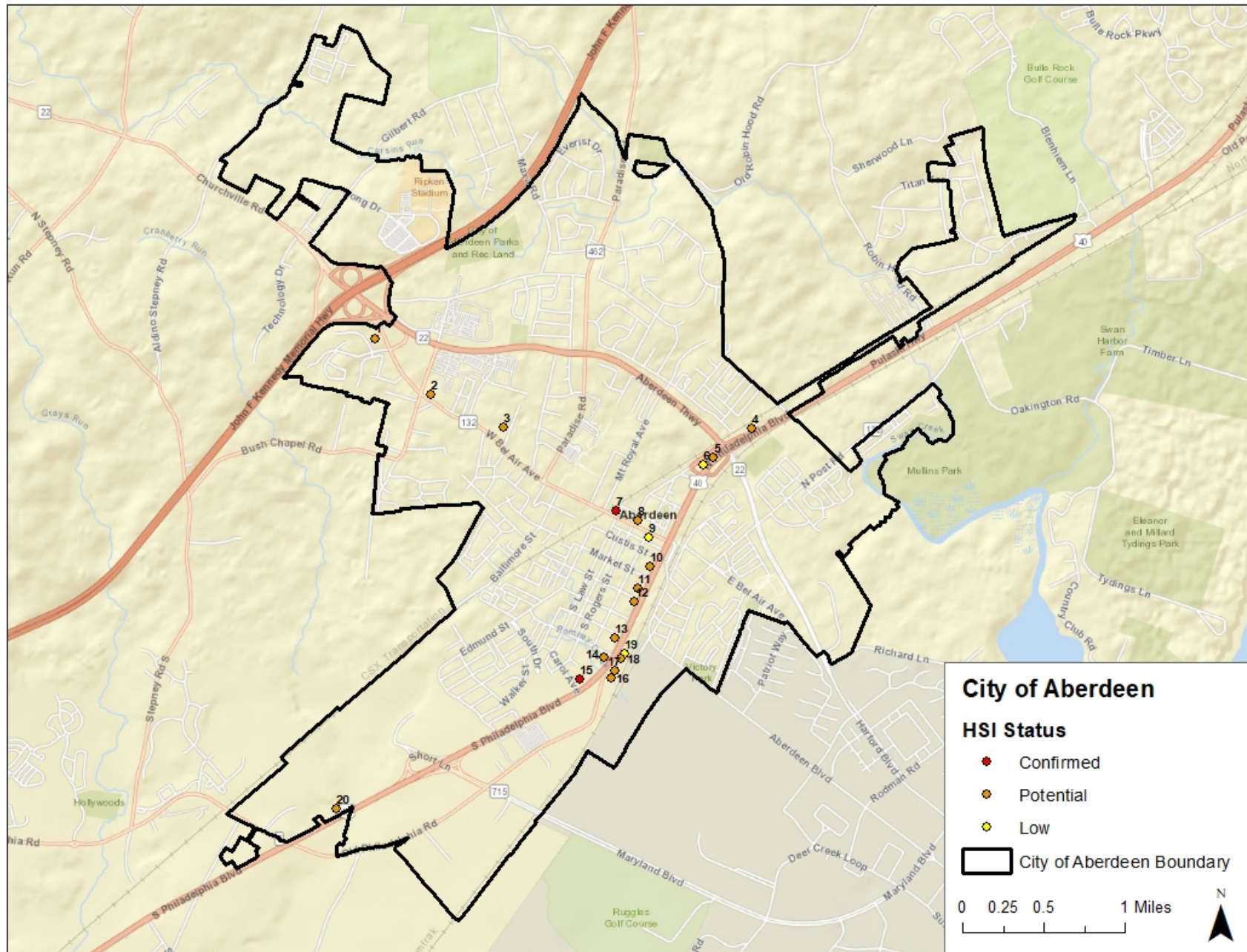


FIGURE 4: HOT SPOT INVESTIGATION RESULTS

TABLE 3: HOT SPOT INVESTIGATION LOCATIONS AND OPERATIONS

HSI Site ID	Location	Description	Vehicle Ops	Outdoor Materials	Waste Mgmt.	Physical Plant	Landscaping	HSI Status	Potential Action/Notes
HSI-1	Travelodge Hotel	hotel	No	No	Yes	Yes	Yes	Potential	Potential area for SWM pond. Put lid on dumpster.
HSI-2	Aberdeen Muffler Works	Auto shop	Yes	No	Yes	Yes	Yes	Potential	
HSI-3	One Hour Heating & Air Conditioning	HVAAC	Yes	No	Yes	Yes	No	Potential	
HSI-4	Core + Man	Plumbing supply store	No	Yes	Yes	Yes	Yes	Potential	Put lid on dumpster.
HSI-5	North End Import Service	Auto shop	Yes	No	Yes	Yes	Yes	Potential	Improve vehicle storage procedures.
HSI-6	Chesapeake Bay Dental, S.A. Bham, M.D.	Doctors office	No	No	No	Yes	Yes	Not a Hotspot	Possible rain gardens to treat roof.
HSI-7	Unique Carwash/ Scott's Transportation	Carwash	Yes	No	Yes	Yes	No	Confirmed	Carwash runoff observed. Potential area for SWM pond. Improve car wash discharge measures.
HSI-8	Mr. Tire	Auto shop	Yes	No	Yes	Yes	Yes	Potential	Cleaner car practices. Move dumpsters from storm drain inlet.
HSI-9	Scoop's	Restaurant	No	No	Yes	Yes	No	Not a Hotspot	
HSI-10	Szechuan Inn	Restaurant	No	No	Yes	Yes	No	Potential	Repair parking lot damage.

HSI Site ID	Location	Description	Vehicle Ops	Outdoor Materials	Waste Mgmt.	Physical Plant	Landscaping	HSI Status	Potential Action/Notes
HSI-11	Pat's Pizza	Restaurant	No	No	Yes	Yes	Yes	Potential	
HSI-12	Domino's	Restaurant	No	No	Yes	Yes	No	Potential	
HSI-13	Astro Car Wash	Carwash	Yes	No	Yes	Yes	Yes	Potential	
HSI-14	7-Eleven	Gas station	Yes	No	Yes	Yes	Yes	Potential	
HSI-15	MAACO Body Shop	Auto shop	Yes	No	Yes	Yes	Yes	Confirmed	Improve carwash discharge measures. Put lid on dumpsters.
HSI-16	Thompson's Auto Repair Center/ Budget Rental	Auto shop/ rental	Yes	No	Yes	Yes	No	Potential	Potential area for BMP. Improve carwash discharge measures.
HSI-17	Sunoco	Gas station	Yes	No	Yes	Yes	Yes	Potential	
HSI-18	Aberdeen Used Tires	Auto shop	Yes	No	Yes	Yes	Yes	Potential	
HSI-19	Aberdeen Diner	Restaurant	No	No	Yes	Yes	No	Not a Hotspot	
HSI-20	Caliber Collision	Auto shop	Yes	No	Yes	Yes	Yes	Potential	Potential area for BMP.

### 3.2 STREAM CORRIDOR ASSESSMENT

Field crews walked approximately 31.3 miles of stream channels starting on February 10, 2020 and ending on March 9, 2020. **Figure 5** shows the stream reaches walked by field crews and the location of the representative sites for each reach. **Figure 7** presents the locations of the SCA data points and severity scores for stream erosion and pipe outfall points.

The total number of points identified and ranked by severity can be found in **Table 1**. The majority of points were categorized as ‘moderate’ and ‘low’ severity. Only two points received a rating of ‘very severe’. A more detailed discussion of each data point type follows. A complete dataset is included as **Appendix A**.

Representative sites were selected at locations representative of each perennial, or significant intermittent (larger intermittent streams with significant flow) stream segment. The general physical habitat condition was assessed at the representative sites using a modified version of the EPA’s *Rapid Bioassessment Protocols* (Barbour et al., 1999). The assessment included qualitative ratings for ten habitat parameters as well as information on wetted width, pool, run, and riffle depths, and channel substrate. Erosion sites, pipe outfalls, buffer breaks, fish barrier, and unusual condition points were collected.

**TABLE 4: STREAM CORRIDOR ASSESSMENT DATA POINTS BY SEVERITY**

Potential Problems	Total	Very Severe	Severe	Moderate	Low	Minor
Erosion (13.5 miles)	87	0	24	36	22	5
Pipe Outfall	34	0	2	5	16	11
Fish Barrier	4	1	1	1	1	0
Trash	2	0	1	0	1	0
Channel Alteration	21	1	4	6	6	4
In-Stream Construction	1	0	0	1	0	0
Exposed Pipe	3	0	0	0	1	2
Unusual Conditions	8	0	0	2	4	2
<b>Total</b>	<b>160</b>	2	32	51	51	24
<b>Representative Sites</b>	<b>47</b>					
<b>Potential BMP Sites</b>	<b>29</b>					



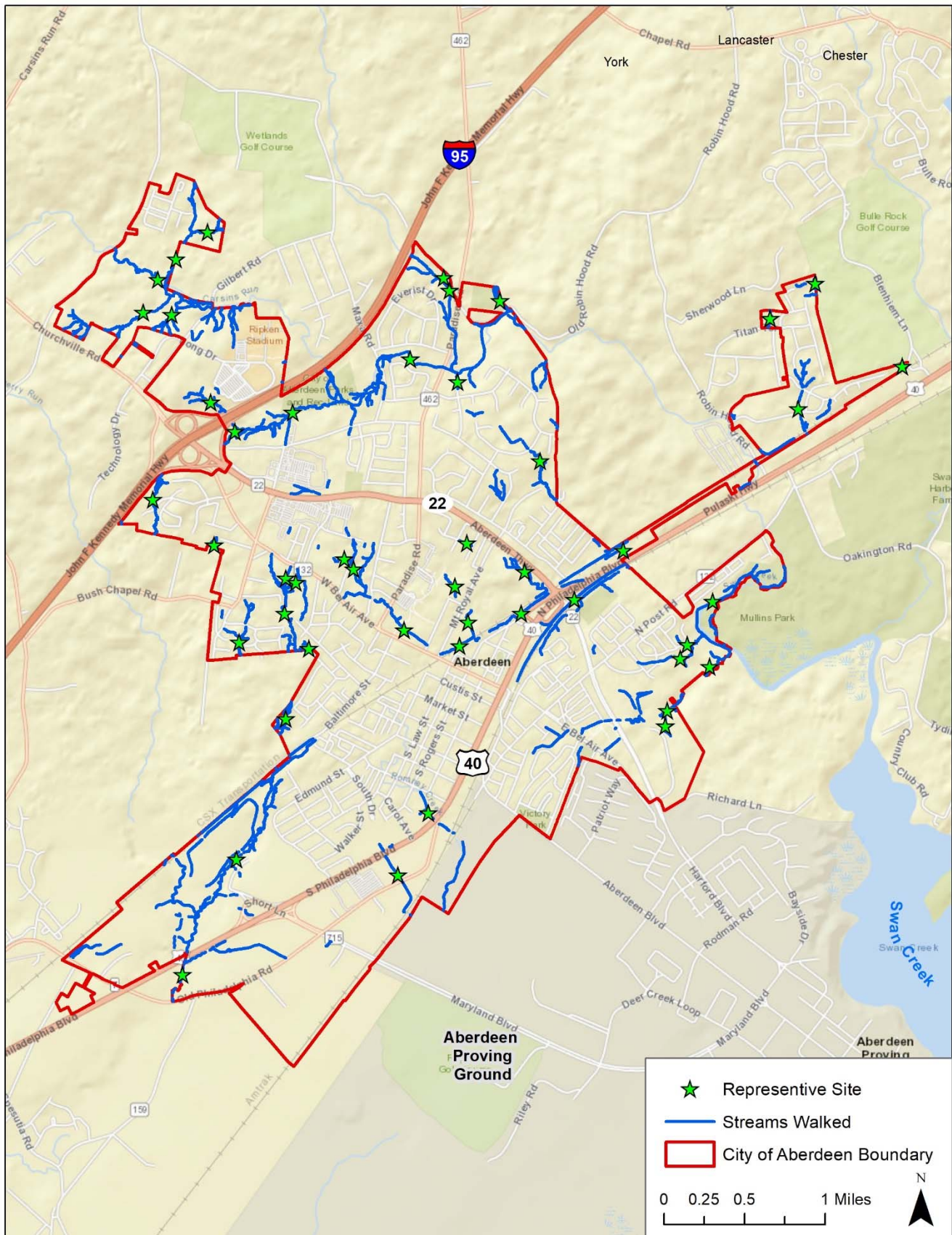


FIGURE 5: CITY OF ABERDEEN STREAM CORRIDOR ASSESSMENT REACHES WALKED AND REPRESENTATIVE SITES

### Erosion Sites

Eighty-seven (87) erosion sites totaling 13.5 miles were identified (right and left bank impacts counted separately). Out of the 87 erosion sites, the majority were rated 'moderate' severity, followed by 'severe' and 'low' severity. No sites were rated 'very severe'. The stream erosion process was identified as widening for thirty-four sites, headcutting for ten sites, and downcutting for thirty-six sites, both downcutting and widening for two sites, and both downcutting and headcutting for five sites. While collecting stream erosion data, field crews also attempted to determine the leading possible cause of erosion at each site. These potential causes included: upstream land use changes, matching mainstem channel grade, runoff from infrastructure, and erosion following concrete channelization. The most commonly described possible causes for erosion was landuse change upstream (85%), followed by runoff from infrastructure (10%). Only two sites were identified as a possible threat to infrastructure: site R073\_ES001 documented a parking lot breaking up into the stream channel and R102\_ES001 documented a small area of fence threatened by the eroding bank. Location and severity of erosion sites can be found in **Figure 7**.

### Pipe Outfalls

Thirty-four pipe (34) outfall points were located and assessed. The majority of the pipes were identified as stormwater outfalls. The field crew was unable to identify the source of two pipes (R155\_PO001 and R165\_PO001). Majority of the pipes had discharge or trickle flow, however, all but one of the discharges noted were clear and odorless. One pipe outfall, R080\_PO001, was documenting the discharge point for the wastewater treatment plant on Michaels Lane, and was noted to have discharge with a detergent odor. Soapy suds and heavy algae in the receiving stream were also observed at this pipe outfall point. Majority (79%) of the pipe outfalls were rated as either 'minor' or 'low' severity. Two pipe outfalls were rated as 'severe,' R054\_PO001 due to the severe channel erosion from the wet pond outfall and R080\_PO001 due to the wastewater treatment plant discharge. The location and severity of these sites are shown in **Figure 7**.

### Fish Barriers

Four (4) fish barriers were located during the survey. Three sites (R057\_FB001, R111\_FB001, and R156\_FB001) were blocking fish movement as a result of pipe crossings. R057\_FB001 received a severity score of 'very severe' due to the height of the drop, measuring approximately 15 feet. R111\_FB001 received a severity score of 'low' due the 5 inch drop between the culvert bottom surface and the stream water level surface. Lastly, R156\_FB001 received a severity score of 'moderate' due to the 11 inch drop between the culvert bottom surface and the stream water level surface.

One site (R184\_FB001) was documenting a concrete channel that was approximately 4 feet above the stream water level surface. This site received a severity score of 'severe.' The location of the fish barriers are displayed in **Figure 7**.

### Trash Dumping

In general, trash was found to be widespread throughout the stream reaches walked. Since this feature was so ubiquitous in the study area, only those trash dumping sites that were considered severe and isolated were recorded.

Two trash dumping sites were documented along the stream reaches walked. Site R139\_TD001 received a severity score of 'low' due to the trash dumping of cans, aluminum, and bottles of approximately one truckload worth. This site is located on public property and is a potential volunteer clean-up opportunity. Site R214\_TD001 received a severity score of 'severe' due to the dumping of old appliances of approximately three truckloads worth. This site is located on private property and contains large heavy trash, therefore may not be considered a volunteer opportunity. Trash dumping locations can be found in **Figure 7**.

#### Channel Alteration

Twenty-one (21) channel alteration impacts were identified during the survey. Ten sites were documenting concrete channelization, another ten sites were documenting rip rap and/or gabion basket stabilization, and one site was documenting an old concrete wall on one side of the stream. Severity scores of channel alteration sites ranged from 'minor' to 'very severe'. R057\_CA001 documented an old road crossing with concrete channelization and culverts and was the only site to receive a severity score of 'very severe' due to the extent of the channelization and the severe fish barrier caused by the old culverts. In general, sites documenting concrete channelization were rated to be more severe than those documenting riparian and gabion basket stabilization. The locations of channel alteration impacts can be found in **Figure 7**.

#### In-Stream Construction

One (1) in-stream construction site was identified, site R207\_IC001. Construction of a new residential development was occurring, and a new road crossing was installed. This site had adequate erosion and sediment control measures in place and received a severity score of 'moderate.' The extent of the in-stream construction was approximately 75 feet. The location of the in-stream construction site can be found in **Figure 7**.

#### Exposed Pipes

Three (3) exposed pipes were identified in the assessment. Two sites (R102\_EP001 and R106\_EP001) were documenting fiber optic cables that were located above the stream channel and both sites received severity scores of 'minor.' One site (R071\_EP001) documents two sewage pipes located above the stream, one 18 inch and the other 24 inch, receiving a severity score of 'low.' Exposed pipe locations can be found in **Figure 7**.

#### Unusual Conditions

Eight (8) unusual condition points were identified along the assessed stream reaches. The unusual condition points range from a severity rating of 'moderate' to 'minor.' Site R146\_UC001 was documenting a large metal beam across the stream and therefore directing flow to the right bank causing bank erosion and scour. This site received a severity score of 'moderate.'

One site, R041\_UC001 receiving a severity score of 'moderate', is documenting a wetland channel headcutting approximately 2 feet to meet the mainstem after a recent rain storm. Another site, R184\_UC001 receives a severity score of 'minor' due to the stream channel being piped underground for about 10 feet due to an old pond or road bed obstructing the channel. Site R175\_UC001 was documenting



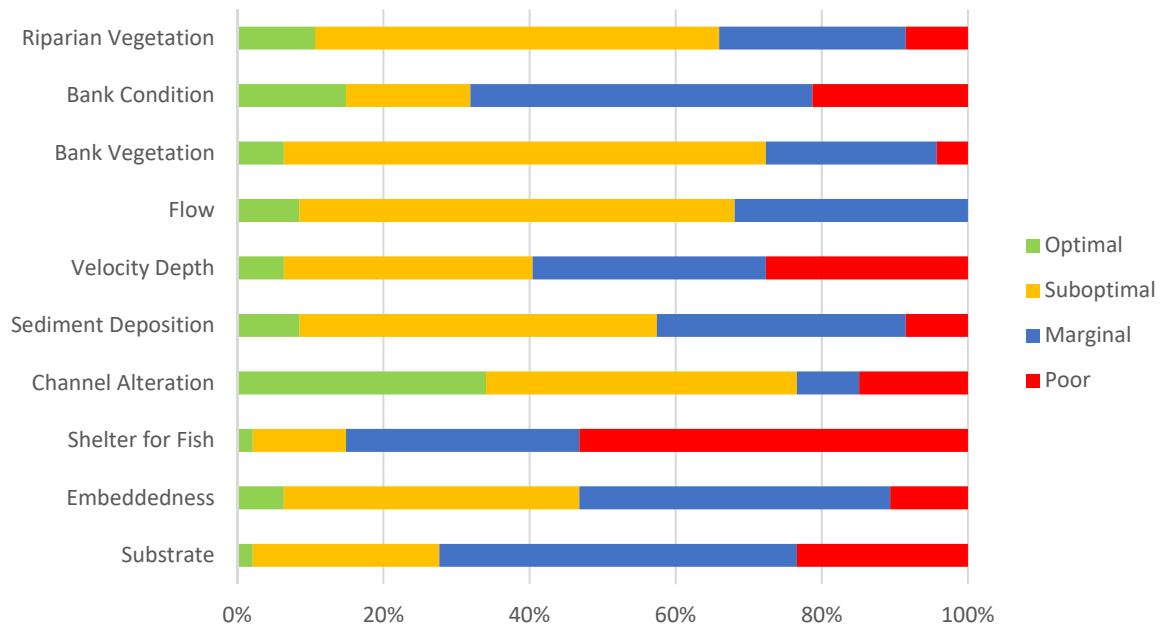
an old house foundation and chimney located at the headwaters of a wetland channel. The remaining unusual condition points were documenting sections of concrete pipes in the stream channel. Locations of unusual condition sites can be found in **Figure 7**.

#### Representative Points

Representative points were taken at 47 locations (**Figure 5**). **Figure 6**, below, presents the proportion of reaches in each assessment category for each habitat parameter, giving insight into the types of stream impacts creating the most degradation. In general, the modified qualitative RBP assessment at these sites revealed stream channels dominated by gravel substrates. Overall, channel alteration scored high, with over 75% of the sites scoring in the 'optimal' and 'suboptimal' range and only 15% scoring in the 'poor' range. Bank condition scores mostly fell within the 'marginal' range, but bank vegetation was good, with most sites falling in the 'suboptimal' range. Channel flow status ranged from 'marginal' to 'optimal', with most sites falling within the 'suboptimal' range. More than half of the sites were within the 'poor' or 'marginal' categories for velocity/depth diversity, which is generally to be expected when majority of the streams assessed are smaller headwater systems. Sediment deposition scores range from 'poor' to 'optimal,' with 43% of sites falling within the 'poor' and 'marginal' categories. Embeddedness scores ranged widely, with majority of the scores in the 'marginal' and 'suboptimal' categories.

Shelter for fish and benthic macroinvertebrate substrate scores were similar throughout the sites, with majority of the sites scoring in the 'poor' or 'marginal' categories.

Stream channel erosion is a major factor leading to impaired habitat conditions. Erosion sites were described as channel widening and downcutting processes. As the stream channels widen and down cut, the ability to effectively transport sediments (eroded bank material and from runoff over land) is reduced, leading to reduced scores for several habitat parameters including flow, velocity, embeddedness and macroinvertebrate habitat.



**FIGURE 6: PROPORTION OF REACHES PER ASSESSMENT CATEGORY**

#### Potential BMP Sites

Twenty-nine (29) potential improvement site points were created during the SCA fieldwork. Potential BMP types include rain garden, tree planting, wetland creation, stream restoration, wet pond retrofit, impervious surface removal, and SPSC outfall stabilization. Potential BMP locations are presented in **Figure 7**.

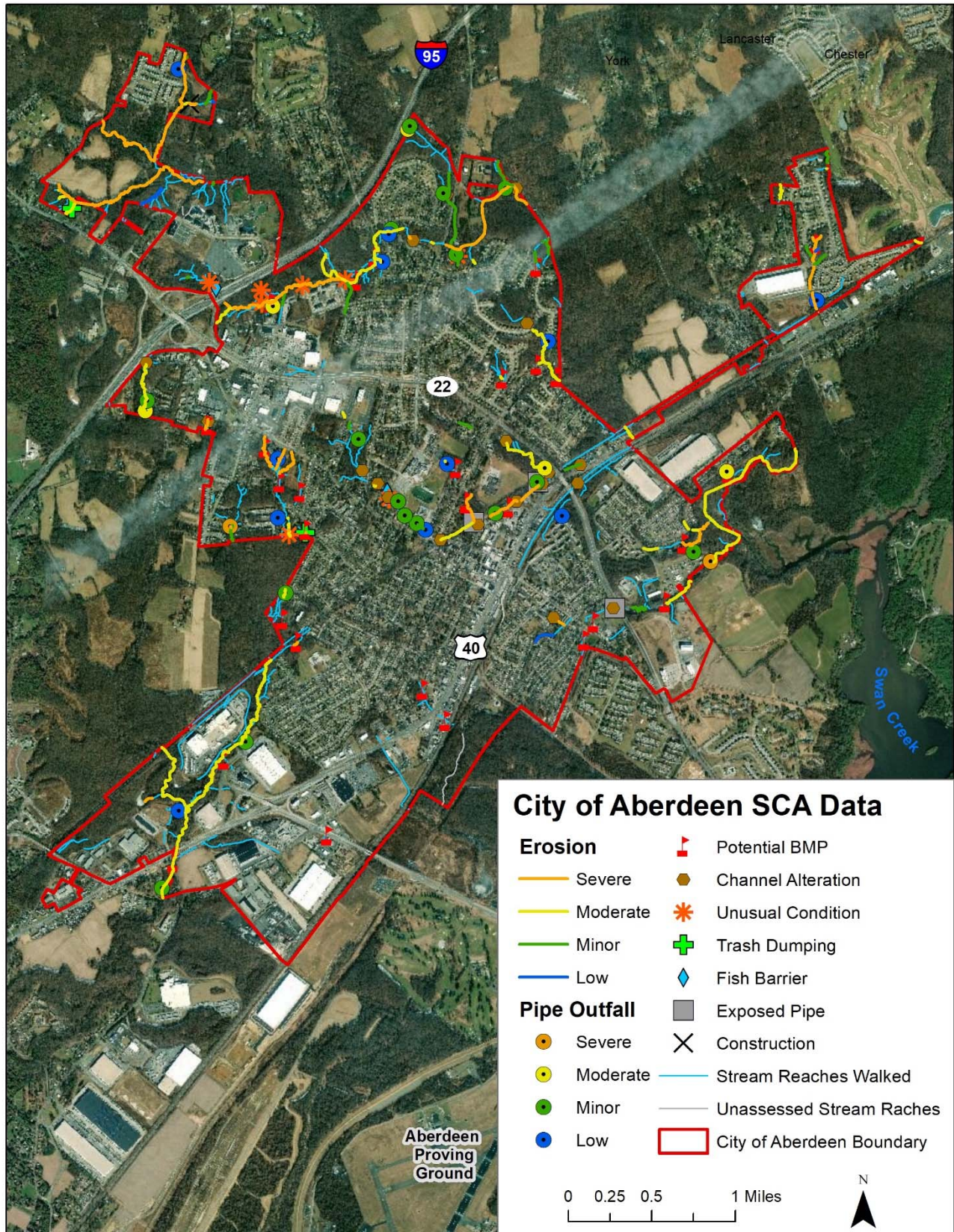


FIGURE 7: STREAM CORRIDOR SURVEY DATA MAP

## 4 POTENTIAL WATER QUALITY IMPROVEMENT PROJECTS

Results of the desktop and field watershed assessments were compiled and analyzed to determine specific areas of impairment most in need of restoration. Restoration measures were then developed according to the type and source of impact. The following section presents the methods and results for each restoration measure type:

- Stream restoration
- Reforestation

Mapping of the site-specific structural practices are included in **Figure 8**. Tables presenting cost, load reduction, and impervious credit associated with each of the proposed projects are included in each section below.



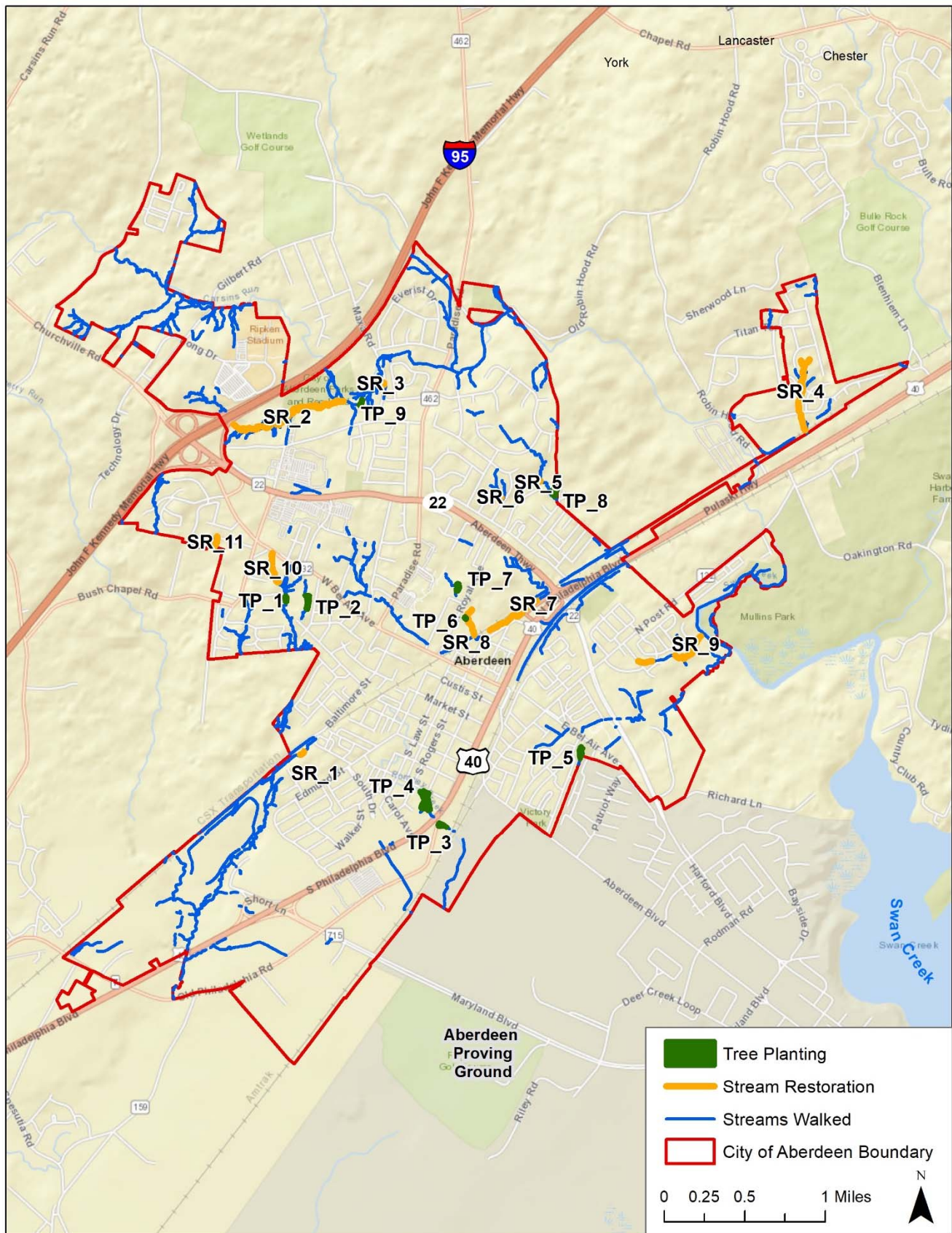


FIGURE 8. LOCATION OF POTENTIAL WATER QUALITY IMPROVEMENT PROJECTS

## 4.1 STREAM RESTORATION

Stream restoration opportunities were field identified during the SCA assessment. The current condition of streams was assessed, and locations of stream erosion were identified and mapped using a global positioning system (GPS). The assessment rated each segment of stream erosion on a 1 to 5 scale according to its severity, correctability, and accessibility; where a score of 1 is the most severe, but also the most correctible and the most accessible. These scores were used to identify high priority stream reaches for stream restoration and were generally sites with a severity score of 1 or 2, and a correctability/access score of 1-4.

Eleven (11) stream restoration projects were identified with a total length of approximately 11,545 linear feet. **Table 5** provides a summary of current conditions and proposed actions of each site.

*Costs of Stormwater Management Practices In Maryland Counties* (King and Hagan, 2011) was used to calculate cost estimates for stream restoration projects. A unit cost estimate of \$645/ft was used to estimate the initial cost of the stream restoration projects and a cost factor per impervious acre treated was used to derive the total cost over 20 years. The Harford County Cost Adjustment Index of 0.991 was applied, with 17% inflation over 9 years (approximately 1.89% per year from 2011 to 2020). Similar adjustment calculations were used to estimate the cost over 20 years and these projections are current-dollar estimates which do not account for inflation.

Impervious credit and load reductions were calculated for total nitrogen (TN), total phosphorus (TP), and total suspended sediment (TSS) for each restoration site with equivalent impervious acre factors and estimated removal efficiencies from *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated* (MDE, 2019) which are shown in **Table 6** and **Table 7**. Impervious acre restoration credit estimates were based on the published planning rate of 0.02 impervious credit per linear foot of stream restoration. As stream restoration projects are selected and investigated further, individual site-specific pollutant load reduction and impervious acre credit will be calculated based on the design and stream size using the five stream restoration crediting protocols and may be considerably higher than the planning estimates.

The cost per impervious credit for stream restoration practices is \$47,808 (**Table 7**).

TABLE 5: STREAM RESTORATION PROJECT DESCRIPTIONS

Restoration Site ID	SCA Reach	Length (ft)	Current Condition	Proposed Actions
SR_1	22	130	North of Hillsdale Elementary School on Board of Education property. Wetland channel headcuts 5' down to channel with eroded bed and banks. Severe downcutting for 130 linear feet.	Stream bank and bed stabilization to repair headcut, bed and bank erosion.
SR_2	173	3,856	Located within forested area between I-95 and Beards Hill Rd. A large portion of stream reach is on property owned by City of Aberdeen. Stream channel is incised and widened with actively eroding bed and banks.	Stream bank and bed stabilization to repair erosion.
SR_3	165	230	Located west of Maxa Rd. A small gully channel previously ineffectively stabilized with curlex. Incised and actively eroding.	Stream bank and bed stabilization to repair erosion.
SR_4	137, 141	2025	Located north of Pulaski Hwy in Glenn Heights neighborhood. Reach begins at several 4' headcuts, gully channel with severe bed and bank erosion. Stream channel is deeply incised and actively eroding. Part of reach is located on property owned by City of Aberdeen.	Stream bank and bed stabilization to repair bank erosion and provide stream access to floodplain. Stream restoration will stabilize headcut.
SR_5	126	103	Short gully channel with 3' banks, located immediately adjacent to residential property in Burns Corner neighborhood. No forest buffer on right bank.	Stream bank and bed stabilization to repair erosion.
SR_6	123	80	Short incised reach with 4' banks, located adjacent to Kendrick Drive in the Burns Corner neighborhood.	Stream bank and bed stabilization to repair erosion.
SR_7	105	1485	Located between N Rogers St and railroad tracks. Severely eroded and incised channel with 6-10' high banks. Broken up sections of concrete channelization present in channel.	Stream bank and bed stabilization to repair erosion. Project could consist of removal of concrete channelization in stream channel.
SR_8	107	770	Located west of Aberdeen Middle School. Incised channel with 5' high banks and active erosion.	Stream bank and bed stabilization to repair erosion.
SR_9	88	1,585	Tributary to Swan Creek, located just north of Aberdeen Wastewater Treatment Plant. Severely eroded vertical 5' banks.	Stream bank and bed stabilization to repair erosion.
SR_10	43	996	Reach originates at outfall south of W Bel Air Ave near Beards Hill Rd intersection. Severely incised 5' banks.	Stream bank and bed stabilization to repair erosion

Restoration Site ID	SCA Reach	Length (ft)	Current Condition	Proposed Actions
SR_11	57	285	Reach originates at outfall south of Aberdeen Plaza off W Bel Air Ave. There is an old road bed, pipe culvert, and concrete channelization at the upstream end, followed by a 10' drop, and severe bank erosion downstream. Channel bed has concrete rubble stabilization.	Stream bank and bed stabilization to repair erosion. Project could possibly involve removing old road bed and associated culverts and installing a step pool conveyance system.

TABLE 6: STREAM RESTORATION REMOVAL EFFICIENCY AND PLANNING RATE IMPERVIOUS ACRE EQUIVALENT

Pounds Reduced per Linear Foot			Impervious Acre Equivalent per Linear Foot
TN	TP	TSS	
0.075	0.068	248	0.02

Source: MDE, 2019

TABLE 7: STREAM RESTORATION COST, IMPERVIOUS CREDIT, AND LOAD REDUCTION

Site ID	SCA Reach	Erosion length (ft)	Total Initial Cost	Total Cost Over 20 Years	Impervious Credit (Acres)*	Cost Per Impervious Credit	Load Reduction (lbs/yr)		
							TN	TP	TSS
SR_1	R022	130	\$97,393	\$124,301	2.6	\$47,808	9.8	8.8	32,240.0
SR_2	R173	3,856	\$2,888,823	\$3,686,945	77.12	\$47,808	289.2	262.2	956,288.0
SR_3	R165	230	\$172,311	\$219,916	4.6	\$47,808	17.3	15.6	57,040.0
SR_4	R137, R141	2025	\$1,517,082	\$1,936,219	40.5	\$47,808	151.9	137.7	502,200.0
SR_5	R126	103	\$77,165	\$98,484	2.06	\$47,808	7.7	7.0	25,544.0
SR_6	R123	80	\$59,935	\$76,492	1.6	\$47,808	6.0	5.4	19,840.0
SR_7	R105	1485	\$1,112,527	\$1,419,894	29.7	\$47,808	111.4	101.0	368,280.0
SR_8	R107	770	\$576,865	\$736,241	15.4	\$47,808	57.8	52.4	190,960.0
SR_9	R088	1,585	\$1,187,444	\$1,515,510	31.7	\$47,808	118.9	107.8	393,080.0
SR_10	R043	996	\$746,179	\$952,333	19.92	\$47,808	74.7	67.7	247,008.0
SR_11	R057	285	\$213,516	\$272,504	5.7	\$47,808	21.4	19.4	70,680.0
<b>Total</b>		<b>11,545</b>	<b>\$8,649,240</b>	<b>\$11,038,839</b>	<b>230.9</b>	<b>\$47,808</b>	<b>865.9</b>	<b>785.1</b>	<b>2,863,160.0</b>

\*Impervious credit calculated with planning rate. Actual site-specific impervious credit may be higher.



## 4.2 REFORESTATION

A search for potential reforestation sites was conducted during the SCA assessment performed in February and March 2020. Nine (9) reforestation sites were identified, totaling 3.92 acres. These sites mostly consist of open areas available for planting adjacent to stream reaches without an adequate 50-100 foot riparian buffer. Three projects, TP\_3, TP\_4, and TP\_8, have planting areas outside of the 100-foot riparian buffer as well. These forest planting areas were accounted separately from the riparian forest buffer areas. Impervious credit and load reduction efficiencies for each planting type are presented in **Table 8**.

*Costs of Stormwater Management Practices In Maryland Counties* (King and Hagan, 2011) was used to calculate cost estimates for reforestation projects. A total initial cost estimate of \$11,225/acre and a total cost over 20 years of \$19,458 was used. The Harford County Cost Adjustment Index of 0.991 was applied, with 17% inflation over 9 years (approximately 1.89% per year from 2011 to 2020). Similar adjustment calculations were used to estimate the cost over 20 years and these projections are current-dollar estimates which do not account for inflation.

It should be noted that economy of scale is not built in to this cost estimate. While there are very few large reforestation projects identified, larger projects will likely cost less than estimated here due to economy of scale. Impervious credit and load reductions for total nitrogen, total phosphorus, and total suspended sediment were calculated for each site with estimated removal efficiencies from *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated* (Table 8; MDE, 2019). These efficiencies assume a survival rate of 100 trees/acre or greater with at least 50% of trees having a two inch diameter or greater (4.5 feet above ground; MDE, 2019). The average cost per impervious credit for the reforestation projects is \$16,179 (**Table 9**).

The City of Aberdeen's NPDES MS4 permit includes a requirement for Public Involvement and Participation (Section IV.B; MDE, 2018). These tree planting sites provide an excellent opportunity to involve the public and significantly reduce the labor cost of the plantings.

**TABLE 8: RIPARIAN FOREST BUFFER EFFICIENCY AND IMPERVIOUS ACRE EQUIVALENT**

Planting Type	Total Load Reduced (lbs/acre/yr)			Impervious Acre Equivalent
	TN	TP	TSS	
Riparian Forest Buffer Planting	14.30	2.53	2,349	1.41
Forest Planting	11.08	1.80	696	1.00

Source: MDE, 2019

TABLE 9: REFORESTATION SITE COST, IMPERVIOUS CREDIT, AND LOAD REDUCTION

Site ID	SCA Reach ID	Property Type	Area (acres)	Total Initial Cost	Total Cost Over 20 Years	Imper-vous Credit	Cost Per Impervious Credit	Load Reduction (lbs/year)		
								TN	TP	TSS
TP_1	R043	Private	0.17	\$2,216	\$3,842	0.24	\$16,029	2.43	0.43	399.33
TP_2	R053	Private	0.49	\$6,389	\$11,075	0.69	\$16,030	28.73	5.04	4,416.12
TP_3	R065	Private	0.25	\$3,260	\$5,018	0.35	\$14,234	3.58	0.63	587.25
TP_4	R065	Private and Public	1.78	\$23,207	\$40,230	2.46	\$16,350	25.45	4.50	4,181.22
TP_5	R075	Public and Private	0.38	\$4,954	\$8,588	0.54	\$16,029	5.43	0.96	892.62
TP_6	R107	Private	0.07	\$913	\$1,582	0.10	\$16,031	1.00	0.18	164.43
TP_7	R108	Private	0.31	\$4,014	\$7,007	0.44	\$16,030	4.43	0.78	728.19
TP_8	R125	Private	0.33	\$4,303	\$7,458	0.42	\$17,578	4.72	0.83	775.17
TP_9	R146	Private	0.14	\$1,825	\$3,165	0.20	\$16,031	2.00	0.35	328.86
<b>Total</b>			<b>3.92</b>	<b>\$51,081</b>	<b>\$87,965</b>	<b>5.44</b>	<b>\$16,179</b>	<b>77.78</b>	<b>13.72</b>	<b>12,473.19</b>

### 4.3 HOMEOWNER PRACTICES

During the Neighborhood Source Assessment, each neighborhood within the City of Aberdeen was assessed to determine the potential pollutant sources of each neighborhood and to recommend residential-scale BMPs to address these pollutants. While some neighborhoods did not have space for BMPs (primarily apartment complexes and townhomes), several BMP types were determined to be feasible in the neighborhoods of Aberdeen, and include rain barrels, rain gardens, and conservation landscaping practices. The following sections describe these practices and estimate the potential impervious credits and cost of each. To help offset the expense to the homeowner's, the City of Aberdeen may develop a cost-share program in which the City provides funds to pay for half of the cost of the homeowner BMP.

#### Rain Barrels

Rain barrels were recommended in neighborhoods that had downspouts directed to impervious surfaces and that had enough space for the barrel to be installed at one or more of the house's downspouts. A total of ten neighborhoods were found to be good candidates for rain barrel installations. **Table 10** presents the impervious credit and associated cost by NSA neighborhood. Impervious credit is calculated using rainwater harvesting runoff reduction rates (MDE, 2019).

For planning purposes, it was assumed that 30% of the homeowners in each neighborhood would participate and that two 55-gallon rain barrels would be installed at each participating house. The cost per impervious credit for rain barrels is \$27,797, assuming a cost share program is implemented to help homeowners purchase the barrels, which are assumed to be \$85 each. This estimation only accounts for the cost of the rain barrel, and does not include installation and maintenance (assumed that the homeowner installs and maintains the barrel), or implementation and tracking of the homeowner practices program.

TABLE 10. RAIN BARREL IMPERVIOUS CREDIT AND COST BY NEIGHBORHOOD

NSA Neighbor- hood ID	Number of Houses	Average Roof Size (sq ft)	Total Roof Area (sq ft)*	Number of Rain Barrels**	Impervious Credit (ac)	Cost to Neighborhood	Cost to City
5	57	871.2	14,897.5	34	0.05	\$2,907	\$1,454
7	37	1,306.8	14,505.5	22	0.03	\$1,887	\$944
8	90	1,306.8	35,283.6	54	0.08	\$4,590	\$2,295
11	300	871.2	78,408.0	180	0.28	\$15,300	\$7,650
12	200	1,742.4	104,544.0	120	0.18	\$10,200	\$5,100
13	900	1,306.8	352,836.0	540	0.83	\$45,900	\$22,950
16	400	1,306.8	156,816.0	240	0.37	\$20,400	\$10,200
17	600	1,306.8	235,224.0	360	0.55	\$30,600	\$15,300
19	500	653.4	98,010.0	300	0.46	\$25,500	\$12,750
26	200	2,613.6	156,816.0	120	0.18	\$10,200	\$5,100
<b>Total</b>				<b>1,970</b>	<b>3.01</b>	<b>\$167,484</b>	<b>\$83,742</b>

\*Assumed 30% homeowner participation in each neighborhood.

\*\*Assumed 2 rain barrels per house.

### Rain Gardens

Rain gardens were recommended in neighborhoods that had adequate space down gradient from the house's downspouts for installation of a rain garden. A total of ten neighborhoods were found to be good candidates for rain garden installations. **Table 11** presents the impervious credit and associated cost by NSA neighborhood. Impervious credit is calculated using rain garden runoff reduction rates (MDE, 2019).

For planning purposes, it was assumed that 10% of the homeowners in each neighborhood would participate. The cost per impervious credit for rain gardens is \$68,063, assuming a cost share program is implemented. This estimation only accounts for the installation and planting of the rain garden, but does not include maintenance (assumed that the homeowner maintains the garden), or implementation and tracking of the homeowner practices program.

TABLE 11. RAIN GARDEN IMPERVIOUS CREDIT AND CAST PER NEIGHBORHOOD

NSA Neighbor- hood ID	Number of Houses	Average Roof Size (sq ft)	Total Roof Area (sq ft)*	Average Rain Garden (sq ft)**	Total Impervious Credit (ac)	Average Cost Per Garden	Cost Per Neighbor- hood	Cost to City
5	57	871.2	4,966	54.5	0.06	\$1,361	\$7,759	\$3,880
7	37	1,306.8	4,835	81.7	0.06	\$2,042	\$7,555	\$ 3,777
8	90	1,306.8	11,761	81.7	0.14	\$2,042	\$18,377	\$9,188
11	300	871.2	26,136	54.5	0.30	\$1,361	\$40,838	\$20,419
12	200	1,742.4	34,848	108.9	0.40	\$2,723	\$54,450	\$27,225
13	900	1,306.8	117,612	81.7	1.35	\$2,042	\$183,769	\$91,884
16	400	1,306.8	52,272	81.7	0.60	\$2,042	\$81,675	\$40,838
17	600	1,306.8	78,408	81.7	0.90	\$2,042	\$122,513	\$61,256
19	500	653.4	32,670	40.8	0.38	\$1,021	\$51,047	\$25,523
26	200	2,613.6	52,272	163.4	0.60	\$4,084	\$81,675	\$40,838
<b>Total</b>					<b>4.79</b>	<b>\$20,760</b>	<b>\$649,658</b>	<b>\$324,828</b>

\*Assumed 10% homeowner participation in each neighborhood and rain garden will receive runoff from only half of each roof.

\*\* Size calculations assume an average depth of 8 inches and one-inch rainfall depth treated.

### Conservation Landscaping

Conservation landscaping is defined by MDE as “land cover conservation from pervious to an unmanaged (unfertilized, unmowed) meadow condition” (MDE, 2019), and at a residential scale involves planting native plants in areas previously managed as lawn. Conservation landscaping was recommended in neighborhoods that had adequate lawn space to convert a portion of the lawn into a native garden. A total of eleven neighborhoods were found to be good candidates for conservation landscaping. **Table 12** presents the impervious credit and associated cost by NSA neighborhood. Impervious credit is calculated using an alternative practice impervious acre equivalence for non-riparian conservation landscaping of 0.37 (MDE, 2019).

For planning purposes, it was assumed that 20% of the homeowners in each neighborhood would participate. An assumed plating area was assigned to each neighborhood based on the average lawn space available. The cost per impervious credit for rain gardens is \$470,921, assuming a cost share program is implemented. This estimation assumed that funds will be provided to the homeowner to help purchase native plants (at \$8 per quart-sized potted plant and planted at one plant per square foot) and assumes that the homeowner will install and maintain the garden). The cost estimates do not include implementation and tracking of the homeowner practices program.

TABLE 12. CONSERVATION LANDSCAPING IMPERVIOUS CREDIT AND COST BY NEIGHBORHOOD

NSA Neighbor- hood ID	Number of Houses	Average Planting Area (sq ft)	Impervious Credit (acres)*	Average Cost Per Garden	Cost Per Neighborhood	Cost to City
1	98	200	0.03	\$1,600	\$31,360	\$15,680
5	57	150	0.02	\$1,200	\$13,680	\$6,840
7	37	200	0.01	\$1,600	\$11,840	\$5,920
8	90	150	0.02	\$1,200	\$21,600	\$10,800
11	300	150	0.08	\$1,200	\$72,000	\$36,000
12	200	200	0.07	\$1,600	\$64,000	\$32,000
13	900	200	0.31	\$1,600	\$288,000	\$144,000
16	400	150	0.10	\$1,200	\$96,000	\$48,000
17	600	150	0.15	\$1,200	\$144,000	\$72,000
19	500	100	0.09	\$800	\$80,000	\$40,000
26	200	200	0.07	\$1,600	\$64,000	\$32,000
<b>Total</b>			<b>0.95</b>	<b>n/a</b>	<b>\$886,480</b>	<b>\$443,240</b>

\*Assumed 20% homeowner participation in each neighborhood.

## 5 TREATMENT SUMMARY

### 5.1 PROPOSED PROJECTS SUMMARY

As a requirement of the NPDES MS4 Discharge Permit issued by MDE to the City of Aberdeen on October 31, 2018, the City must treat 20% of remaining baseline untreated impervious acres by 2025. **Table 13** presents a summary of the proposed BMPs described in Section 4, and associated impervious credit and estimated cost.

Costs for restoration projects include the planning, design, surveying, environmental permitting, agency review, and construction costs and were estimated using King and Hagan (2011).

TABLE 13: IMPERVIOUS CREDIT AND COST SUMMARY OF PROPOSED BMPs

BMP	Units	Proposed Implementation	Impervious Credit (acres)	Total Initial Cost	Cost over 20 Years
Reforestation	Acres	3.92	5.44	\$51,081	\$87,965
Stream Restoration	Linear Feet	11,545	230.90	\$8,649,240	\$11,038,841
Rain Barrels	Number of Barrels	1,970	3.01	\$83,742	n/a
Rain Gardens	Number of Gardens	328	4.77	\$324,828	n/a
Conservation Landscaping	Number of Gardens	676	0.95	\$443,240	n/a
<b>Total</b>			<b>245.07</b>	<b>\$9,552,131</b>	<b>\$11,126,806</b>

## 5.2 IMPERVIOUS CREDIT

A summary of the baseline impervious area, restoration requirement, and impervious credit achieved through the projects identified in Section 4 can be found in **Table 14**. The impervious credits gained from the identified stream restoration and reforestation practices exceeds the required 20% restoration goal.

**TABLE 14: CITY OF ABERDEEN IMPERVIOUS ACCOUNTING**

<b>Impervious Accounting</b>	<b>Aberdeen Acres</b>
<b>2004 Baseline Impervious Treatment</b>	
Total Impervious Area	998.51 acres
Impervious Treated	32.72 acres
Impervious Untreated	965.79 acres
Restoration Requirement (20% of Untreated Impervious Area)	193.16 acres
<b>FY 19 Progress</b>	
Impervious Treated	X.X acres
<b>Potential Impervious Treatment</b>	
Operational Practices (Street Sweeping, Inlet Cleaning; annual practices)	TBD
Structural Practices (Stream Restoration, Reforestation)	236.34 acres
Homeowner Practices (Rain Barrels, Rain Gardens, Conservation Landscaping)	8.73 acres
<b>Potential Impervious Treatment</b>	<b>245.07 acres</b>
<b>Summary of Projected Progress</b>	
Impervious Untreated	965.79 acres
Potential Impervious Treatment	245.07 acres
Total Progress and Potential Treatment	X.X acres
<b>Percentage Projected to be Treated</b>	<b>25.4%</b>

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Yetman, Kenneth T., 2001. Stream Corridor Assessment Survey: Survey Protocols. Maryland Department of Natural Resources: Watershed Restoration Division: Annapolis, MD. <https://dnr.maryland.gov/streams/Publications/SCAProtocol>

## APPENDIX A – Stream Corridor Assessment Data



Erosion

REACH	SITE	FIELD DATE	PHOTO	TYPE	POSSIBLE CAUSE	LENGTH RIGHT (FT)	LENGTH LEFT (FT)	HEIGHT (FT)	LAND USE LEFT	LAND USE RIGHT	THREAT TO INFRASTRUCTURE?	DESCRIPTION	CORRECTABILITY	ACCESS	SEVERITY
002	ES001	2/10/2020	R002_ES001_1.jpg,R002_ES001_2.jpg	WIDENING	LAND USE CHANGE US	5820	5820	5	FOREST	FOREST	NO		4	5	3
003	ES001	2/10/2020	R003_ES001.jpg	DOWNCUTTING	MATCHING GRADE OF MAINSTEM	432	432	5	FOREST	FOREST	NO	HIGHLY INCISED CHANNEL ORIGINATING AT POND	3	1	2
016	ES001	2/11/2020	R016_ES001_1.jpg,R016_ES001_2.jpg	WIDENING	LAND USE CHANGE US	3174	3174	3	FOREST	FOREST	NO		4	5	3
022	ES001	2/11/2020	R022_ES001_1.jpg,R022_ES001_2.jpg	DOWNCUTTING/HEADCUTTING	MATCHING GRADE	260	260	5	FOREST	FOREST	NO	WETLAND CHANNEL HEADCUTS 5' DOWN, CREATING GULLY	2	2	2
033	ES001	2/11/2020	R033_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US, REMOVED RIPARIAN	248	248	5	RESIDENTIAL YARD	FOREST	NO	RAW, ERODED BANKS IN ISOLATED LOCATIONS	2	1	3
039	ES001	2/13/2020	R039_ES001.jpg	HEADCUTTING	PARK RUNOFF	10	10	3	PARK, TURF	FOREST	NO	RUNOFF FROM ADJACENT PARK CAUSING 3' HEADCUT	2	1	2
041	ES001	2/13/2020	R041_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	532	532	3	FOREST	FOREST	NO	RAW ERODED BANKS	3	3	3
041	ES002	2/13/2020	R041_ES002_1.jpg,R041_ES002_2.jpg	HEADCUTTING	RUNOFF FROM TOWNHOUSES, FLOWS TO WETLAND	20	20	4	FOREST	FOREST	NO	MULTIPLE HEADCUTS FROM EPHEMERAL WETLAND CHANNEL	3	2	2
041	ES003	2/13/2020	R041_ES003.jpg	HEADCUTTING	RUNOFF FROM ROAD UPSTREAM	2	2	3	FOREST	RESIDENTIAL	NO	RUNOFF FROM ROAD	3	2	3
041	ES004	2/13/2020	R041_ES004.jpg	HEADCUTTING	ADJACENT NEIGHBORHOOD RUNOFF	20	20	3	FOREST	FOREST	NO	EPHEMERAL WETLAND CHANNEL HEADCUTS AT MAINSTEM	3	2	3
041	ES005	2/13/2020	R041_ES005.jpg	HEADCUTTING	LAND USE CHANGE US	0	0	4	RESIDENTIAL	FOREST	NO	HEADWATER HEADCUTS	3	2	3
043	ES001	2/13/2020	R043_ES001_1.jpg, R043_ES001_2.jpg	DOWNCUTTING	LAND USE CHANGE US	1600	1600	5	RESIDENTIAL	FOREST	NO	SEVERELY INCISED CHANNEL	3	2	2
047	ES001	2/13/2020	R047_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	1208	1208	10	FOREST	RESIDENTIAL	NO	SEVERELY INCISED CHANNEL ORIGINATES AT PIPE AT ROAD	4	2	2
050	ES001	2/13/2020	R050_ES001_1.jpg,R050_ES001_2.jpg	DOWNCUTTING	LAND USE CHANGE US	1866	1866	10	FOREST	FOREST	NO	HEAVILY INCISED AND ACTIVELY ERODING CHANNEL	3	3	2
054	ES001	2/14/2020	R054_ES001.jpg	WIDENING	LAND USE CHANGE US	744	744	2	FOREST	FOREST	NO		3	3	4
054	ES002	2/14/2020	R054_ES002.jpg	DOWNCUTTING	POND OUTFALL CHANNEL	66	66	3	FOREST/RESIDENTIAL	FOREST/RESIDENTIAL	NO		2	2	2
057	ES001	2/14/2020	R057_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	570	570	10	FOREST	FOREST	NO	SEVERELY INCISED AND ERODED CHANNEL	2	2	2
059	ES001	2/14/2020	R059_ES001_1.jpg,R059_ES001_2.jpg	WIDENING	LAND USE CHANGE US	876	876	4	FOREST	FOREST	NO		4	4	3
067	ES001	2/17/2020	R067_ES001_1.jpg,R067_ES001_2.jpg	DOWNCUTTING/WIDENING	LAND USE CHANGE US	358	358	7	FOREST/DEVELOPED	FOREST	NO		4	3	3
070	ES001	2/17/2020	R070_ES001.jpg	WIDENING	LAND USE CHANGE US	314	314	2	FOREST	FOREST	NO		4	4	4
073	ES001	2/17/2020	R073_ES001_1.jpg,R073_ES001_2.jpg	WIDENING	PARKING LOT	161	161	3	PARKING LOT	RESIDENTIAL YARD	YES	PARKING LOT AT EDGE OF STREAM, ASPHALT BREAKING UP	2	1	2
074	ES001	2/17/2020	R074_ES001_1.jpg,R074_ES001_2.jpg	WIDENING	LAND USE CHANGE US	106	106	3	RESIDENTIAL YARDS	RESIDENTIAL YARDS	NO	MINOR BANK EROSION	3	2	5
080	ES001	2/17/2020	R080_ES001.jpg	WIDENING	LAND USE CHANGE US	1408	1408	5	FOREST	FOREST	NO		4	4	3
082	ES001	2/17/2020	R082_ES001_1.jpg,R082_ES001_2.jpg	WIDENING	LAND USE CHANGE US	4666	4666	3	FOREST	FOREST	NO		4	4	3
088	ES001	2/17/2020	R088_ES001_1.jpg,R088_ES001_2.jpg	DOWNCUTTING/WIDENING	LAND USE CHANGE US	2178	2178	5	RESIDENTIAL	FOREST	NO		3	3	2
088	ES002	2/17/2020	R088_ES002.jpg	WIDENING	LAND USE CHANGE US, APT COMPLEX DRAINAGE	700	700	5	RESIDENTIAL	FOREST	NO		2	2	3
089	ES001	2/18/2020	R089_ES001_1.jpg,R089_ES001_2.jpg	WIDENING	LAND USE CHANGE US	176	176	5	RESIDENTIAL	FOREST	NO		3	2	3
089	ES002	2/18/2020	R089_ES002.jpg	HEADCUTTING	LAND USE CHANGE US	502	502	7	RESIDENTIAL	FOREST/RESIDENTIAL	NO		3	2	3
095	ES001	2/18/2020	R095_ES001.jpg	WIDENING	LAND USE CHANGE US	380	380	2.5	FOREST	COMMERCIAL	NO		3	2	3
100	ES001	2/18/2020	R100_ES001.jpg	DOWNCUTTING	END OF CONCRETE CHANNELIZATION	10	10	2	FOREST	ROAD	NO		2	1	4
102	ES001	2/18/2020	R102_ES001_1.jpg,R102_ES001_2.jpg,R102_ES001_3.jpg	WIDENING	LAND USE CHANGE US	2442	2442	3	FOREST	FOREST	YES	SMALL AREA OF FENCE THREATENED BY ERODING BANK	4	4	3
105	ES001	2/18/2020	R105_ES001_1.jpg,R105_ES001_2.jpg	WIDENING	LAND USE CHANGE US	336	336	6	FOREST	ROAD	NO		3	2	2
105	ES002	2/18/2020	ES002_1.jpg,ES002_2.jpg,ES002_3.jpg,ES002_4.jpg	WIDENING	LAND USE CHANGE US	1126	1126	10	RAILROAD	FOREST/ROADWAY	NO		3	2	2
107	ES001	2/18/2020	R107_ES001_1.jpg,R107_ES001_2.jpg	DOWNCUTTING	LAND USE CHANGE US	1084	1084	5	FOREST	FOREST/RESIDENTIAL	NO		3	3	2
108	ES001	2/18/2020	R108_ES001.jpg	WIDENING	DRAINAGE FROM ADJACENT ATHLETIC FIELD	25	25	3.5	FOREST	ATHLETIC FIELD	NO		4	2	3
109	ES001	2/19/2020	R109_ES001_1.jpg,R109_ES001_2.jpg	DOWNCUTTING	LAND USE CHANGE US	274	274	2	RESIDENTIAL	RESIDENTIAL	NO		4	2	4
110	ES001	2/19/2020	R110_ES001_1.jpg,R110_ES001_2.jpg,R110_ES001_3.jpg	WIDENING	LAND USE CHANGE US	558	558	2	RESIDENTIAL	RAILROAD	NO		2	2	3
111	ES001	2/19/2020	R111_ES001_1.jpg,R111_ES001_2.jpg	WIDENING	LAND USE CHANGE US	246	246	1	SCHOOL	RESIDENTIAL	NO		3	2	4
111	ES002	2/19/2020	R111_ES002.jpg	WIDENING	LAND USE CHANGE US	50	50	4	RESIDENTIAL	RESIDENTIAL	NO		4	3	4
115	ES001	2/19/2020	R115_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	264	264	4	FOREST	COMMERCIAL	NO		4	2	4
115	ES002	2/19/2020	R115_ES002_1.jpg,R115_ES002_2.jpg	DOWNCUTTING	LAND USE CHANGE US, IMPERVIOUS DRAINAGE	256	256	6	COMMERCIAL	COMMERCIAL	NO		3	1	3
123	ES001	2/19/2020	R123_ES001_1.jpg,R123_ES001_2.jpg	DOWNCUTTING	LAND USE CHANGE US	156	156	4	FOREST/RESIDENTIAL	FOREST/RESIDENTIAL	NO		3	2	3
125	ES001	2/19/2020	ES001_1.jpg,ES001_2.jpg,ES001_3.jpg,ES001_4.jpg	DOWNCUTTING	LAND USE CHANGE US	2284	2284	3	FOREST/RESIDENTIAL	FOREST/RESIDENTIAL	NO		3	2	3
126	ES001	2/19/2020	R126_ES001.jpg	DOWNCUTTING	RESIDENTIAL RUNOFF	212	212	3	FOREST	RESIDENTIAL	NO		2	2	3
129	ES001	2/19/2020	R129_ES001_1.jpg,R129_ES001_2.jpg	DOWNCUTTING/HEADCUTTING	LAND USE CHANGE US	322	322	2	FOREST	FOREST	NO		4	3	4
130	ES001	2/19/2020	R130_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	14	14	3	FOREST	FOREST	NO		4	4	4
130	ES002	2/19/2020	R130_ES002.jpg	WIDENING	LAND USE CHANGE US	246	246	2	RESIDENTIAL	FOREST	NO		3	2	4
132	ES001	2/20/2020	R132_ES001.jpg	WIDENING	LAND USE CHANGE US	570	570	2	FOREST/RESIDENTIAL	FOREST	NO		3	2	3
134	ES001	2/20/2020	R134_ES001.jpg	WIDENING	LAND USE CHANGE US	404	404	3	FOREST/GOLFCOURSE	FOREST	NO		4	4	4
135	ES001	2/20/2020	R135_ES001.jpg	HEADCUTTING	LAND USE CHANGE US	15	15	2	FOREST/RESIDENTIAL	FOREST/GOLF COURSE	NO		3	2	3
136	ES001	2/20/2020	R136_ES001.jpg	WIDENING	LAND USE CHANGE US	146	146	4	FOREST	FOREST	NO		3	2	3
137	ES001	2/20/2020	R137_ES001_1.jpg,R137_ES001_2.jpg	DOWNCUTTING	LAND USE CHANGE US	758	758	5	FOREST	FOREST	NO		2	2	2
137	ES002	2/20/2020	R137_ES002.jpg	DOWNCUTTING	LAND USE CHANGE US	2018	2018	4	FOREST/RESIDENTIAL	FOREST/RESIDENTIAL	NO		3	2	2
138	ES001	2/20/2020	R138_ES001_1.jpg,R138_ES001_2.jpg	DOWNCUTTING/HEADCUTTING	LAND USE CHANGE US	230	230	2	FOREST/RESIDENTIAL	FOREST	NO		4	3	4
139	ES001	2/20/2020	R139_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	134	134	2	FOREST	FOREST	NO		4	3	4
140	ES001	2/20/2020	R140_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	20	20	1	FOREST	FOREST	NO		5	3	5
141	ES001	2/20/2020	R141_ES001_1.jpg,R141_ES001_2.jpg	DOWNCUTTING	LAND USE CHANGE US	326	326	4	FOREST	RESIDENTIAL	NO		3	2	2
146	ES001	3/2/2020	R146_ES001_1,ES001_2,ES001_3,ES001_4.jpg	WIDENING	LAND USE CHANGE US	4720	4720	5	FOREST	FOREST	NO		3	4	2
146	ES002	3/2/2020	R146_ES002.jpg	WIDENING	LAND USE CHANGE US	59	59	4	FOREST	RESIDENTIAL	NO		4	2	3
146	ES003	3/2/2020	R146_ES003.jpg	WIDENING	LAND USE CHANGE US	60	60	6	FOREST	RESIDENTIAL	NO	SHORT SEGMENT OF SEVERE BANK EROSION	4	2	2
146	ES004	3/5/2020	R146_ES004.jpg	WIDENING	LAND USE CHANGE US	5694	5694	3	FOREST	FOREST	NO		4	3	3
148	ES001	3/2/2020	R148_ES001_1.jpg,R148_ES001_2.jpg	WIDENING	LAND USE CHANGE US	148	148	1.5	FOREST	FOREST	NO	MINOR MEANDER BEND EROSIONS	4	3	4
154	ES001	3/2/2020	R154_ES001.jpg	DOWNCUTTING/HEADCUTTING	LAND USE CHANGE US	208	208	4	FOREST	FOREST	NO		3	3	3
155	ES001	3/2/2020	R155_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	242	242	2	FOREST	FOREST	NO		4	3	4
156	ES001	3/2/2020	R156_ES001_1,ES001_2,ES001_3,ES001_4.jpg	WIDENING	LAND USE CHANGE US	2682	2682	4	FOREST	FOREST	NO		4	3	4
165	ES001	3/2/2020	R165_ES001_1.jpg,R165_ES001_2.jpg	DOWNCUTTING	RUNOFF FROM ROAD/RESIDENTIAL	396	396	2.5	FOREST	FOREST	NO		3	1	3
171	ES001	3/2/2020	R171_ES001_1.jpg,R171_ES001_2.jpg	DOWNCUTTING	RESIDENTIAL RUNOFF	1332	1332	3	FOREST	FOREST	NO	INCISED CHANNEL, EROSION MOSTLY HEALED OVER	4	3	4
173	ES001	3/5/2020	R173_ES001_1.jpg,R173_ES001_2.jpg	WIDENING	LAND USE CHANGE US	6182	6182	3	FOREST	FOREST	NO		2	2	2
174	ES001	3/5/2020	R174_ES001_1.jpg,R174_ES001_2.jpg	WIDENING	LAND USE CHANGE US	156	156	2	FOREST	COMMERCIAL	NO		3	2	4
181	ES001	3/5/2020	R181_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US, ROAD RUNOFF	894	894	2	FOREST	FOREST	NO	INCISED CHANNEL, ACTIVELY ERODING	2	2	3
181	ES002	3/5/2020	R181_ES002.jpg	HEADCUTTING	LAND USE CHANGE US	0	0	3	FOREST	FOREST	NO	3FT HEADCUT, HELD BY TREE ROOTS	4	3	3
186	ES001	3/5/2020	R186_ES001_1.jpg,R186_ES001_2.jpg	DOWNCUTTING/HEADCUTTING	LAND USE CHANGE US	126	126	3	FOREST	FOREST	NO		4	3	4
192	ES001	3/5/2020	R192_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	148	148	3	FOREST	FOREST	NO	INCISED CHANNEL AT CONFLUENCE WITH CARSENS RUN	3	4	4
197	ES001	3/9/2020	R197_ES001_1.jpg,R197_ES001_2.jpg,R197_ES001_3.jpg	WIDENING	LAND USE CHANGE US	6026	6026	4	FOREST	FOREST	NO		2	4	2
198	ES001	3/5/2020	R198_ES001.jpg	WIDENING	LAND USE CHANGE US	120	120	2.5	FOREST	FOREST	NO		4	3	5
200	ES001	3/5/2020	R200_ES001_1.jpg,R200_ES001_2.jpg	WIDENING	LAND USE CHANGE US	842	842	1	FOREST	FOREST	NO	ERODED MEANDER BENDS, MOSTLY HELD WITH TREE ROOTS	4	4	5
206	ES001	3/9/2020	R206_ES001_1,ES001_2,ES001_3,ES001_4.jpg	DOWNCUTTING	LAND USE CHANGE US	4500	4500	4	FOREST	FOREST	NO	SEVERELY INCISED CHANNEL	3	2	2
207	ES001	3/9/2020	R207_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	234	234	2.5	FOREST	NEW DEVELOPMENT/CONSTR	NO		3	1	3
207	ES002	3/9/2020	R207_ES002.jpg	HEADCUTTING	LAND USE CHANGE US, NEW DEVELOPMENT	0	0	2.5	FOREST	FOREST	NO		3	2	2
207	ES003	3/9/2020	R207_ES003_1.jpg,R207_ES003_2.jpg,R207_ES003_3.jpg	DOWNCUTTING	LAND USE CHANGE US	610	610	2	FOREST	FOREST	NO		3	2	4
208	ES001	3/9/2020	R208_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	46	46	1.5	FOREST	FOREST	NO	INCISED CHANNEL, MOSTLY OLD EROSION	5	3	5
210	ES001	3/9/2020	R210_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	126	126	3	FOREST	FOREST	NO	REACH BEGINS AT 2FT HEADCUT, INCISED CHANNEL	4	3	4
211	ES001	3/9/2020	R211_ES001_1.jpg,R211_ES001_2.jpg,R211_ES001_3.jpg	DOWNCUTTING	LAND USE CHANGE US, AGRICULTURAL FIELD	5090	5090	5	FOREST	FOREST	NO	INCISED CHANNEL	3	4	2
214	ES001	3/9/2020	R214_ES001.jpg	DOWNCUTTING	LAND USE CHANGE US	798	798	4	FOREST	RESIDENTIAL YARD	NO	INCISED CHANNEL STARTS AT TWO 4' HEADCUTS	3	2	3
216	ES001	3/9/2020	R216_ES001_1.jpg,R216_ES001_2.jpg	DOWNCUTTING	LAND USE CHANGE US	382									

Unusual Condition

REACH	SITE	PHOTO	FIELD DATE	TYPE	DESCRIPTION	Potential	SEVERITY	CORRECTABILITY	ACCESS	COMMENT
041	UC001	R041_UC001.jpg	2/13/2020	WETLAND CHANNEL HEADCUTTING 2' TO MEET MAINSTEM	FLOWING HEAVY DUE TO RECENT RAIN		3	4	4	
111	UC001	R111_UC001.jpg	2/19/2020	DEBRIS JAM, 2' HIGH HEADCUT			4	3	2	
155	UC001	R155_UC001.jpg	3/2/2020	SECTION OF CONCRETE PIPE IN CHANNEL			4	4	3	
146	UC001	R146_UC001.jpg	3/5/2020	LARGE METAL BEAM ACROSS STREAM	DIRECTING FLOW TO RB, CAUSING BANK EROSION	AND SCOUR	3	2	2	
173	UC001	R173_UC001.jpg	3/5/2020	EXPOSED CONCRETE PIPE AT SEWER CROSSING			4	2	1	
175	UC001	R175_UC001.jpg	3/5/2020	OLD HOUSE FOUNDATION AND CHIMNEY AT HEADWATERS			5	5	5	
173	UC002	R173_UC002.jpg	3/5/2020	CONCRETE PIPE IN CHANNEL			4	4	3	
184	UC001	R184_UC001.jpg	3/5/2020	OLD POND OR ROAD BED, PIPED UNDERGROUND FOR 10FT			5	3	3	

Representative Site

REACH	SITE	FIELD DATE	PHOTO	SUBSTRATE	EMBEDDEDNESS	SHELTER FOR FISH	CHANNEL ALTERATION	SEDIMENT DEPOSITION	VELOCITY DEPTH DIVERSITY	CHANNEL FLOW STATUS	BANK VEGETATION
002	RE001	2/10/2020	R002_RE001_DS.jpg,R002_RE001_US.jpg	MARGINAL	MARGINAL	SUBOPTIMAL	OPTIMAL	POOR	SUBOPTIMAL	SUBOPTIMAL	MARGINAL
016	RE001	2/11/2020	R016_RE001_DS.jpg,R016_RE001_US.jpg	MARGINAL	MARGINAL	MARGINAL	OPTIMAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	MARGINAL
033	RE001	2/11/2020	R033_RE001_DS.jpg,R033_RE001_US.jpg	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	OPTIMAL	SUBOPTIMAL	SUBOPTIMAL	OPTIMAL	SUBOPTIMAL
039	RE001	2/13/2020	R039_RE001_DS.jpg,R039_RE001_US.jpg	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	OPTIMAL	OPTIMAL	MARGINAL	OPTIMAL	OPTIMAL
043	RE001	2/13/2020	R047_RE001_DS.jpg,R047_RE001_US.jpg	POOR	POOR	POOR	SUBOPTIMAL	POOR	MARGINAL	SUBOPTIMAL	MARGINAL
047	RE001	2/13/2020	R050_RE001_DS.jpg,R050_RE001_US.jpg	MARGINAL	MARGINAL	POOR	SUBOPTIMAL	POOR	MARGINAL	SUBOPTIMAL	MARGINAL
050	RE001	2/13/2020	R043_RE001_DS.jpg,R043_RE001_US.jpg	MARGINAL	MARGINAL	MARGINAL	OPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL
054	RE001	2/14/2020	R054_RE001_DS.jpg,R054_RE001_US.jpg	POOR	POOR	POOR	SUBOPTIMAL	MARGINAL	POOR	SUBOPTIMAL	SUBOPTIMAL
057	RE001	2/14/2020	R057_RE001_DS.jpg,R057_RE001_US.jpg	MARGINAL	SUBOPTIMAL	MARGINAL	POOR	MARGINAL	SUBOPTIMAL	MARGINAL	POOR
059	RE001	2/14/2020	R059_RE001_DS.jpg,R059_RE001_US.jpg	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL
063	RE001	2/14/2020	R063_RE001_DS.jpg,R063_RE001_US.jpg	POOR	MARGINAL	POOR	POOR	MARGINAL	POOR	MARGINAL	SUBOPTIMAL
065	RE001	2/14/2020	R065_RE001_DS.jpg,R065_RE001_US.jpg	POOR	POOR	POOR	POOR	POOR	POOR	MARGINAL	SUBOPTIMAL
067	RE001	2/17/2020	R067_RE001_DS.jpg,R067_RE001_US.jpg	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL
069	RE001	2/17/2020	R069_RE001_DS.jpg,R069_RE001_US.jpg	MARGINAL	MARGINAL	POOR	SUBOPTIMAL	SUBOPTIMAL	POOR	MARGINAL	SUBOPTIMAL
080	RE001	2/17/2020	R080_RE001_DS.jpg,R080_RE001_US.jpg	SUBOPTIMAL	MARGINAL	MARGINAL	OPTIMAL	MARGINAL	SUBOPTIMAL	MARGINAL	MARGINAL
082	RE001	2/17/2020	R082_RE001_DS.jpg,R082_RE001_US.jpg	MARGINAL	MARGINAL	SUBOPTIMAL	OPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL	MARGINAL
088	RE001	2/17/2020	R088_RE001_DS.jpg,R088_RE001_US.jpg	MARGINAL	SUBOPTIMAL	POOR	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL
089	RE001	2/18/2020	R089_RE001_DS.jpg,R089_RE001_US.jpg	MARGINAL	SUBOPTIMAL	POOR	POOR	SUBOPTIMAL	MARGINAL	MARGINAL	SUBOPTIMAL
094	RE001	2/18/2020	R094_RE001_DS.jpg,R094_RE001_US.jpg	POOR	MARGINAL	POOR	POOR	MARGINAL	POOR	OPTIMAL	POOR
095	RE001	2/18/2020	R095_RE001_DS.jpg,R095_RE001_US.jpg	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	MARGINAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	MARGINAL
102	RE001	2/18/2020	R102_RE001_DS.jpg,R102_RE001_US.jpg	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL
105	RE001	2/18/2020	R105_RE001_DS.jpg,R105_RE001_US.jpg	MARGINAL	MARGINAL	MARGINAL	POOR	MARGINAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL
107	RE001	2/18/2020	R107_RE001_DS.jpg,R107_RE001_US.jpg	POOR	POOR	POOR	SUBOPTIMAL	SUBOPTIMAL	POOR	SUBOPTIMAL	SUBOPTIMAL
108	RE001	2/18/2020	R108_RE001_DS.jpg,R108_RE001_US.jpg	POOR	SUBOPTIMAL	POOR	OPTIMAL	SUBOPTIMAL	POOR	MARGINAL	SUBOPTIMAL
109	RE001	2/18/2020	R109_RE001_DS.jpg,R109_RE001_US.jpg	MARGINAL	SUBOPTIMAL	POOR	MARGINAL	SUBOPTIMAL	POOR	SUBOPTIMAL	MARGINAL
110	RE001	2/19/2020	R110_RE001_DS.jpg,R110_RE001_US.jpg	MARGINAL	SUBOPTIMAL	POOR	POOR	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	MARGINAL
111	RE001	2/19/2020	R111_RE001_DS.jpg,R111_RE001_US.jpg	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL
115	RE001	2/19/2020	R115_RE001_DS.jpg,R115_RE001_US.jpg	MARGINAL	MARGINAL	POOR	OPTIMAL	OPTIMAL	POOR	OPTIMAL	OPTIMAL
116	RE001	2/19/2020	R116_RE001_DS.jpg,R116_RE001_US.jpg	MARGINAL	MARGINAL	POOR	OPTIMAL	OPTIMAL	POOR	MARGINAL	SUBOPTIMAL
125	RE001	2/19/2020	R125_RE001_DS.jpg,R125_RE001_US.jpg	MARGINAL	OPTIMAL	POOR	OPTIMAL	OPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL
132	RE001	2/20/2020	R132_RE001_DS.jpg,R132_RE001_US.jpg	SUBOPTIMAL	OPTIMAL	POOR	OPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL
134	RE001	2/20/2020	R134_RE001_DS.jpg,R134_RE001_US.jpg	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	OPTIMAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL
136	RE001	2/20/2020	R136_RE001_DS.jpg,R136_RE001_US.jpg	MARGINAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL	MARGINAL
137	RE001	2/20/2020	R137_RE001_DS.jpg,R137_RE001_US.jpg	MARGINAL	MARGINAL	POOR	SUBOPTIMAL	MARGINAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL
146	RE001	3/2/2020	R148_RE001_DS.jpg,R148_RE001_US.jpg	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL
148	RE001	3/2/2020	R155_RE001_DS.jpg,R155_RE001_US.jpg	MARGINAL	MARGINAL	POOR	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL
155	RE001	3/2/2020	R156_RE001_DS.jpg,R156_RE001_US.jpg	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	SUBOPTIMAL	OPTIMAL	SUBOPTIMAL	SUBOPTIMAL
156	RE001	3/2/2020	R159_RE001_DS.jpg,R159_RE001_US.jpg	MARGINAL	MARGINAL	MARGINAL	SUBOPTIMAL	MARGINAL	OPTIMAL	SUBOPTIMAL	SUBOPTIMAL
159	RE001	3/2/2020	R146_RE001_DS.jpg,R146_RE001_US.jpg	OPTIMAL	OPTIMAL	OPTIMAL	SUBOPTIMAL	SUBOPTIMAL	OPTIMAL	SUBOPTIMAL	SUBOPTIMAL
173	RE001	3/5/2020	R173_RE001_DS.jpg,R173_RE001_US.jpg	MARGINAL	MARGINAL	MARGINAL	SUBOPTIMAL	MARGINAL	MARGINAL	MARGINAL	SUBOPTIMAL
181	RE001	3/5/2020	R181_RE001_DS.jpg,R181_RE001_US.jpg	POOR	MARGINAL	POOR	MARGINAL	MARGINAL	POOR	MARGINAL	SUBOPTIMAL
184	RE001	3/5/2020	R184_RE001_DS.jpg,R184_RE001_US.jpg	MARGINAL	SUBOPTIMAL	POOR	SUBOPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL
197	RE001	3/5/2020	R200_RE001_DS.jpg,R200_RE001_US.jpg	POOR	MARGINAL	POOR	OPTIMAL	SUBOPTIMAL	POOR	SUBOPTIMAL	SUBOPTIMAL
200	RE001	3/9/2020	R197_RE001_DS.jpg,R197_RE001_US.jpg	MARGINAL	MARGINAL	MARGINAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	MARGINAL	MARGINAL
206	RE001	3/9/2020	R206_RE001_DS.jpg,R206_RE001_US.jpg	MARGINAL	MARGINAL	POOR	OPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	SUBOPTIMAL
207	RE001	3/9/2020	R207_RE001_DS.jpg,R207_RE001_US.jpg	POOR	POOR	POOR	SUBOPTIMAL	SUBOPTIMAL	POOR	SUBOPTIMAL	SUBOPTIMAL
211	RE001	3/9/2020	R211_RE001_DS.jpg,R211_RE001_US.jpg	POOR	SUBOPTIMAL	POOR	OPTIMAL	SUBOPTIMAL	MARGINAL	SUBOPTIMAL	OPTIMAL



Representative Site continued

REACH	SITE	BANK CONDITION	RIPARIAN VEGETATION	WIDTH RIFFLE (IN)	WIDTH RUN (IN)	WIDTH POOL (IN)	DEPTH RIFFLE (IN)	DEPTH RUN (IN)	DEPTH POOL (IN)	BOTTOM SUBSTRATE	STREAM NOTES
002	RE001	POOR	SUBOPTIMAL	96	216	240	6	8	24	SAND/GRAVEL	PERENNIAL
016	RE001	MARGINAL	SUBOPTIMAL	60	84	120	6	8	24	GRAVEL/SAND	PERENNIAL
033	RE001	SUBOPTIMAL	SUBOPTIMAL	48	48	72	3	6	12	GRAVEL/SAND	PERENNIAL
039	RE001	OPTIMAL	SUBOPTIMAL	24	30	36	3	4	10	GRAVEL	PERENNIAL
043	RE001	POOR	SUBOPTIMAL	24	30	36	2	4	8	GRAVEL	PERENNIAL
047	RE001	POOR	SUBOPTIMAL	24	36	48	3	5	8	GRAVEL/SAND	PERENNIAL
050	RE001	SUBOPTIMAL	SUBOPTIMAL	36	48	60	3	5	10	GRAVEL	PERENNIAL
054	RE001	MARGINAL	SUBOPTIMAL	36	42	48	2	4	6	GRAVEL	PERENNIAL
057	RE001	POOR	SUBOPTIMAL	48	60	96	2	4	10	GRAVEL	PERENNIAL
059	RE001	MARGINAL	SUBOPTIMAL	48	60	72	4	6	12	GRAVEL/BOULDER	PERENNIAL
063	RE001	SUBOPTIMAL	MARGINAL	36	36	36	2	4	6	SILT	PERENNIAL
065	RE001	SUBOPTIMAL	POOR	60	60	60	3	5	10	SILT	PERENNIAL
067	RE001	MARGINAL	MARGINAL	72	84	96	2	5	10	GRAVEL	PERENNIAL
069	RE001	MARGINAL	MARGINAL	24	36	48	2	4	6	SILT	INTERMITTENT STREAM, HIGHLY INCISED, NOT ACTIVELY ERODED
080	RE001	MARGINAL	OPTIMAL	96	120	132	4	8	12	GRAVEL	PERENNIAL, SMELLS LIKE DETERGENT,SOAPY SUDS OBSERVED
082	RE001	MARGINAL	OPTIMAL	180	288	360	6	12	36	SAND	PERENNIAL, SWAN CREEK
088	RE001	POOR	SUBOPTIMAL	36	48	60	2	6	8	GRAVEL	PERENNIAL
089	RE001	MARGINAL	MARGINAL	48	48	60	1	3	6	GRAVEL	PERENNIAL
094	RE001	OPTIMAL	POOR	60	60	60	3	5	8	CONCRETE	PERENNIAL
095	RE001	MARGINAL	MARGINAL	48	48	60	3	5	10	GRAVEL	PERENNIAL
102	RE001	MARGINAL	SUBOPTIMAL	48	60	72	2	6	18	GRAVEL	PERENNIAL
105	RE001	MARGINAL	MARGINAL	36	60	84	3	8	18	GRAVEL/SAND	PERENNIAL
107	RE001	POOR	SUBOPTIMAL	12	36	48	2	4	8	GRAVEL	PERENNIAL
108	RE001	OPTIMAL	MARGINAL	12	18	42	1	3	6	GRAVEL	PERENNIAL
109	RE001	MARGINAL	MARGINAL	24	36	42	2	4	8	GRAVEL	PERENNIAL
110	RE001	SUBOPTIMAL	POOR	36	42	72	3	4	8	GRAVEL	PERENNIAL
111	RE001	SUBOPTIMAL	MARGINAL	60	66	84	3	6	10	GRAVEL/COBBLE	PERENNIAL, POSSIBLY OLD STREAM RESTORATION PROJECT?
115	RE001	OPTIMAL	OPTIMAL	24	36	36	2	4	6	SILT	INTERMITTENT
116	RE001	OPTIMAL	POOR	12	24	36	2	3	4	SILT	INTERMITTENT, HEAVY ORANGE FLOC
125	RE001	MARGINAL	SUBOPTIMAL	36	42	60	2	4	8	COBBLE/BOULDER	PERENNIAL
132	RE001	POOR	MARGINAL	36	48	8	3	5	7	COBBLE	PERENNIAL
134	RE001	MARGINAL	SUBOPTIMAL	96	108	108	4	6	10	COBBLE	PERENNIAL
136	RE001	POOR	SUBOPTIMAL	96	120	144	4	8	12	GRAVEL	PERENNIAL
137	RE001	POOR	SUBOPTIMAL	36	36	48	3	4	8	SILT	PERENNIAL
146	RE001	SUBOPTIMAL	SUBOPTIMAL	84	96	108	3	5	10	GRAVEL	PERENNIAL
148	RE001	MARGINAL	SUBOPTIMAL	12	24	48	1	3	8	GRAVEL	PERENNIAL
155	RE001	MARGINAL	SUBOPTIMAL	96	120	144	6	10	24	BOULDER COBBLE	PERENNIAL
156	RE001	OPTIMAL	SUBOPTIMAL	72	120	156	3	6	18	GRAVEL	PERENNIAL
159	RE001	SUBOPTIMAL	MARGINAL	120	144	180	8	10	24	BOULDERS	PERENNIAL
173	RE001	MARGINAL	SUBOPTIMAL	24	36	48	2	4	10	GRAVEL	PERENNIAL
181	RE001	POOR	SUBOPTIMAL	18	24	30	1	3	5	GRAVEL	INTERMITTENT
184	RE001	OPTIMAL	OPTIMAL	24	30	36	2	4	6	GRAVEL	PERENNIAL
197	RE001	MARGINAL	OPTIMAL	12	24	36	2	4	8	GRAVEL	INTERMITTENT
200	RE001	MARGINAL	SUBOPTIMAL	60	96	144	5	10	16	GRAVEL	PERENNIAL, CARSINS RUN
206	RE001	MARGINAL	SUBOPTIMAL	36	48	60	3	5	10	GRAVEL	PERENNIAL
207	RE001	MARGINAL	MARGINAL	12	18	30	2	4	6	SILT	PERENNIAL
211	RE001	MARGINAL	SUBOPTIMAL	18	24	30	1	4	6	GRAVEL	PERENNIAL

Habitat Assessment Rankings (in order from worst to best condition) - Poor, Marginal, Suboptimal, Optimal

Potential BMP

REACH	SITE	FIELD DATE	PHOTO	BMP TYPE	BMP TYPE 2	COMMENTS
002	PB001	2/10/2020	R002_PB001_1.jpg,R002_PB001_2.jpg	STREAM RESTORATION		
013	PB001	2/11/2020	R013_PB001.jpg	POND RETROFIT		
019	PB001	2/11/2020	R019_PB001_1.jpg,R019_PB001_2.jpg	SPSC, OUTFALL STABILIZATION		
022	PB001	2/11/2020	R022_PB001_1.jpg,R022_PB001_2.jpg	STREAM RESTORATION		
034	PB001	2/11/2020	R034_PB001.jpg	POND RETROFIT		
039	PB001	2/13/2020	R039_PB001_1.jpg,R039_PB001_2.jpg	RAIN GARDEN		
043	PB001	2/13/2020	R043_PB001.jpg	TREE PLANTING		
043	PB002	2/13/2020	R043_PB002_1.jpg,R043_PB002_2.jpg	STREAM RESTORATION		
053	PB001	2/14/2020	R053_PB001.jpg	TREE PLANTING		
057	PB001	2/14/2020	R057_PB001.jpg	STREAM RESTORATION/ SPSC		
065	PB001	2/14/2020	R065_PB001.jpg	TREE PLANTING		
065	PB002	2/14/2020	R065_PB002.jpg	TREE PLANTING		
067	PB001	2/17/2020	R067_PB001_1.jpg,R067_PB001_2.jpg,R067_PB001_3.jpg	POND RETROFIT		REPACE GABION WITH RISER, REMOVE CONCRETE, INSTALL OUTFALL CHANNEL
072	PB001	2/17/2020	R072_PB001.jpg	STREAM RESTORATION	NEW STORMWATER BMP	DAYLIGHT PIPED STREAM, PIPED APPROX 700 FEET, ALSO MAY BE ROOM HERE FOR SWM BMP IN OPEN FIELD
075	PB001	2/17/2020	R075_PB001.jpg	TREE PLANTING		
082	PB001	2/17/2020	R082_PB001.jpg	SPSC		
088	PB001	2/17/2020	R088_PB001_1.jpg,R088_PB001_2.jpg	STREAM RESTORATION		
107	PB001	2/18/2020	R107_PB001.jpg	TREE PLANTING		
107	PB002	2/18/2020	R107_PB002_1.jpg,R107_PB002_2.jpg,R107_PB002_3.jpg	STREAM RESTORATION		
108	PB001	2/18/2020	R108_PB001_1.jpg,R108_PB001_2.jpg	TREE PLANTING		
105	PB001	2/18/2020	R105_PB001_1,PB001_2,PB001_3,PB001_4,PB001_5.jpg	STREAM RESTORATION		ES001 AND ES002
123	PB001	2/19/2020	R123_PB001_1.jpg,R123_PB001_2.jpg	STREAM RESTORATION		SHORT REACH US FROM ROAD
125	PB001	2/19/2020	R125_PB001.jpg	TREE PLANTING		
126	PB001	2/19/2020	R126_PB001.jpg	STREAM RESTORATION		
130	PB001	2/20/2020	R130_PB001_1.jpg,R130_PB001_2.jpg	IMPERVIOUS REMOVAL	NEW STORMWATER BMP	
137	PB001	2/20/2020	R137_PB001_1.jpg,R137_PB001_2.jpg	STREAM RESTORATION		FROM HERE UPSTREAM, RESTORE ALL REACHES, INCISED CHANNELS
165	PB001	3/2/2020	R165_PB001_1.jpg,R165_PB001_2.jpg	STREAM RESTORATION		COULD INCLUDE UNMAPPED INCISED EPHEMERAL TRIB, RECEIVES ROAD RUNOFF, WAS STABILIZED WITH CURLEX
146	PB001	3/2/2020	R146_PB001.jpg	TREE PLANTING		TREE PLANTING ON RIGHT BANK, SPARSE CANOPY
173	PB001	3/5/2020	R173_PB001_1.jpg,R173_PB001_2.jpg,R173_PB001_3.jpg	STREAM RESTORATION		

Pipe Outfall

REACH	SITE	FIELD DATE	PHOTO	OUTFALL TYPE	PIPE TYPE	LOCATION	DIAMETER (IN)	CHANNEL WIDTH	DISCHARGE	COLOR	ODOR	SEVERITY	CORRECTABILITY	ACCESS	DESCRIPTION	TYPEDE	COLORDES
002	PO001	2/10/2020	R002_PO001.jpg	STORMWATER	PVC	LEFT	8	1	YES	CLEAR	NONE	4	3	3	OLD POND OUTFALL		
002	PO002	2/10/2020	R002_PO002.jpg	STORMWATER	RCP	RIGHT	36	3	TRICKLE	CLEAR	NONE	5	5	2	WET POND OUTFALL		
016	PO001	2/11/2020	R016_PO001.jpg	STORMWATER	RCP	LEFT	36	5	YES	CLEAR	NONE	4	5	1			
033	PO001	2/11/2020	R033_PO001.jpg	STORMWATER	CMP	LEFT	36	2	YES	CLEAR	NONE	4	4	4			
042	PO001	2/13/2020	R042_PO001.jpg	STORMWATER	RCP	LEFT	24	5	NO			5	5	1			
047	PO001	2/13/2020	R047_PO001.jpg	STORMWATER	CMP	RIGHT	24	5	YES	CLEAR	NONE	5	5	3			
054	PO001	2/14/2020	R054_PO001.jpg	STORMWATER	PVC	RIGHT	12	3	YES	CLEAR	NO	2	2	2	OUTFALL FOR WET POND, ERODED CHANNEL		
059	PO001	2/14/2020	R059_PO001.jpg	STORMWATER	CMP	LEFT	18	0	YES	CLEAR	NO	3	4	3		RUST	
059	PO002	2/14/2020	R059_PO002.jpg	STORMWATER	RCP	LEFT	24	4	YES	CLEAR	NONE	4	4	2			
080	PO001	2/17/2020	R080_PO001.jpg	WASTEWATER	CONCRETE	LEFT	0	4	YES	CLEAR	DETERGEN	2	4	1	WASTEWATER TREATMENT PLANT DISCHARGE	SOAPY	
082	PO001	2/17/2020	R082_PO001.jpg	STORMWATER	RCP	RIGHT	24	7	YES	CLEAR	NONE	3	3	2			
088	PO001	2/17/2020	R088_PO001.jpg	STORMWATER	RCP	RIGHT	24	3	NO			4	5	2			
092	PO001	2/18/2020	R092_PO001.jpg	STORMWATER	CONCRETE WEIR	RIGHT	3	5	NO			5	5	1			
102	PO001	2/18/2020	R102_PO001.jpg	STORMWATER	RCP	RIGHT	36	3	YES	CLEAR	NONE	4	5	1			
102	PO002	2/18/2020	R102_PO002_1.jpg,R102_PO002_2.jpg,R102_PO002_3.jpg	STORMWATER	CMP	LEFT	36	3	YES	CLEAR	NONE	3	3	2	FIRST 20 FEET OF OUTFALL CHANNEL CHANNELIZED WITH CO		
105	PO001	2/18/2020	R105_PO001.jpg	STORMWATER	RCP	RIGHT	12	0	NO			4	4	2	DOUBLE 12 INCH PIPES, NO OUTFALL CHANNEL, PIPES PARTIA		
108	PO001	2/18/2020	R108_PO001.jpg	STORMWATER	RCP	RIGHT	20	3	NO			5	5	3			
111	PO001	2/19/2020	R111_PO001.jpg	STORMWATER	RCP	LEFT	30	4	YES	CLEAR	NO	5	5	2		ALGAE	
111	PO002	2/19/2020	R111_PO002.jpg	STORMWATER	RCP	LEFT	12	3	NO			4	4	3	MOSTLY SUBMERGED		
111	PO003	2/19/2020	R111_PO003.jpg	STORMWATER	RCP	LEFT	12	4	YES	CLEAR	NONE	4	4	3			
111	PO004	2/19/2020	R111_PO004_DS.jpg,R111_PO004_US.jpg	STORMWATER	RCP	LEFT	36	5	YES	CLEAR	NONE	4	5	2		ALGAE	
111	PO005	2/19/2020	R111_PO005_1.jpg,R111_PO005_2.jpg	STORMWATER	RCP	RIGHT	12	4	YES	CLEAR	NONE	4	5	3			
125	PO001	2/19/2020	R125_PO001_DS.jpg,R125_PO001_US.jpg	STORMWATER	CMP	LEFT	24	3	NO			5	5	3	OUTFALLS ADJACENT TO SWM BMP		
137	PO001	2/20/2020	R137_PO001.jpg	STORMWATER	RCP	LEFT	36	4	TRICKLE	CLEAR	NONE	5	4	2		ALGAE	
146	PO001	3/2/2020	R146_PO001.jpg	STORMWATER	CMP	RIGHT	15	0	NO			4	4	1			
155	PO001	3/2/2020	R155_PO001.jpg	UNKNOWN	TERRA COTTA	LEFT	12	0	NO			4	4	3	ENDWALL HAS SEPERATED		
158	PO001	3/2/2020	R158_PO001.jpg	STORMWATER	CMP	RIGHT	30	2	TRICKLE	CLEAR	NONE	4	4	2			
156	PO001	3/2/2020	R156_PO001_DS.jpg,R156_PO001_US.jpg	STORMWATER	SMOOTH METAL	RIGHT	24	1	NO			3	3	3	40FT SECTION OF CONCRETE OUTFALL, PERCHED 2 FEET ABO		
156	PO002	3/2/2020	R156_PO002.jpg	STORMWATER	CONCRETE DITCH	LEFT	0	2	TRICKLE	CLEAR	NONE	4	3	3			
146	PO002	3/2/2020	R146_PO002.jpg	STORMWATER	CMP	LEFT	24	3	NO			4	4	2			
146	PO003	3/2/2020	R146_PO003.jpg	STORMWATER	RCP	RIGHT	12	3	NO			5	5	2			
165	PO001	3/2/2020	R165_PO001.jpg	UNKNOWN	CORREGATED PLASTIC	RIGHT	15	1	TRICKLE	CLEAR	NONE	5	5	1			
173	PO001	3/5/2020	R173_PO001_DS.jpg,R173_PO001_US.jpg	STORMWATER	CMP	RIGHT	24	3	TRICKLE	CLEAR	NONE	3	3	2	ERODED OUTFALL CHANNEL AFTER 15 FT OF RIPRAP ENDS		
206	PO001	3/9/2020	R206_PO001_1.jpg,R206_PO001_2.jpg	STORMWATER	RCP	RIGHT	15	3	NO			5	5	2	POND OUTFALL		

Fish Barrier

REACH	SITE	FIELD DATE	PHOTO	BLOCKAGE	TYPE	REASON	DROP (IN)	DEPTH (IN)	SEVERITY	CORRECTIBILITY	ACCESS	DESCRIPTION
057	FB001	2/14/2020	R057_FB001.jpg	TOTAL	ROAD CROSSING	TOO HIGH	180	0	1	2	2	
111	FB001	2/19/2020	R111_FB001.jpg	TOTAL	ROAD CROSSING	TOO HIGH	5	0	4	4	1	ROAD CULVERT CONCRETE SURFACE IS 5 INCHES ABOVE STREAM WATER LEVEL
156	FB001	3/2/2020	R156_FB001.jpg	TOTAL	ROAD CROSSING	TOO HIGH	11	0	3	4	3	
184	FB001	3/5/2020	R184_FB001.jpg	TOTAL	CHANNELIZED	TOO HIGH	48	0	2	3	2	CONCRETE CHANNEL

Channel Alteration

REACH	SITE	FIELD DATE	PHOTO	TYPE	BOTTOM WIDTH	LENGTH (FT)	PERENNIAL	SEDIMENTATIO	VEGETATION IN	ROAD CROSSING	LENGTH ABOVE	LENGTH BELOW	SEVERITY	CORRECTABILI	ACCESS	DESCRIPTION
057	CA001	2/14/2020	R057_CA001_1.jpg,R057_CA001_2.jpg	OLD ROAD CROSSING	5	30	YES	NO	NO	YES	0	0	1	2	2	
059	CA001	2/14/2020	R059_CA001.jpg	CONCRETE	3	50	YES	NO	NO	NO	0	0	3	3	3	CONCRETE CHANNELIZATION
071	CA001	2/17/2020	R071_CA001.jpg	CONCRETE	7	100	NO	NO	NO	NO	0	0	2	2	1	
073	CA001	2/17/2020	R073_CA001_DS.jpg,R073_CA001_US.jpg	RIP RAP UPSTREAM, GABION BASKET DOWNSTREAM	3	0	NO	NO	NO	NO	0	0	3	4	1	
094	CA001	2/18/2020	R094_CA001_DS.jpg,R094_CA001_US.jpg	CONCRETE	5	0	YES	YES	YES	NO	0	0	2	4	3	CONCRETE TRAPEZOIDAL CHANNEL
100	CA001	2/18/2020	R100_CA001_1.jpg,R100_CA001_2.jpg	CONCRETE	3	0	NO	YES	YES	NO	0	0	5	4	1	
101	CA001	2/18/2020	R101_CA001_1.jpg,R101_CA001_2.jpg	CONCRETE	2	0	NO	YES	YES	NO	0	0	3	3	2	
102	CA001	2/18/2020	R102_CA001_1.jpg,R102_CA001_2.jpg	CONCRETE	3	0	YES	YES	NO	NO	0	0	3	4	2	
102	CA002	2/18/2020	R102_CA002_1.jpg,R102_CA002_2.jpg	CONCRETE APRON 15' PAST POND OUTLET	6	0	YES	NO	NO	NO	0	0	5	5	3	RESTORED WITH ROCK CROSS VANES
105	CA001	2/18/2020	R105_CA001.jpg	CONCRETE	3	15	YES	NO	NO	NO	0	0	2	3	2	CONCRETE CHANNELIZED TRAPEZOIDAL CHANNEL
105	CA002	2/18/2020	R105_CA002_1.jpg,R105_CA002_2.jpg,R105_CA002_3.jpg	RIP RAP FOR APPROX 10 FEET AT DS END OF CULVERT	0	0	YES	NO	NO	NO	0	0	2	3	2	CONCRETE CHANNELIZATION IMMEDIATELY US, BREAKING UP
106	CA001	2/18/2020	R106_CA001.jpg	RIPRAP	4	0	YES	NO	NO	NO	0	0	4	5	1	RIP RAP ON RB AT PARKING LOT
110	CA001	2/19/2020	R110_CA001.jpg	CONCRETE WALL/GABION	10	30	YES	NO	NO	YES	0	40	3	3	1	CONCRETE WALL FOR 10' IMMEDIATELY DS OF CULVERT, THEN 20' OF GABION BASKET
111	CA001	2/19/2020	R111_CA001.jpg	GABION/RIP RAP	5	0	YES	NO	NO	YES	30	0	4	4	1	RIGHT BANK GABION BASKET ABOVE ROAD CROSSING FOR 30', THEN 50' OF RIP RAP
111	CA002	2/19/2020	R111_CA002.jpg	GABION	5	20	YES	NO	NO	NO	0	0	4	4	1	GABION ON RIGHT BANK
111	CA003	2/19/2020	R111_CA003_1.jpg,R111_CA003_2.jpg,R111_CA003_3.jpg	RIP RAP AND GABION	5	0	YES	NO	NO	NO	0	0	4	4	2	RIP RAP ON BOTH BANKS ENTIRE LENGTH BETWEEN ROAD CROSSINGS, 50 FEET SECTION OF GABION ON RIGHT BANK
111	CA004	2/19/2020	R111_CA004.jpg	RIP RAP	2	0	YES	NO	NO	NO	0	0	4	4	2	
125	CA001	2/19/2020	R125_CA001.jpg	RIP RAP	4	0	NO	NO	NO	NO	0	0	5	4	1	RIP RAP ON THIS SINGLE SEGMENT
146	CA001	3/2/2020	R146_CA001.jpg	RIP RAP AND CONCRETE	15	70	YES	NO	NO	NO	0	0	3	4	2	RIP RAP ALONG BOTTOM, THEN CONCRETE WALL 10 FT TO STABILIZE ROAD
146	CA002	3/2/2020	R146_CA002.jpg	STONE OLD STONE WALL ON RIGHT BANK	20	60	YES	NO	NO	NO	0	0	5	5	2	GABION ON LEFT BANK, 30' DS FROM ROAD CROSSING, RIP RAP 150' UPSTREAM ON RIGHT BANK FROM ROAD CROSS
156	CA001	3/2/2020	R156_CA001_1.jpg,R156_CA001_2.jpg	GABION AND RIP RAP	10	0	YES	NO	NO	YES	0	0	4	5	2	



Trash Dumping

REACH	SITE	FIELD DATE	PHOTO	TYPE	TRUCKLOADS	EXTENT	VOLUNTEER	OWNER TYPE	OWNER NAME	SEVERITY	CORRECTIBILIT	ACCESS	STREAM	TYPE DESCRIPTION
039	TD001	2/13/2020	R139_TD001.jpg	RESIDENTIAL	1	SINGLE	YES	PUBLIC	City of Aberdeen Pa	4	1	1		CANS, ALUMINUM, BOTTLES
214	TD001	3/9/2020	R214_TD001.jpg	RESIDENTIAL	3	SINGLE	NO	PRIVATE	Mt Zion UMC	2	4	1		OLD APPLIANCES

## APPENDIX B – Hot Spot Site Investigation Data Sheets

WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-1</u>	
DATE: <u>2/13/20</u>		ASSESSED BY:		CAMERA ID:	PIC#: <u>472, 473, 474</u>
MAP GRID:		LAT ____° ____' ____" LONG ____° ____' ____"		LMK #	
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Travelodge Hotel</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: <u>hotel</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input checked="" type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: _____					
B2. Approximate number of vehicles: _____					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled Washed Stored <span style="float: right;">○</span>					
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____ <span style="float: right;">○</span>					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials <span style="float: right;">●</span>					
D2. Dumpster condition (check all that apply): <input checked="" type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing <span style="float: right;">●</span>					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">●</span>					
If yes, are runoff diversion methods (berms, curbs) lacking? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>70</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged <span style="float: right;">○</span>					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <span style="float: right;">○</span>					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

A-6



WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-2</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT ___° ___' ___" LONG ___° ___' ___"		PIC#: <u>885</u>	
				LMK #	
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Aberdeen Muffler</u> <u>WORKS</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: <u>auto shop</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)				Observed Pollution Source? <input type="checkbox"/>	
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input checked="" type="checkbox"/> Other: <u>repair</u>					
B2. Approximate number of vehicles: <u>15</u>					
B3. Vehicle activities (circle all that apply): Maintained <input checked="" type="checkbox"/> Repaired <input checked="" type="checkbox"/> Recycled <input type="checkbox"/> Fueled <input type="checkbox"/> Washed <input type="checkbox"/> Stored <input type="checkbox"/>					
B4. Are vehicles stored and/or repaired outside? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Are these vehicles lacking runoff diversion methods? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)				Observed Pollution Source? <input type="checkbox"/>	
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)				Observed Pollution Source? <input type="checkbox"/>	
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are runoff diversion methods (berms, curbs) lacking? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)				Observed Pollution Source? <input type="checkbox"/>	
E1. Building: Approximate age: <u>70</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

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WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-3</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT <u>  </u> ° <u>  </u> ' <u>  </u> " LONG <u>  </u> ° <u>  </u> ' <u>  </u> "		PIC#: <u>397</u>	
LMK #					
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>One Thor</u> <u>Heating + Air Conditioning</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): <u>          </u>		Basic Description of Operation: <u>HVAC</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input checked="" type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: <u>          </u>					
B2. Approximate number of vehicles: <u>4</u>					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled Washed <u>Stored</u>					
B4. Are vehicles stored and/or repaired outside? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Are these vehicles lacking runoff diversion methods? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: <u>          </u>					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>50</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

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WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-4</u>	
DATE: <u>2/13/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT <u>  </u> ° <u>  </u> ' <u>  </u> " LONG <u>  </u> ° <u>  </u> ' <u>  </u> "		PIC#: <u>475, 476, 477</u>	
LMK #					
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Core+man</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available):		Basic Description of Operation: <u>plumbing supply store</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input checked="" type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: <u>          </u>					
B2. Approximate number of vehicles: <u>          </u>					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled Washed Stored <span style="float: right;">○</span>					
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
<b>C. OUTDOOR MATERIALS</b> <input type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">●</span>					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">●</span>					
C2. Are materials stored outside? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid Description: <u>          </u> <span style="float: right;">●</span>					
Where are they stored? <input type="checkbox"/> grass/dirt area <input checked="" type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C5. Does outdoor storage area lack a cover? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">●</span>					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials <span style="float: right;">●</span>					
D2. Dumpster condition (check all that apply): <input checked="" type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing <span style="float: right;">●</span>					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>80</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged <span style="float: right;">○</span>					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <span style="float: right;">○</span>					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

A-6



WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-5</u>	
DATE: <u>2/13/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT ____° ____' ____" LONG ____° ____' ____"		PIC#: <u>478</u>	
LMK #					
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>North End Impact Service</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: <u>car shop</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)				Observed Pollution Source? <input type="checkbox"/>	
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input checked="" type="checkbox"/> Other: <u>repair shop</u>					
B2. Approximate number of vehicles: <u>6</u>					
B3. Vehicle activities (circle all that apply): Maintained <input type="checkbox"/> <u>Repaired</u> <input type="checkbox"/> Recycled <input type="checkbox"/> Fueled <input type="checkbox"/> Washed <input type="checkbox"/> Stored <input checked="" type="radio"/>					
B4. Are vehicles stored and/or repaired outside? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input checked="" type="radio"/>					
Are these vehicles lacking runoff diversion methods? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input checked="" type="radio"/>					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)				Observed Pollution Source? <input type="checkbox"/>	
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area <input type="radio"/>					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)				Observed Pollution Source? <input type="checkbox"/>	
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials <input checked="" type="radio"/>					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing <input type="radio"/>					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <input type="radio"/>					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)				Observed Pollution Source? <input type="checkbox"/>	
E1. Building: Approximate age: <u>50</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged <input type="radio"/>					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <input type="radio"/>					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)





WATERSHED: <u>Abideen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-6</u>	
DATE: <u>2/13/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT <u>  </u> ° <u>  </u> ' <u>  </u> " LONG <u>  </u> ° <u>  </u> ' <u>  </u> "		PIC#: <u>480</u>	
LMK #					
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Chesapeake Bay</u> <u>Dental, S.A. Bham, MD.</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): <u>          </u>		Basic Description of Operation: <u>dentist + doctor</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input checked="" type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: <u>          </u>					
B2. Approximate number of vehicles: <u>          </u>					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled Washed Stored <span style="float: right;">○</span>					
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: <u>          </u> <span style="float: right;">○</span>					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
<b>D. WASTE MANAGEMENT</b> <input checked="" type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials <span style="float: right;">○</span>					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing <span style="float: right;">○</span>					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>40</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged <span style="float: right;">○</span>					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <span style="float: right;">○</span>					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

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WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-7</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	PIC#: <u>380,381</u>
MAP GRID:		LAT ____° ____' ____" LONG ____° ____' ____"			LMK #
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Unique Car Wash / Scott's Transportation</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: _____			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<u>car wash</u>			
					<b>INDEX*</b>
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input checked="" type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: <u>car wash / transportation</u>					
B2. Approximate number of vehicles: <u>4</u>					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled <u>Washed</u> Stored					
B4. Are vehicles stored and/or repaired outside? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Are these vehicles lacking runoff diversion methods? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B8. Are vehicles washed outdoors? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Does the area where vehicles are washed discharge to the storm drain? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>80</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

Urban Subwatershed Restoration Manual



WATERSHED: <u>Abbeeden</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-8</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT ____ ° ____ ' ____ " LONG ____ ° ____ ' ____ "		PIC#: <u>378,379</u>	
				LMK #	
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Mr. Tire</u>		Category: <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: <u>tire store</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)				Observed Pollution Source? <input type="checkbox"/>	
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: <u>auto service</u>					
B2. Approximate number of vehicles: <u>10</u>					
B3. Vehicle activities (circle all that apply): Maintained <input checked="" type="checkbox"/> Repaired <input checked="" type="checkbox"/> Recycled <input type="checkbox"/> Fueled <input type="checkbox"/> Washed <input type="checkbox"/> Stored <input type="checkbox"/>					
B4. Are vehicles stored and/or repaired outside? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Are these vehicles lacking runoff diversion methods? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)				Observed Pollution Source? <input type="checkbox"/>	
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)				Observed Pollution Source? <input type="checkbox"/>	
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					
D3. Is the dumpster located near a storm drain inlet? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)				Observed Pollution Source? <input type="checkbox"/>	
E1. Building: Approximate age: <u>60</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

<b>E2. Parking Lot:</b> Approximate age <u>20</u> yrs. Condition: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up Surface material <input checked="" type="checkbox"/> Paved/Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Permeable <input type="checkbox"/> Don't know		●
<b>E3. Do downspouts discharge to impervious surface?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <input type="checkbox"/> None visible Are downspouts directly connected to storm drains? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know		●
<b>E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F. TURF/LANDSCAPING AREAS</b> <input type="checkbox"/> N/A (skip to part G)		Observed Pollution Source?
<b>F1. % of site with:</b> Forest canopy ____% Turf grass <u>00</u> % Landscaping ____% Bare Soil ____%		○
<b>F2. Rate the turf management status:</b> <input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low		○
<b>F3. Evidence of permanent irrigation or "non-target" irrigation</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F4. Do landscaped areas drain to the storm drain system?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		●
<b>F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>G. STORM WATER INFRASTRUCTURE</b> <input type="checkbox"/> N/A (skip to part H)		Observed Pollution Source?
<b>G1. Are storm water treatment practices present?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, please describe: _____		●
<b>G2. Are private storm drains located at the facility?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Unknown Is trash present in gutters leading to storm drains? If so, complete the index below.		○
Index Rating for Accumulation in Gutters		
	Clean	Filthy
Sediment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Organic material	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Litter	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
<b>G3. Catch basin inspection – Record SSD Unique Site ID here:</b> _____ Condition: <input type="checkbox"/> Dirty <input type="checkbox"/> Clean		
<b>H. INITIAL HOTSPOT STATUS - INDEX RESULTS</b>		
<input type="checkbox"/> Not a hotspot (fewer than 5 circles and no boxes checked) <input checked="" type="checkbox"/> Potential hotspot (5 to 10 circles but no boxes checked) <input type="checkbox"/> Confirmed hotspot (10 to 15 circles and/or 1 box checked) <input type="checkbox"/> Severe hotspot (>15 circles and/or 2 or more boxes checked)		
<b>Follow-up Action:</b> <input type="checkbox"/> Refer for immediate enforcement <input type="checkbox"/> Suggest follow-up on-site inspection <input type="checkbox"/> Test for illicit discharge <input type="checkbox"/> Include in future education effort <input type="checkbox"/> Check to see if hotspot is an NPDES non-filer <input type="checkbox"/> Onsite non-residential retrofit <input type="checkbox"/> Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____ <input type="checkbox"/> Schedule a review of storm water pollution prevention plan		
<b>Notes:</b>  NO ROOM FOR SW BMP		



WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>Hsl-9</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT <u>  </u> ° <u>  </u> ' <u>  </u> " LONG <u>  </u> ° <u>  </u> ' <u>  </u> "		PIC#: <u>382, 383</u>	
				LMK #	
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Scoop's</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): <u>  </u>		Basic Description of Operation: <u>restaurant / ice cream shop</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input checked="" type="checkbox"/> N/A (Skip to part C)				Observed Pollution Source? <input type="checkbox"/>	
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: <u>  </u>					
B2. Approximate number of vehicles: <u>  </u>					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled Washed Stored <span style="float:right">○</span>					
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)				Observed Pollution Source? <input type="checkbox"/>	
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: <u>  </u> <span style="float:right">○</span>					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)				Observed Pollution Source? <input type="checkbox"/>	
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials <span style="float:right">●</span>					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing <span style="float:right">○</span>					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)				Observed Pollution Source? <input type="checkbox"/>	
E1. Building: Approximate age: <u>80</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged <span style="float:right">○</span>					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <span style="float:right">○</span>					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

Urban Subwatershed Restoration Manual



WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-10</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT ____° ____' ____" LONG ____° ____' ____"		PIC#: <u>384,385</u>	
LMK #					
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Szechuan Inn</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: <u>restaurant</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input checked="" type="checkbox"/> N/A (Skip to part C)				Observed Pollution Source? <input type="checkbox"/>	
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: _____					
B2. Approximate number of vehicles: _____					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled Washed Stored <span style="float:right">○</span>					
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)				Observed Pollution Source? <input type="checkbox"/>	
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____ <span style="float:right">○</span>					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)				Observed Pollution Source? <input type="checkbox"/>	
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials <span style="float:right">●</span>					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing <span style="float:right">○</span>					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">●</span>					
If yes, are runoff diversion methods (berms, curbs) lacking? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)				Observed Pollution Source? <input type="checkbox"/>	
E1. Building: Approximate age: <u>70</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged <span style="float:right">○</span>					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <span style="float:right">○</span>					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

<b>E2. Parking Lot:</b> Approximate age <u>30</u> yrs. Condition: <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input checked="" type="checkbox"/> Breaking up Surface material <input checked="" type="checkbox"/> Paved/Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Permeable <input type="checkbox"/> Don't know		●
<b>E3. Do downspouts discharge to impervious surface?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know <input type="checkbox"/> None visible Are downspouts directly connected to storm drains? <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <u>FRONT HALF CONNECTED</u>		●
<b>E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F. TURF/LANDSCAPING AREAS</b> <input checked="" type="checkbox"/> N/A (skip to part G)		○
<b>F1. % of site with:</b> Forest canopy ____% Turf grass ____% Landscaping ____% Bare Soil ____%		○
<b>F2. Rate the turf management status:</b> <input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low		○
<b>F3. Evidence of permanent irrigation or "non-target" irrigation</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F4. Do landscaped areas drain to the storm drain system?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>G. STORM WATER INFRASTRUCTURE</b> <input type="checkbox"/> N/A (skip to part H)		○
<b>G1. Are storm water treatment practices present?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, please describe: _____		●
<b>G2. Are private storm drains located at the facility?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Unknown Is trash present in gutters leading to storm drains? If so, complete the index below.		○
Index Rating for Accumulation in Gutters		
	Clean	Filthy
Sediment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Organic material	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Litter	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
<b>G3. Catch basin inspection – Record SSD Unique Site ID here:</b> _____ Condition: <input type="checkbox"/> Dirty <input type="checkbox"/> Clean		
<b>H. INITIAL HOTSPOT STATUS - INDEX RESULTS</b>		
<input type="checkbox"/> Not a hotspot (fewer than 5 circles and no boxes checked) <input checked="" type="checkbox"/> Potential hotspot (5 to 10 circles but no boxes checked) <input type="checkbox"/> Confirmed hotspot (10 to 15 circles and/or 1 box checked) <input type="checkbox"/> Severe hotspot (>15 circles and/or 2 or more boxes checked)		
<b>Follow-up Action:</b> <input type="checkbox"/> Refer for immediate enforcement <input type="checkbox"/> Suggest follow-up on-site inspection <input type="checkbox"/> Test for illicit discharge <input type="checkbox"/> Include in future education effort <input type="checkbox"/> Check to see if hotspot is an NPDES non-filer <input type="checkbox"/> Onsite non-residential retrofit <input type="checkbox"/> Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____ <input type="checkbox"/> Schedule a review of storm water pollution prevention plan		
<b>Notes:</b>  <div style="font-family: cursive; font-size: 1.2em; margin-top: 20px;">NO ROOM FOR SWM</div>		



WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>HSI-11</u>	
DATE: <u>2/10/20</u>	ASSESSED BY:	CAMERA ID:	PICTURE#: <u>386, 387, 388</u>
MAP GRID:	LAT ____ ° ____ ' ____ " LONG ____ ° ____ ' ____ "		LMK #
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>			
Name and Address: <u>Pat's Pizza</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility	
SIC code (if available): _____		Basic Description of Operation: <u>restaurant</u>	
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>	
<b>B. VEHICLE OPERATIONS</b> <input checked="" type="checkbox"/> N/A (Skip to part C)			Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: _____			
B2. Approximate number of vehicles: _____			
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled Washed Stored <span style="float:right">○</span>			
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)			Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____ <span style="float:right">○</span>			
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area			
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)			Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials <span style="float:right">●</span>			
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing <span style="float:right">○</span>			
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>			
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)			Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>5</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged <span style="float:right">○</span>			
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <span style="float:right">○</span>			

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)



<b>E2. Parking Lot:</b> Approximate age <u>5</u> yrs. Condition: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up Surface material <input checked="" type="checkbox"/> Paved/Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Permeable <input type="checkbox"/> Don't know		●
<b>E3. Do downspouts discharge to impervious surface?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know <input type="checkbox"/> None visible Are downspouts directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know		●
<b>E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F. TURF/LANDSCAPING AREAS</b> <input type="checkbox"/> N/A (skip to part G)		Observed Pollution Source?
<b>F1. % of site with:</b> Forest canopy ____% Turf grass ____% Landscaping <u>100</u> % Bare Soil ____%		○
<b>F2. Rate the turf management status:</b> <input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low		○
<b>F3. Evidence of permanent irrigation or "non-target" irrigation</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F4. Do landscaped areas drain to the storm drain system?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		●
<b>F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>G. STORM WATER INFRASTRUCTURE</b> <input type="checkbox"/> N/A (skip to part H)		Observed Pollution Source?
<b>G1. Are storm water treatment practices present?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, please describe: _____		●
<b>G2. Are private storm drains located at the facility?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown Is trash present in gutters leading to storm drains? If so, complete the index below.		○
Index Rating for Accumulation in Gutters		
	Clean	Filthy
Sediment	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Organic material	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Litter	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
<b>G3. Catch basin inspection – Record SSD Unique Site ID here:</b> _____ Condition: <input type="checkbox"/> Dirty <input type="checkbox"/> Clean		
<b>H. INITIAL HOTSPOT STATUS - INDEX RESULTS</b>		
<input type="checkbox"/> Not a hotspot (fewer than 5 circles and no boxes checked) <input checked="" type="checkbox"/> Potential hotspot (5 to 10 circles but no boxes checked) <input type="checkbox"/> Confirmed hotspot (10 to 15 circles and/or 1 box checked) <input type="checkbox"/> Severe hotspot (>15 circles and/or 2 or more boxes checked)		
<b>Follow-up Action:</b> <input type="checkbox"/> Refer for immediate enforcement <input type="checkbox"/> Suggest follow-up on-site inspection <input type="checkbox"/> Test for illicit discharge <input type="checkbox"/> Include in future education effort <input type="checkbox"/> Check to see if hotspot is an NPDES non-filer <input type="checkbox"/> Onsite non-residential retrofit <input type="checkbox"/> Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____ <input type="checkbox"/> Schedule a review of storm water pollution prevention plan		
<b>Notes:</b>  NO ROOM FOR SWM, ENTIRE LOT DRAINS TO FRONT OF PROP TO INLET		

WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-12</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	PIC#: <u>389.390</u>
MAP GRID:		LAT ____ ° ____ ' ____ " LONG ____ ° ____ ' ____ "			LMK #
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Danino's</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: <u>restaurants</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input checked="" type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: _____					
B2. Approximate number of vehicles: _____					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled Washed Stored <span style="float:right">○</span>					
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____ <span style="float:right">○</span>					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">○</span>					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials <span style="float:right">●</span>					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing <span style="float:right">○</span>					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float:right">●</span>					
If yes, are runoff diversion methods (berms, curbs) lacking? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>50</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged <span style="float:right">○</span>					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <span style="float:right">○</span>					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)



<b>E2. Parking Lot:</b> Approximate age <u>20</u> yrs. Condition: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up Surface material <input checked="" type="checkbox"/> Paved/Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Permeable <input type="checkbox"/> Don't know		●
<b>E3. Do downspouts discharge to impervious surface?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know <input type="checkbox"/> None visible Are downspouts directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know		●
<b>E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F. TURF/LANDSCAPING AREAS</b> <input checked="" type="checkbox"/> N/A (skip to part G)		<b>Observed Pollution Source?</b>
<b>F1. % of site with:</b> Forest canopy ____% Turf grass ____% Landscaping ____% Bare Soil ____%		○
<b>F2. Rate the turf management status:</b> <input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low		○
<b>F3. Evidence of permanent irrigation or "non-target" irrigation</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F4. Do landscaped areas drain to the storm drain system?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>G. STORM WATER INFRASTRUCTURE</b> <input type="checkbox"/> N/A (skip to part H)		<b>Observed Pollution Source?</b>
<b>G1. Are storm water treatment practices present?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, please describe: _____		●
<b>G2. Are private storm drains located at the facility?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown Is trash present in gutters leading to storm drains? If so, complete the index below.		○
Index Rating for Accumulation in Gutters		
	Clean	Filthy
Sediment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Organic material	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Litter	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
<b>G3. Catch basin inspection – Record SSD Unique Site ID here:</b> _____ Condition: <input type="checkbox"/> Dirty <input type="checkbox"/> Clean		
<b>H. INITIAL HOTSPOT STATUS - INDEX RESULTS</b>		
<input type="checkbox"/> Not a hotspot (fewer than 5 circles and no boxes checked) <input checked="" type="checkbox"/> Potential hotspot (5 to 10 circles but no boxes checked)		
<input type="checkbox"/> Confirmed hotspot (10 to 15 circles and/or 1 box checked) <input type="checkbox"/> Severe hotspot (>15 circles and/or 2 or more boxes checked)		
<b>Follow-up Action:</b> <input type="checkbox"/> Refer for immediate enforcement <input type="checkbox"/> Suggest follow-up on-site inspection <input type="checkbox"/> Test for illicit discharge <input type="checkbox"/> Include in future education effort <input type="checkbox"/> Check to see if hotspot is an NPDES non-filer <input type="checkbox"/> Onsite non-residential retrofit <input type="checkbox"/> Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____ <input type="checkbox"/> Schedule a review of storm water pollution prevention plan		
<b>Notes:</b>  NO ROOM FOR SWM		

WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-13</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT <u>  </u> ° <u>  </u> ' <u>  </u> " LONG <u>  </u> ° <u>  </u> ' <u>  </u> "		PIC#: <u>391,392</u>	
LMK #					
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Asho Car Wash</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): <u>          </u>		Basic Description of Operation: <u>car wash</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input checked="" type="checkbox"/> Other: <u>car wash</u>					
B2. Approximate number of vehicles: <u>0</u>					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled <u>Washed</u> Stored					
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: <u>          </u>					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are runoff diversion methods (berms, curbs) lacking? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>60</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)



<b>E2. Parking Lot:</b> Approximate age <u>20</u> yrs. Condition: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up Surface material <input checked="" type="checkbox"/> Paved/Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Permeable <input type="checkbox"/> Don't know	●
<b>E3. Do downspouts discharge to impervious surface?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know <input type="checkbox"/> None visible Are downspouts directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know	●
<b>E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell	○
<b>F. TURF/LANDSCAPING AREAS</b> <input type="checkbox"/> N/A (skip to part G)	Observed Pollution Source?
<b>F1. % of site with:</b> Forest canopy ____% Turf grass <u>100</u> % Landscaping ____% Bare Soil ____%	○
<b>F2. Rate the turf management status:</b> <input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	○
<b>F3. Evidence of permanent irrigation or "non-target" irrigation</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell	○
<b>F4. Do landscaped areas drain to the storm drain system?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell	○
<b>F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell	○
<b>G. STORM WATER INFRASTRUCTURE</b> <input type="checkbox"/> N/A (skip to part H)	Observed Pollution Source?
<b>G1. Are storm water treatment practices present?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, please describe: _____	●
<b>G2. Are private storm drains located at the facility?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown Is trash present in gutters leading to storm drains? If so, complete the index below.	○
Index Rating for Accumulation in Gutters	
	Clean
Sediment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
Organic material	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
Litter	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
<b>G3. Catch basin inspection – Record SSD Unique Site ID here:</b> _____ Condition: <input type="checkbox"/> Dirty <input type="checkbox"/> Clean	
<b>H. INITIAL HOTSPOT STATUS - INDEX RESULTS</b>	
<input type="checkbox"/> Not a hotspot (fewer than 5 circles and no boxes checked) <input checked="" type="checkbox"/> Potential hotspot (5 to 10 circles but no boxes checked)	
<input type="checkbox"/> Confirmed hotspot (10 to 15 circles and/or 1 box checked) <input type="checkbox"/> Severe hotspot (>15 circles and/or 2 or more boxes checked)	
<b>Follow-up Action:</b> <input type="checkbox"/> Refer for immediate enforcement <input type="checkbox"/> Suggest follow-up on-site inspection <input type="checkbox"/> Test for illicit discharge <input type="checkbox"/> Include in future education effort <input type="checkbox"/> Check to see if hotspot is an NPDES non-filer <input type="checkbox"/> Onsite non-residential retrofit <input type="checkbox"/> Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____ <input type="checkbox"/> Schedule a review of storm water pollution prevention plan	
<b>Notes:</b>  NO ROOM FOR SW BMP	

WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-14</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT <u>  </u> ° <u>  </u> ' <u>  </u> " LONG <u>  </u> ° <u>  </u> ' <u>  </u> "		PIC#: <u>393</u>	
LMK #					
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>1 Eleven</u>		Category: <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): <u>          </u>		Basic Description of Operation: <u>gas station</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: <u>          </u>					
B2. Approximate number of vehicles: <u>          </u>					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled <u>Fueled</u> Washed Stored					●
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: <u>          </u>					○
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					○
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					●
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					○
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					●
If yes, are runoff diversion methods (berms, curbs) lacking? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>60</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					○
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					○

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)



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WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-15</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT <u>  </u> ° <u>  </u> ' <u>  </u> " LONG <u>  </u> ° <u>  </u> ' <u>  </u> "		PIC#: <u>394,395</u>	
LMK #					
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Maaco Body Shop</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): <u>          </u>		Basic Description of Operation: <u>auto body shop</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input checked="" type="checkbox"/> Other: <u>          </u>					
B2. Approximate number of vehicles: <u>          </u>					
B3. Vehicle activities (circle all that apply): Maintained <input type="checkbox"/> Repaired <input checked="" type="checkbox"/> Recycled <input type="checkbox"/> Fueled <input type="checkbox"/> Washed <input type="checkbox"/> Stored <input type="checkbox"/>					<input checked="" type="radio"/>
B4. Are vehicles stored and/or repaired outside? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input checked="" type="radio"/>
Are these vehicles lacking runoff diversion methods? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input type="radio"/>
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input type="radio"/>
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input type="radio"/>
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input type="radio"/>
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input type="radio"/>
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: <u>          </u>					<input type="radio"/>
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input type="radio"/>
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input type="radio"/>
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input type="radio"/>
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input type="radio"/>
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input type="radio"/>
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input checked="" type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					<input checked="" type="radio"/>
D2. Dumpster condition (check all that apply): <input checked="" type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					<input checked="" type="radio"/>
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					<input checked="" type="radio"/>
If yes, are runoff diversion methods (berms, curbs) lacking? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>50</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					<input type="radio"/>
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					<input type="radio"/>

\*Index: ☐ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

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WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>16</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	PIC#: <u>370,371,372</u>
MAP GRID:		LAT ____ ° ____ ' ____ " LONG ____ ° ____ ' ____ "			LMK #
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Thompson's</u> <u>Auto Repair Center / Budget</u> <u>Rental</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: <u>auto repair</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input checked="" type="checkbox"/> Other: <u>auto repair / truck rental</u>					
B2. Approximate number of vehicles: <u>30</u>					
B3. Vehicle activities (circle all that apply): <u>Maintained</u> <u>Repaired</u> <input type="checkbox"/> Recycled <u>Fueled</u> <input type="checkbox"/> Washed <u>Stored</u>					
B4. Are vehicles stored and/or repaired outside? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Are these vehicles lacking runoff diversion methods? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B8. Are vehicles washed outdoors? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Does the area where vehicles are washed discharge to the storm drain? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>40</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					
Evidence that maintenance results in discharge to storm drains (staining/dyscoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

<b>E2. Parking Lot:</b> Approximate age <u>10</u> yrs. Condition: <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up Surface material <input checked="" type="checkbox"/> Paved/Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Permeable <input type="checkbox"/> Don't know		●
<b>E3. Do downspouts discharge to impervious surface?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know <input type="checkbox"/> None visible Are downspouts directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know		○
<b>E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F. TURF/LANDSCAPING AREAS</b> <input checked="" type="checkbox"/> N/A (skip to part G)		Observed Pollution Source?
<b>F1. % of site with:</b> Forest canopy ____% Turf grass ____% Landscaping ____% Bare Soil ____%		○
<b>F2. Rate the turf management status:</b> <input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low		○
<b>F3. Evidence of permanent irrigation or "non-target" irrigation</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F4. Do landscaped areas drain to the storm drain system?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>G. STORM WATER INFRASTRUCTURE</b> <input type="checkbox"/> N/A (skip to part H)		Observed Pollution Source?
<b>G1. Are storm water treatment practices present?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, please describe: _____		●
<b>G2. Are private storm drains located at the facility?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown Is trash present in gutters leading to storm drains? If so, complete the index below.		○
Index Rating for Accumulation in Gutters		
	Clean	Filthy
Sediment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 5
Organic material	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 5
Litter	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 5
<b>G3. Catch basin inspection – Record SSD Unique Site ID here:</b> _____ Condition: <input type="checkbox"/> Dirty <input type="checkbox"/> Clean		
<b>H. INITIAL HOTSPOT STATUS - INDEX RESULTS</b>		
<input type="checkbox"/> Not a hotspot (fewer than 5 circles and no boxes checked) <input checked="" type="checkbox"/> Potential hotspot (5 to 10 circles but no boxes checked) <input type="checkbox"/> Confirmed hotspot (10 to 15 circles and/or 1 box checked) <input type="checkbox"/> Severe hotspot (>15 circles and/or 2 or more boxes checked)		
<b>Follow-up Action:</b> <input type="checkbox"/> Refer for immediate enforcement <input type="checkbox"/> Suggest follow-up on-site inspection <input type="checkbox"/> Test for illicit discharge <input type="checkbox"/> Include in future education effort <input type="checkbox"/> Check to see if hotspot is an NPDES non-filer <input type="checkbox"/> Onsite non-residential retrofit <input type="checkbox"/> Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____ <input type="checkbox"/> Schedule a review of storm water pollution prevention plan		
<b>Notes:</b> LOW PRIORITY REVISIT CONVERT DITCH TO BMP?		



WATERSHED: <u>Aberden</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-17</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT ____° ____' ____" LONG ____° ____' ____"		PIC#: <u>373</u>	
				LMK #	
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Sunoco</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: <u>gas station</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: _____					
B2. Approximate number of vehicles: _____					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled <u>Fueled</u> Washed Stored					
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					
D3. Is the dumpster located near a storm drain inlet? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are runoff diversion methods (berms, curbs) lacking? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>50</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

<b>E2. Parking Lot:</b> Approximate age <u>15</u> yrs. Condition: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up Surface material <input checked="" type="checkbox"/> Paved/Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Permeable <input type="checkbox"/> Don't know		●
<b>E3. Do downspouts discharge to impervious surface?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know <input type="checkbox"/> None visible Are downspouts directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know		●
<b>E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F. TURF/LANDSCAPING AREAS</b> <input type="checkbox"/> N/A (skip to part G)		Observed Pollution Source? <input type="text"/>
<b>F1. % of site with:</b> Forest canopy ____% Turf grass ____% Landscaping <u>100</u> % Bare Soil ____%		○
<b>F2. Rate the turf management status:</b> <input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low		○
<b>F3. Evidence of permanent irrigation or "non-target" irrigation</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F4. Do landscaped areas drain to the storm drain system?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		●
<b>F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		●
<b>G. STORM WATER INFRASTRUCTURE</b> <input checked="" type="checkbox"/> N/A (skip to part H)		Observed Pollution Source? <input type="text"/>
<b>G1. Are storm water treatment practices present?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, please describe: _____		●
<b>G2. Are private storm drains located at the facility?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Unknown Is trash present in gutters leading to storm drains? If so, complete the index below.		○
Index Rating for Accumulation in Gutters		
	Clean	Filthy
Sediment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Organic material	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Litter	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
<b>G3. Catch basin inspection – Record SSD Unique Site ID here:</b> _____ Condition: <input type="checkbox"/> Dirty <input type="checkbox"/> Clean		
<b>H. INITIAL HOTSPOT STATUS - INDEX RESULTS</b>		
<input type="checkbox"/> Not a hotspot (fewer than 5 circles and no boxes checked) <input checked="" type="checkbox"/> Potential hotspot (5 to 10 circles but no boxes checked) <input type="checkbox"/> Confirmed hotspot (10 to 15 circles and/or 1 box checked) <input type="checkbox"/> Severe hotspot (>15 circles and/or 2 or more boxes checked)		
<b>Follow-up Action:</b> <input type="checkbox"/> Refer for immediate enforcement <input type="checkbox"/> Suggest follow-up on-site inspection <input type="checkbox"/> Test for illicit discharge <input type="checkbox"/> Include in future education effort <input type="checkbox"/> Check to see if hotspot is an NPDES non-filer <input type="checkbox"/> Onsite non-residential retrofit <input type="checkbox"/> Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____ <input type="checkbox"/> Schedule a review of storm water pollution prevention plan		
<b>Notes:</b> DRAINS TO SAME DITCH AS HSI-17, THOMPSON'S AUTO LOW PRIORITY REVISIT		



WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>HSI-18</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT ____° ____' ____" LONG ____° ____' ____"		PIC#: <u>376.377</u>	
				LMK #	
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Aberdeen Used Tires</u>		Category:		<input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility	
SIC code (if available): _____		Basic Description of Operation: <u>used tires sales</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)				Observed Pollution Source? <input type="checkbox"/>	
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: <u>tire sales</u>					
B2. Approximate number of vehicles: <u>3</u>					
B3. Vehicle activities (circle all that apply): Maintained <input checked="" type="checkbox"/> <u>Repaired</u> Recycled   Fueled   Washed   Stored					
B4. Are vehicles stored and/or repaired outside? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Are these vehicles lacking runoff diversion methods? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)				Observed Pollution Source? <input type="checkbox"/>	
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell   If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid   Description: _____					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)				Observed Pollution Source? <input type="checkbox"/>	
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are runoff diversion methods (berms, curbs) lacking? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)				Observed Pollution Source? <input type="checkbox"/>	
E1. Building: Approximate age: <u>60</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

E2. Parking Lot: Approximate age <u>20</u> yrs. Condition: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up Surface material <input checked="" type="checkbox"/> Paved/Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Permeable <input type="checkbox"/> Don't know		●
E3. Do downspouts discharge to impervious surface? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know <input type="checkbox"/> None visible Are downspouts directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know		●
E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
F. TURF/LANDSCAPING AREAS <input type="checkbox"/> N/A (skip to part G)		Observed Pollution Source? <input type="text"/>
F1. % of site with: Forest canopy ____% Turf grass <u>100</u> % Landscaping ____% Bare Soil ____%		○
F2. Rate the turf management status: <input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low		○
F3. Evidence of permanent irrigation or "non-target" irrigation <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
F4. Do landscaped areas drain to the storm drain system? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
G. STORM WATER INFRASTRUCTURE <input type="checkbox"/> N/A (skip to part H)		Observed Pollution Source? <input type="text"/>
G1. Are storm water treatment practices present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, please describe: _____		●
G2. Are private storm drains located at the facility? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown Is trash present in gutters leading to storm drains? If so, complete the index below.		○
Index Rating for Accumulation in Gutters		
	Clean	Filthy
Sediment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Organic material	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Litter	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
G3. Catch basin inspection – Record SSD Unique Site ID here: _____ Condition: <input type="checkbox"/> Dirty <input type="checkbox"/> Clean		
H. INITIAL HOTSPOT STATUS - INDEX RESULTS		
<input type="checkbox"/> Not a hotspot (fewer than 5 circles and no boxes checked) <input checked="" type="checkbox"/> Potential hotspot (5 to 10 circles but no boxes checked) <input type="checkbox"/> Confirmed hotspot (10 to 15 circles and/or 1 box checked) <input type="checkbox"/> Severe hotspot (>15 circles and/or 2 or more boxes checked)		
<b>Follow-up Action:</b> <input type="checkbox"/> Refer for immediate enforcement <input type="checkbox"/> Suggest follow-up on-site inspection <input type="checkbox"/> Test for illicit discharge <input type="checkbox"/> Include in future education effort <input type="checkbox"/> Check to see if hotspot is an NPDES non-filer <input type="checkbox"/> Onsite non-residential retrofit <input type="checkbox"/> Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____ <input type="checkbox"/> Schedule a review of storm water pollution prevention plan		
<b>Notes:</b>  <div style="font-family: cursive; font-size: 1.2em;">NO ROOM DOWNGRAIENT FOR BMP</div>		



WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>19</u>	
DATE: <u>2/10/20</u>		ASSESSED BY:		CAMERA ID:	
MAP GRID:		LAT ____° ____' ____" LONG ____° ____' ____"		PIC#: <u>374.375</u>	
LMK #					
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Aberdeen Diner</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: <u>restaurant</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input checked="" type="checkbox"/> N/A (Skip to part C)					Observed Pollution Source? <input type="checkbox"/>
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input type="checkbox"/> Other: _____					
B2. Approximate number of vehicles: _____					
B3. Vehicle activities (circle all that apply): Maintained Repaired Recycled Fueled Washed Stored <span style="float: right;">○</span>					
B4. Are vehicles stored and/or repaired outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
Are these vehicles lacking runoff diversion methods? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)					Observed Pollution Source? <input type="checkbox"/>
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____ <span style="float: right;">○</span>					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)					Observed Pollution Source? <input type="checkbox"/>
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials <span style="float: right;">●</span>					
D2. Dumpster condition (check all that apply): <input type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing <span style="float: right;">○</span>					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell <span style="float: right;">○</span>					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)					Observed Pollution Source? <input type="checkbox"/>
E1. Building: Approximate age: <u>80</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged <span style="float: right;">○</span>					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know <span style="float: right;">○</span>					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

<b>E2. Parking Lot:</b> Approximate age <u>20</u> yrs. Condition: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up Surface material <input checked="" type="checkbox"/> Paved/Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Permeable <input type="checkbox"/> Don't know		●
<b>E3. Do downspouts discharge to impervious surface?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know <input type="checkbox"/> None visible Are downspouts directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know		●
<b>E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F. TURF/LANDSCAPING AREAS</b> <input checked="" type="checkbox"/> N/A (skip to part G)		○
<b>F1. % of site with:</b> Forest canopy ____% Turf grass ____% Landscaping ____% Bare Soil ____%		○
<b>F2. Rate the turf management status:</b> <input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low		○
<b>F3. Evidence of permanent irrigation or "non-target" irrigation</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F4. Do landscaped areas drain to the storm drain system?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface?</b> <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>G. STORM WATER INFRASTRUCTURE</b> <input type="checkbox"/> N/A (skip to part H)		○
<b>G1. Are storm water treatment practices present?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, please describe: _____		●
<b>G2. Are private storm drains located at the facility?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown Is trash present in gutters leading to storm drains? If so, complete the index below.		○
Index Rating for Accumulation in Gutters		
	Clean	Filthy
Sediment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Organic material	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Litter	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
<b>G3. Catch basin inspection – Record SSD Unique Site ID here:</b> _____ Condition: <input type="checkbox"/> Dirty <input type="checkbox"/> Clean		
<b>H. INITIAL HOTSPOT STATUS - INDEX RESULTS</b>		
<input checked="" type="checkbox"/> Not a hotspot (fewer than 5 circles and no boxes checked) <input type="checkbox"/> Potential hotspot (5 to 10 circles but no boxes checked) <input type="checkbox"/> Confirmed hotspot (10 to 15 circles and/or 1 box checked) <input type="checkbox"/> Severe hotspot (>15 circles and/or 2 or more boxes checked)		
<b>Follow-up Action:</b> <input type="checkbox"/> Refer for immediate enforcement <input type="checkbox"/> Suggest follow-up on-site inspection <input type="checkbox"/> Test for illicit discharge <input type="checkbox"/> Include in future education effort <input type="checkbox"/> Check to see if hotspot is an NPDES non-filer <input type="checkbox"/> Onsite non-residential retrofit <input type="checkbox"/> Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____ <input type="checkbox"/> Schedule a review of storm water pollution prevention plan		
<b>Notes:</b>		



<b>WATERSHED:</b> <u>Aberdeen</u>		<b>SUBWATERSHED:</b>		<b>UNIQUE SITE ID:</b> <u>HSI-20</u>	
<b>DATE:</b> <u>2/10/20</u>		<b>ASSESSED BY:</b> <u>SB/AB</u>		<b>CAMERA ID:</b>	
<b>MAP GRID:</b>		<b>LAT</b> ____ ° ____ ' ____ " <b>LONG</b> ____ ° ____ ' ____ "		<b>PIC#:</b> <u>367,368,369</u>	
<b>MAP GRID:</b>				<b>LMK #</b>	
<b>A. SITE DATA AND BASIC CLASSIFICATION</b>					
Name and Address: <u>Calber Collision</u>		Category: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Institutional <input type="checkbox"/> Municipal <input type="checkbox"/> Golf Course <input type="checkbox"/> Transport-Related <input type="checkbox"/> Marina <input type="checkbox"/> Animal Facility			
SIC code (if available): _____		Basic Description of Operation: <u>auto body shop</u>			
NPDES Status: <input type="checkbox"/> Regulated <input type="checkbox"/> Unregulated <input type="checkbox"/> Unknown		<b>INDEX*</b>			
<b>B. VEHICLE OPERATIONS</b> <input type="checkbox"/> N/A (Skip to part C)				<b>Observed Pollution Source?</b> <input type="checkbox"/>	
B1. Types of vehicles: <input type="checkbox"/> Fleet vehicles <input type="checkbox"/> School buses <input checked="" type="checkbox"/> Other: <u>auto body shop</u>					
B2. Approximate number of vehicles: <u>20</u>					
B3. Vehicle activities (circle all that apply): Maintained <input checked="" type="checkbox"/> <u>Repaired</u> Recycled Fueled Washed Stored					
B4. Are vehicles stored and/or repaired outside? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Are these vehicles lacking runoff diversion methods? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B5. Is there evidence of spills/leakage from vehicles? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B6. Are uncovered outdoor fueling areas present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B7. Are fueling areas directly connected to storm drains? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
B8. Are vehicles washed outdoors? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					
Does the area where vehicles are washed discharge to the storm drain? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>C. OUTDOOR MATERIALS</b> <input checked="" type="checkbox"/> N/A (Skip to part D)				<b>Observed Pollution Source?</b> <input type="checkbox"/>	
C1. Are loading/unloading operations present? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are they uncovered and draining towards a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C2. Are materials stored outside? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell If yes, are they <input type="checkbox"/> Liquid <input type="checkbox"/> Solid Description: _____					
Where are they stored? <input type="checkbox"/> grass/dirt area <input type="checkbox"/> concrete/asphalt <input type="checkbox"/> bermed area					
C3. Is the storage area directly or indirectly connected to storm drain (circle one)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C4. Is staining or discoloration around the area visible? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C5. Does outdoor storage area lack a cover? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C6. Are liquid materials stored without secondary containment? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
C7. Are storage containers missing labels or in poor condition (rusting)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>D. WASTE MANAGEMENT</b> <input type="checkbox"/> N/A (Skip to part E)				<b>Observed Pollution Source?</b> <input type="checkbox"/>	
D1. Type of waste (check all that apply): <input checked="" type="checkbox"/> Garbage <input type="checkbox"/> Construction materials <input type="checkbox"/> Hazardous materials					
D2. Dumpster condition (check all that apply): <input checked="" type="checkbox"/> No cover/Lid is open <input type="checkbox"/> Damaged/poor condition <input type="checkbox"/> Leaking or evidence of leakage (stains on ground) <input type="checkbox"/> Overflowing					
D3. Is the dumpster located near a storm drain inlet? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
If yes, are runoff diversion methods (berms, curbs) lacking? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					
<b>E. PHYSICAL PLANT</b> <input type="checkbox"/> N/A (Skip to part F)				<b>Observed Pollution Source?</b> <input type="checkbox"/>	
E1. Building: Approximate age: <u>50</u> yrs. Condition of surfaces: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Damaged					
Evidence that maintenance results in discharge to storm drains (staining/discoloration)? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Don't know					

\*Index: ○ denotes potential pollution source; ☐ denotes confirmed polluter (evidence was seen)

<b>E2. Parking Lot:</b> Approximate age <u>5</u> yrs. Condition: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up Surface material <input checked="" type="checkbox"/> Paved/Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Permeable <input type="checkbox"/> Don't know		●
<b>E3. Do downspouts discharge to impervious surface?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know <input type="checkbox"/> None visible Are downspouts directly connected to storm drains? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Don't know		●
<b>E4. Evidence of poor cleaning practices for construction activities (stains leading to storm drain)?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F. TURF/LANDSCAPING AREAS</b> <input type="checkbox"/> N/A (skip to part G)		Observed Pollution Source?
<b>F1. % of site with:</b> Forest canopy ___% Turf grass <u>100</u> % Landscaping ___% Bare Soil ___%		○
<b>F2. Rate the turf management status:</b> <input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low		○
<b>F3. Evidence of permanent irrigation or "non-target" irrigation</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>F4. Do landscaped areas drain to the storm drain system?</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		●
<b>F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>G. STORM WATER INFRASTRUCTURE</b> <input type="checkbox"/> N/A (skip to part H)		Observed Pollution Source?
<b>G1. Are storm water treatment practices present?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, please describe: _____		●
<b>G2. Are private storm drains located at the facility?</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown Is trash present in gutters leading to storm drains? If so, complete the index below.		○
Index Rating for Accumulation in Gutters		
	Clean	Filthy
Sediment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Organic material	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
Litter	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<input type="checkbox"/> 5
<b>G3. Catch basin inspection – Record SSD Unique Site ID here:</b> _____ Condition: <input type="checkbox"/> Dirty <input type="checkbox"/> Clean		
<b>H. INITIAL HOTSPOT STATUS - INDEX RESULTS</b>		
<input type="checkbox"/> Not a hotspot (fewer than 5 circles and no boxes checked) <input checked="" type="checkbox"/> Potential hotspot (5 to 10 circles but no boxes checked) <input type="checkbox"/> Confirmed hotspot (10 to 15 circles and/or 1 box checked) <input type="checkbox"/> Severe hotspot (>15 circles and/or 2 or more boxes checked)		
<b>Follow-up Action:</b> <input type="checkbox"/> Refer for immediate enforcement <input type="checkbox"/> Suggest follow-up on-site inspection <input type="checkbox"/> Test for illicit discharge <input type="checkbox"/> Include in future education effort <input type="checkbox"/> Check to see if hotspot is an NPDES non-filer <input type="checkbox"/> Onsite non-residential retrofit <input type="checkbox"/> Pervious area restoration; complete PAA sheet and record Unique Site ID here: _____ <input type="checkbox"/> Schedule a review of storm water pollution prevention plan		
<b>Notes:</b>  <div style="font-family: cursive; font-size: 1.2em;">           LOW PRIORITY REVISIT            MAY BE ROOM ON EAST SIDE            OF PARKING LOT FOR BMP            UTILITIES MAY BE ISSUE         </div>		



## APPENDIX C – RRI Field Forms

WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-1</u>
DATE: <u>2/20/20</u>	ASSESSED BY:	CAMERA ID: <u>905, 906, 907</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: Eagle's Rest Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_  
 Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes)  $<1/8$   $1/8$   $1/4$   $1/3$   $1/2$  acre ☐ Multifamily (Apts, Townhomes, Condos)  
☒ Single Family Detached  $<1/4$   $(1/4)$   $1/2$   $1$   $>1$  acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 10 years Percent of Homes with Garages: 100% With Basements 100% **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>50</u>	
B2. % of lot with grass cover	<u>50</u>	●
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>0</u>	◆
B4. % of lot with bare soil	<u>0</u>	○
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>70</u> Med: <u>20</u> Low: <u>10</u>	●
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____		○
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input type="checkbox"/> N/A	<u>100</u>	
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		○
C3. Are sidewalks present? <input type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation What is the distance between the sidewalk and street? <u>3</u> ft. Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		○ ◆ ○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply: <input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment <input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		○ ◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity

<b>D. ROOFTOPS</b>			
D1. Downspouts are directly connected to storm drains or sanitary sewer	<input type="radio"/>		<input type="checkbox"/>
D2. Downspouts are directed to impervious surface	20		
D3. Downspouts discharge to pervious area	80		
D4. Downspouts discharge to a cistern, rain barrel, etc.	0		
<i>*Note: C1 through C4 should total 100%</i>			
D5. Lawn area present downgradient of leader for rain garden? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N			<input checked="" type="checkbox"/>
<b>E. COMMON AREAS</b>			
E1. Storm drain inlets? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they stenciled? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Condition: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Dirty			<input type="checkbox"/>
Catch basins inspected? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, include Unique Site ID from SSD sheet: _____			<input type="checkbox"/>
E2. Storm water pond? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Is it a <input checked="" type="checkbox"/> wet pond or <input type="checkbox"/> dry pond? Is it overgrown? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N What is the estimated pond area? <input type="checkbox"/> <1 acre <input checked="" type="checkbox"/> about 1 acre <input type="checkbox"/> > 1 acre			<input type="checkbox"/>
E3. Open Space? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, is pet waste present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N dumping? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N			<input type="checkbox"/>
Buffers/floodplain present: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, is encroachment evident? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N			
<b>F. INITIAL NEIGHBORHOOD ASSESSMENT AND RECOMMENDATIONS</b>			
Based on field observations, this neighborhood has significant indicators for the following: (check all that apply)			
<input checked="" type="checkbox"/> Nutrients <input type="checkbox"/> Oil and Grease <input type="checkbox"/> Trash/Litter <input type="checkbox"/> Bacteria <input type="checkbox"/> Sediment <input type="checkbox"/> Other _____			<input checked="" type="checkbox"/>
<b>Recommended Actions</b>		<b>Describe Recommended Actions:</b>	
<i>Specific Action</i> <input type="checkbox"/> Onsite retrofit potential? <input type="checkbox"/> Better lawn/landscaping practice? <input type="checkbox"/> Better management of common space? <input type="checkbox"/> Pond retrofit? <input type="checkbox"/> Multi-family Parking Lot Retrofit? <input type="checkbox"/> Other action(s) _____		SEVERAL LARGE WET PONDS	
<b>Initial Assessment</b>			
<b>NSA Pollution Severity Index</b>			
<input type="checkbox"/> Severe (More than 10 circles checked)			
<input type="checkbox"/> High (5 to 10 circles checked)			
<input checked="" type="checkbox"/> Moderate (Fewer than 5 circles checked)			
<input type="checkbox"/> None (No circles checked)			
<b>Neighborhood Restoration Opportunity Index</b>			
<input type="checkbox"/> High (More than 5 diamonds checked)			
<input checked="" type="checkbox"/> Moderate (3-5 diamonds checked)			
<input type="checkbox"/> Low (Fewer than 3 diamonds checked)			



WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-2</u>
DATE: <u>2/20/20</u>	ASSESSED BY:	CAMERA ID: <u>902, 903, 904</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: The Yards at Fieldside Village Neighborhood Area (acres) \_\_\_\_\_

If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes)  $<1/8$   $1/8$   $1/4$   $1/3$   $1/2$  acre ☒ Multifamily (Apts, Townhomes, Condos)

☐ Single Family Detached  $<1/4$   $1/4$   $1/2$  1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 10 years Percent of Homes with Garages: 40 % With Basements 0 % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
---	------------	----------------

**B. YARD AND LAWN CONDITIONS**

B1. % of lot with impervious cover	<u>90</u>		
B2. % of lot with grass cover	<u>10</u>		○
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>0</u>		◇
B4. % of lot with bare soil	<u>0</u>		○
<i>*Note: B1 through B4 must total 100%</i>			
B5. % of lot with forest canopy	<u>0</u>		◇
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>		○
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>80</u>		●
	Med: <u>20</u>		
	Low: <u>0</u>		
B8. Outdoor swimming pools? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # <u>1</u>			○
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell			○

**C. DRIVEWAYS, SIDEWALKS, AND CURBS**

C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A			
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up			○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input type="checkbox"/>			
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation			○
What is the distance between the sidewalk and street? <u>0</u> ft.			◇
Is pet waste present in this area? <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> N/A			○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:			
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment			○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy			◇

\* INDEX: ○ denotes potential pollution source; ◇ denotes a neighborhood restoration opportunity

**NOTES:**



WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-3</u>
DATE: <u>2/20/20</u>	ASSESSED BY:	CAMERA ID: <u>901</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: Residences of Summerlin Neighborhood Area (acres) \_\_\_\_\_

If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes)  $<1/8$   $1/8$   $1/4$   $1/3$   $1/2$  acre ☒ Multifamily (Apts, Townhomes, Condos)

☐ Single Family Detached  $<1/4$   $1/4$   $1/2$   $1$   $>1$  acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 15 years Percent of Homes with Garages: — % With Basements — % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>80</u>	
B2. % of lot with grass cover	<u>20</u>	○
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>0</u>	◆
B4. % of lot with bare soil	<u>0</u>	○
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>40</u>	●
	Med: <u>60</u>	
	Low: <u>0</u>	
B8. Outdoor swimming pools? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # <u>1</u>		○
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A		
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		○
What is the distance between the sidewalk and street? <u>0</u> ft.		◆
Is pet waste present in this area? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A		○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity





WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-4</u>
DATE: <u>2/20/20</u>	ASSESSED BY:	CAMERA ID: <u>884, 887, 888, 889</u>
<b>A. NEIGHBORHOOD CHARACTERIZATION</b> Neighborhood/Subdivision Name: <u>The Osprey Apartments</u> Neighborhood Area (acres) <u>890,891</u> If unknown, address (or streets) surveyed: <u>Cranberry Run Apartments</u> Homeowners Association? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, name and contact information: _____ Residential (circle average single family lot size): _____ <input type="checkbox"/> Single Family Attached (Duplexes, Row Homes) $<1/8$ $1/8$ $1/4$ $1/3$ $1/2$ acre <input checked="" type="checkbox"/> Multifamily (Apts, Townhomes, Condos) <input type="checkbox"/> Single Family Detached $<1/4$ $1/4$ $1/2$ $1$ $>1$ acre <input type="checkbox"/> Mobile Home Park Estimated Age of Neighborhood: <u>50</u> years Percent of Homes with Garages: <u>0</u> % With Basements <u>0</u> % <b>INDEX*</b> Sewer Service? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Index of Infill, Redevelopment, and Remodeling <input checked="" type="checkbox"/> No Evidence <input type="checkbox"/> <5% of units <input type="checkbox"/> 5-10% <input type="checkbox"/> >10% <input type="checkbox"/> <i>Record percent observed for each of the following indicators, depending on applicability and/or site complexity</i> <b>Percentage</b> <b>Comments/Notes</b> <b>B. YARD AND LAWN CONDITIONS</b> B1. % of lot with impervious cover <u>60</u> B2. % of lot with grass cover <u>30</u> B3. % of lot with landscaping (e.g., mulched bed areas) <u>10</u> B4. % of lot with bare soil <u>0</u> *Note: B1 through B4 must total 100% B5. % of lot with forest canopy <u>0</u> B6. Evidence of permanent irrigation or "non-target" irrigation <u>0</u> B7. Proportion of total neighborhood turf lawns with following management status: High: _____ Med: <u>60</u> Low: <u>40</u> B8. Outdoor swimming pools? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____ B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell <b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b> C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up <input type="checkbox"/> C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input checked="" type="checkbox"/> or along both sides <input type="checkbox"/> <input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation What is the distance between the sidewalk and street? <u>4</u> ft. Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply: <input type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment <input checked="" type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		

\* INDEX: ○ denotes potential pollution source; ◇ denotes a neighborhood restoration opportunity



**NOTES:**

WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-S</u>	
DATE: <u>2/20/20</u>	ASSESSED BY:	CAMERA ID:	PIC#: <u>880, 881</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: Pine Ridge Rental Homes Neighborhood Area (acres) \_\_\_\_\_

If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☐ N ☒ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes) <1/8 1/8 1/4 1/3 1/2 acre ☐ Multifamily (Apts, Townhomes, Condos)

☒ Single Family Detached <1/4 1/4 1/2 1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 70 years Percent of Homes with Garages: 0 % With Basements 0 %

Sewer Service? ☒ Y ☐ N

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10%

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes	INDEX*
<b>B. YARD AND LAWN CONDITIONS</b>			
B1. % of lot with impervious cover	<u>40</u>		
B2. % of lot with grass cover	<u>60</u>		●
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>0</u>		◆
B4. % of lot with bare soil	<u>0</u>		○
<i>*Note: B1 through B4 must total 100%</i>			
B5. % of lot with forest canopy	<u>0</u>		◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>		○
B7. Proportion of total neighborhood turf lawns with following management status:	High: _____		○
	Med: <u>20</u>		
	Low: <u>80</u>		
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____			○
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell			○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>			
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A			
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up			○
C3. Are sidewalks present? <input type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>			
<input type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation			○
What is the distance between the sidewalk and street? <u>2</u> ft.			◆
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A			○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:			
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment			○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy			◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity



D. ROOFTOPS						
D1. Downspouts are directly connected to storm drains or sanitary sewer						<input checked="" type="checkbox"/> <input type="checkbox"/>
D2. Downspouts are directed to impervious surface						
D3. Downspouts discharge to pervious area		100				
D4. Downspouts discharge to a cistern, rain barrel, etc.						
<i>*Note: C1 through C4 should total 100%</i>						
D5. Lawn area present downgradient of leader for rain garden? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N						<input checked="" type="checkbox"/>
E. COMMON AREAS						
E1. Storm drain inlets? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they stenciled? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Condition: <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Dirty						<input checked="" type="checkbox"/> <input type="checkbox"/>
Catch basins inspected? <input type="checkbox"/> Y <input type="checkbox"/> N If yes, include Unique Site ID from SSD sheet: _____						<input type="checkbox"/>
E2. Storm water pond? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Is it a <input type="checkbox"/> wet pond or <input type="checkbox"/> dry pond? Is it overgrown? <input type="checkbox"/> Y <input type="checkbox"/> N What is the estimated pond area? <input type="checkbox"/> <1 acre <input type="checkbox"/> about 1 acre <input type="checkbox"/> > 1 acre						<input checked="" type="checkbox"/>
E3. Open Space? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, is pet waste present? <input type="checkbox"/> Y <input type="checkbox"/> N dumping? <input type="checkbox"/> Y <input type="checkbox"/> N						<input type="checkbox"/>
Buffers/floodplain present: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, is encroachment evident? <input type="checkbox"/> Y <input type="checkbox"/> N						
F. INITIAL NEIGHBORHOOD ASSESSMENT AND RECOMMENDATIONS						
Based on field observations, this neighborhood has significant indicators for the following: ( <i>check all that apply</i> ) <input checked="" type="checkbox"/> Nutrients <input type="checkbox"/> Oil and Grease <input type="checkbox"/> Trash/Litter <input checked="" type="checkbox"/> Bacteria <input type="checkbox"/> Sediment <input type="checkbox"/> Other _____						<input checked="" type="checkbox"/>
Recommended Actions			Describe Recommended Actions:			
Specific Action <input type="checkbox"/> Onsite retrofit potential? <input type="checkbox"/> Better lawn/landscaping practice? <input type="checkbox"/> Better management of common space? <input type="checkbox"/> Pond retrofit? <input type="checkbox"/> Multi-family Parking Lot Retrofit? <input type="checkbox"/> Other action(s) _____			RAIN GARDENS RAIN BARRELS			
Initial Assessment						
NSA Pollution Severity Index <input type="checkbox"/> Severe (More than 10 circles checked) <input type="checkbox"/> High (5 to 10 circles checked) <input checked="" type="checkbox"/> Moderate (Fewer than 5 circles checked) <input type="checkbox"/> None (No circles checked)						
Neighborhood Restoration Opportunity Index <input type="checkbox"/> High (More than 5 diamonds checked) <input checked="" type="checkbox"/> Moderate (3-5 diamonds checked) <input type="checkbox"/> Low (Fewer than 3 diamonds checked)						



WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>NSA-6</u>	
DATE: <u>2/20/20</u>		ASSESSED BY:		CAMERA ID:	PIC#: <u>882,883,884</u>
<b>A. NEIGHBORHOOD CHARACTERIZATION</b>					
Neighborhood/Subdivision Name: <u>Hillside Terrace Apartments</u>				Neighborhood Area (acres) _____	
If unknown, address (or streets) surveyed: _____					
Homeowners Association? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, name and contact information: _____					
Residential (circle average single family lot size): _____					
<input type="checkbox"/> Single Family Attached (Duplexes, Row Homes) $<1/8$ $1/8$ $1/4$ $1/3$ $1/2$ acre <input checked="" type="checkbox"/> Multifamily (Apts, Townhomes, Condos)					
<input type="checkbox"/> Single Family Detached $<1/4$ $1/4$ $1/2$ 1 >1 acre <input type="checkbox"/> Mobile Home Park					
Estimated Age of Neighborhood: <u>20</u> years		Percent of Homes with Garages: <u>—</u> % With Basements <u>—</u> %		INDEX*	
Sewer Service? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N					○
Index of Infill, Redevelopment, and Remodeling <input checked="" type="checkbox"/> No Evidence <input type="checkbox"/> <5% of units <input type="checkbox"/> 5-10% <input type="checkbox"/> >10%					○
<i>Record percent observed for each of the following indicators, depending on applicability and/or site complexity</i>				Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>					
B1. % of lot with impervious cover				75	
B2. % of lot with grass cover				25	○
B3. % of lot with landscaping (e.g., mulched bed areas)				0	◆
B4. % of lot with bare soil				0	○
*Note: B1 through B4 must total 100%					
B5. % of lot with forest canopy				0	◆
B6. Evidence of permanent irrigation or "non-target" irrigation				0	○
B7. Proportion of total neighborhood turf lawns with following management status:				High: _____	○
				Med: _____	
				Low: <u>100</u>	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____					○
B9. Junk or trash in yards? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>					
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A					
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up					○
C3. Are sidewalks present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input type="checkbox"/>					
<input type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation					○
What is the distance between the sidewalk and street? _____ ft.					◆
Is pet waste present in this area? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A					○
C4. Is curb and gutter present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, check all that apply:					
<input type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment					○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy					◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity

**NOTES:**



WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>NSA-7</u>	
DATE: <u>2/13/20</u>		ASSESSED BY:		CAMERA ID:	PIC#: <u>485, 486, 487</u>
<b>A. NEIGHBORHOOD CHARACTERIZATION</b>					
Neighborhood/Subdivision Name: _____				Neighborhood Area (acres) _____	
If unknown, address (or streets) surveyed: _____					
Homeowners Association? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, name and contact information: _____					
Residential (circle average single family lot size): _____					
<input type="checkbox"/> Single Family Attached (Duplexes, Row Homes) < $\frac{1}{4}$ acre <input type="checkbox"/> Multifamily (Apts, Townhomes, Condos) <input checked="" type="checkbox"/> Single Family Detached < $\frac{1}{4}$ ( $\frac{1}{4}$ ) $\frac{1}{2}$ 1 > 1 acre <input type="checkbox"/> Mobile Home Park					
Estimated Age of Neighborhood: <u>90</u> years		Percent of Homes with Garages: <u>15</u> %		With Basements <u>90</u> %	
Sewer Service? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N					INDEX*
Index of Infill, Redevelopment, and Remodeling <input type="checkbox"/> No Evidence <input type="checkbox"/> <5% of units <input type="checkbox"/> 5-10% <input checked="" type="checkbox"/> >10%					
<i>Record percent observed for each of the following indicators, depending on applicability and/or site complexity</i>				Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>					
B1. % of lot with impervious cover				<u>50</u>	
B2. % of lot with grass cover				<u>45</u>	○
B3. % of lot with landscaping (e.g., mulched bed areas)				<u>5</u>	◆
B4. % of lot with bare soil				<u>0</u>	○
<i>*Note: B1 through B4 must total 100%</i>					
B5. % of lot with forest canopy				<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation				<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:				High: _____	○
				Med: <u>30</u>	
				Low: <u>70</u>	
B8. Outdoor swimming pools? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # <u>1</u>					○
B9. Junk or trash in yards? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>					
C1. % of driveways that are impervious <input type="checkbox"/> N/A				<u>100</u>	
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up					○
C3. Are sidewalks present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input type="checkbox"/>					
<input type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation					○
What is the distance between the sidewalk and street? _____ ft.					◆
Is pet waste present in this area? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A					○
C4. Is curb and gutter present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, check all that apply:					
<input type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment					○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy					◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity

**NOTES:**



WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-8</u>
DATE: <u>2/13/20</u>	ASSESSED BY:	CAMERA ID: <u>483161</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: Chapel Glen Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes) <  $\frac{1}{4}$  acre ☐ Multifamily (Apts, Townhomes, Condos)  
☒ Single Family Detached <  $\frac{1}{4}$   $\frac{1}{4}$   $\frac{1}{2}$  1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 20 years Percent of Homes with Garages: 80 % With Basements 100 %

Sewer Service? ☒ Y ☐ N

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10%

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>70</u>	
B2. % of lot with grass cover	<u>25</u>	
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>5</u>	
B4. % of lot with bare soil	<u>0</u>	
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>20</u> Med: <u>50</u> Low: <u>30</u>	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____		
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input type="checkbox"/> N/A	<u>100</u>	
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		
What is the distance between the sidewalk and street? <u>3</u> ft.		
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		

\* INDEX: ○ denotes potential pollution source; ◇ denotes a neighborhood restoration opportunity



**NOTES:**

WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-9</u>
DATE: <u>2/13/20</u>	ASSESSED BY:	CAMERA ID: PIC#: <u>488, 489</u> 490

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: Fairbrooke Apartments Neighborhood Area (acres) \_\_\_\_\_

If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes) < 1/4 acre ☒ Multifamily (Apts, Townhomes, Condos)

☐ Single Family Detached < 1/4 1/4 1/2 1 > 1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 30 years Percent of Homes with Garages: — % With Basements — % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>90</u>	
B2. % of lot with grass cover	<u>5</u>	○
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>5</u>	◆
B4. % of lot with bare soil	<u>0</u>	○
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:	High: _____	○
	Med: <u>100</u>	
	Low: _____	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____		○
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input type="checkbox"/> N/A	<u>100</u>	
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input checked="" type="checkbox"/> or along both sides <input type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		○
What is the distance between the sidewalk and street? <u>0</u> ft.		◆
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity



**NOTES:**

WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-10</u>
DATE: <u>2/13/20</u>	ASSESSED BY:	CAMERA ID: <u>481,482</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: \_\_\_\_\_ Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☒ Single Family Attached (Duplexes, Row Homes) < 1/4 acre ☐ Multifamily (Apts, Townhomes, Condos)  
☐ Single Family Detached < 1/4 1/4 1/2 1 > 1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 30 years Percent of Homes with Garages: 0 % With Basements 100 %

Sewer Service? ☒ Y ☐ N

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10%

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>60</u>	
B2. % of lot with grass cover	<u>30</u>	
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>10</u>	
B4. % of lot with bare soil	<u>0</u>	
*Note: B1 through B4 must total 100%		
B5. % of lot with forest canopy	<u>0</u>	
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	
B7. Proportion of total neighborhood turf lawns with following management status:	High: _____ Med: <u>20</u> Low: <u>80</u>	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____		
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A		
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up <u>NO DRIVEWAYS</u>		
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		
What is the distance between the sidewalk and street? <u>0</u> ft.		
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		

\* INDEX: ○ denotes potential pollution source; ◇ denotes a neighborhood restoration opportunity



**NOTES:**



WATERSHED: <u>Alcedon</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>NSA-11</u>	
DATE: <u>2/13/20</u>		ASSESSED BY:		CAMERA ID:	PIC#: <u>976, 977</u>
<b>A. NEIGHBORHOOD CHARACTERIZATION</b>					
Neighborhood/Subdivision Name: _____				Neighborhood Area (acres) _____	
If unknown, address (or streets) surveyed: _____					
Homeowners Association? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, name and contact information: _____					
Residential (circle average single family lot size): _____					
<input type="checkbox"/> Single Family Attached (Duplexes, Row Homes) < $\frac{1}{4}$ acre <input type="checkbox"/> Multifamily (Apts, Townhomes, Condos) <input checked="" type="checkbox"/> Single Family Detached < $\frac{1}{4}$ <u><math>\frac{1}{4}</math></u> $\frac{1}{2}$ 1 >1 acre <input type="checkbox"/> Mobile Home Park					
Estimated Age of Neighborhood: <u>110</u> years		Percent of Homes with Garages: <u>15</u> %		With Basements <u>80</u> %	
Sewer Service? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N					INDEX*
Index of Infill, Redevelopment, and Remodeling <input checked="" type="checkbox"/> No Evidence <input type="checkbox"/> <5% of units <input type="checkbox"/> 5-10% <input type="checkbox"/> >10%					INDEX*
<i>Record percent observed for each of the following indicators, depending on applicability and/or site complexity</i>				Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>					
B1. % of lot with impervious cover				<u>50</u>	
B2. % of lot with grass cover				<u>45</u>	○
B3. % of lot with landscaping (e.g., mulched bed areas)				<u>5</u>	◆
B4. % of lot with bare soil				<u>0</u>	○
<i>*Note: B1 through B4 must total 100%</i>					
B5. % of lot with forest canopy				<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation				<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:				High: _____	○
				Med: <u>40</u>	
				Low: <u>60</u>	
B8. Outdoor swimming pools? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # <u>2</u>					○
B9. Junk or trash in yards? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>					
C1. % of driveways that are impervious <input type="checkbox"/> N/A				<u>100</u>	
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up					○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>					
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation					○
What is the distance between the sidewalk and street? <u>3</u> ft.					◆
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A					○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:					
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment					○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy					◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity

**NOTES:**



WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-12</u>
DATE: <u>2/20/20</u>	ASSESSED BY:	CAMERA ID: <u>892,893</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: \_\_\_\_\_ Neighborhood Area (acres) \_\_\_\_\_

If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes)  $<1/8$   $1/8$   $1/4$   $1/3$   $1/2$  acre ☐ Multifamily (Apts, Townhomes, Condos)

☒ Single Family Detached  $<1/4$   $(1/4)$   $1/2$   $1$   $>1$  acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 10 years Percent of Homes with Garages: 20 % With Basements 80 % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
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**B. YARD AND LAWN CONDITIONS**

B1. % of lot with impervious cover	<u>50</u>		
B2. % of lot with grass cover	<u>36</u>		○
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>10</u>		◆
B4. % of lot with bare soil	<u>0</u>		○
<i>*Note: B1 through B4 must total 100%</i>			
B5. % of lot with forest canopy	<u>0</u>		◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>		○
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>10</u>		○
	Med: <u>40</u>		
	Low: <u>50</u>		
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____			○
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell			○

**C. DRIVEWAYS, SIDEWALKS, AND CURBS**

C1. % of driveways that are impervious <input type="checkbox"/> N/A	<u>100</u>		
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up			○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input checked="" type="checkbox"/> or along both sides <input type="checkbox"/>			
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation			○
What is the distance between the sidewalk and street? <u>3</u> ft.			◆
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A			○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:			
<input type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment			○
<input checked="" type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy			◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity

D. ROOFTOPS		
D1. Downspouts are directly connected to storm drains or sanitary sewer		◇ ○
D2. Downspouts are directed to impervious surface	25	
D3. Downspouts discharge to pervious area	75	
D4. Downspouts discharge to a cistern, rain barrel, etc.		
*Note: C1 through C4 should total 100%		
D5. Lawn area present downgradient of leader for rain garden? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N		◆
E. COMMON AREAS		
E1. Storm drain inlets? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they stenciled? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Condition: <input type="checkbox"/> Clean <input checked="" type="checkbox"/> Dirty		◇
Catch basins inspected? <input type="checkbox"/> Y <input type="checkbox"/> N If yes, include Unique Site ID from SSD sheet: _____		○
E2. Storm water pond? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Is it a <input type="checkbox"/> wet pond or <input type="checkbox"/> dry pond? Is it overgrown? <input type="checkbox"/> Y <input type="checkbox"/> N What is the estimated pond area? <input type="checkbox"/> <1 acre <input type="checkbox"/> about 1 acre <input type="checkbox"/> > 1 acre		◇
E3. Open Space? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, is pet waste present? <input type="checkbox"/> Y <input type="checkbox"/> N dumping? <input type="checkbox"/> Y <input type="checkbox"/> N		○
Buffers/floodplain present: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, is encroachment evident? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N		
F. INITIAL NEIGHBORHOOD ASSESSMENT AND RECOMMENDATIONS		
Based on field observations, this neighborhood has significant indicators for the following: (check all that apply)		
<input checked="" type="checkbox"/> Nutrients <input type="checkbox"/> Oil and Grease <input type="checkbox"/> Trash/Litter <input checked="" type="checkbox"/> Bacteria <input type="checkbox"/> Sediment <input type="checkbox"/> Other _____		●
<b>Recommended Actions</b> <i>Specific Action</i> <input type="checkbox"/> Onsite retrofit potential? <input type="checkbox"/> Better lawn/landscaping practice? <input type="checkbox"/> Better management of common space? <input type="checkbox"/> Pond retrofit? <input type="checkbox"/> Multi-family Parking Lot Retrofit? <input type="checkbox"/> Other action(s) _____	<b>Describe Recommended Actions:</b>  RAIN BARRELS RAIN GARDENS	
<b>Initial Assessment</b>  <b>NSA Pollution Severity Index</b> <input type="checkbox"/> Severe (More than 10 circles checked) <input type="checkbox"/> High (5 to 10 circles checked) <input checked="" type="checkbox"/> Moderate (Fewer than 5 circles checked) <input type="checkbox"/> None (No circles checked)  <b>Neighborhood Restoration Opportunity Index</b> <input type="checkbox"/> High (More than 5 diamonds checked) <input checked="" type="checkbox"/> Moderate (3-5 diamonds checked) <input type="checkbox"/> Low (Fewer than 3 diamonds checked)		

NOTES:



WATERSHED: <u>Abbeville</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-13</u>
DATE: <u>2/20/20</u>	ASSESSED BY: <u>AB, SB</u>	CAMERA ID: <u>896, 897, 898</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: \_\_\_\_\_ Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_  
 Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes)  $<1/8$   $1/8$   $1/4$   $1/3$   $1/2$  acre ☐ Multifamily (Apts, Townhomes, Condos)  
☒ Single Family Detached  $<1/4$   $(1/4)$   $1/2$   $1$   $>1$  acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 20 years Percent of Homes with Garages: 100 % With Basements 100 % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>40</u>	
B2. % of lot with grass cover	<u>50</u>	●
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>10</u>	◆
B4. % of lot with bare soil	<u>0</u>	○
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>30</u>	●
	Med: <u>60</u>	
	Low: <u>10</u>	
B8. Outdoor swimming pools? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # <u>20</u>		●
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input type="checkbox"/> N/A	<u>100</u>	
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		○
What is the distance between the sidewalk and street? <u>3</u> ft.		◆
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity



**NOTES:**

WATERSHED: <u>Abundeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-14</u>
DATE: <u>02/20/20</u>	ASSESSED BY: <u>SB, AB</u>	CAMERA ID: <u>908, 909</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: \_\_\_\_\_ Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_  
 Residential (circle average single family lot size): \_\_\_\_\_

☒ Single Family Attached (Duplexes, Row Homes)  $< \frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{4}$   $\frac{1}{3}$   $\frac{1}{3}$  acre ☐ Multifamily (Apts, Townhomes, Condos)  
☐ Single Family Detached  $< \frac{1}{4}$   $\frac{1}{4}$   $\frac{1}{2}$  1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 40 years Percent of Homes with Garages: 0 % With Basements 100 % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>70</u>	
B2. % of lot with grass cover	<u>30</u>	○
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>0</u>	◆
B4. % of lot with bare soil	<u>0</u>	○
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>0</u>	○
	Med: <u>30</u>	
	Low: <u>70</u>	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____		○
B9. Junk or trash in yards? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A		
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		○
What is the distance between the sidewalk and street? <u>0</u> ft.		◆
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity



**NOTES:**

WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-15</u>
DATE: <u>3/2/2020</u>	ASSESSED BY: <u>SB, SD</u>	CAMERA ID: <u></u> PIC#: <u>910</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: Burton Manor Apartments Neighborhood Area (acres)   
 If unknown, address (or streets) surveyed:

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information:

Residential (circle average single family lot size):  
☐ Single Family Attached (Duplexes, Row Homes) < 1/4 acre ☒ Multifamily (Apts, Townhomes, Condos)  
☐ Single Family Detached < 1/4 1/4 1/2 1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 30 years Percent of Homes with Garages: 0 % With Basements 0 %

Sewer Service? ☒ Y ☐ N INDEX\* ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% INDEX\* ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>75</u>	
B2. % of lot with grass cover	<u>20</u>	
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>5</u>	
B4. % of lot with bare soil	<u>0</u>	
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u></u> Med: <u>100</u> Low: <u></u>	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # <u></u>		
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A		
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input checked="" type="checkbox"/> or along both sides <input type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		
What is the distance between the sidewalk and street? <u>0</u> ft.		
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		

\* INDEX: ○ denotes potential pollution source; ◇ denotes a neighborhood restoration opportunity



**NOTES:**



<b>WATERSHED:</b>		<b>SUBWATERSHED:</b>		<b>UNIQUE SITE ID:</b> NSA-16	
<b>DATE:</b> 2/11/20		<b>ASSESSED BY:</b>		<b>CAMERA ID:</b>	<b>PIC#:</b> 425,424
<b>A. NEIGHBORHOOD CHARACTERIZATION</b>					
Neighborhood/Subdivision Name: _____				Neighborhood Area (acres) _____	
If unknown, address (or streets) surveyed: _____					
Homeowners Association? <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Unknown If yes, name and contact information: _____					
Residential (circle average single family lot size): _____					
<input type="checkbox"/> Single Family Attached (Duplexes, Row Homes) < 1/4 acre <input type="checkbox"/> Multifamily (Apts, Townhomes, Condos) <input checked="" type="checkbox"/> Single Family Detached < 1/4 <input checked="" type="checkbox"/> 1/4 <input type="checkbox"/> 1/2 <input type="checkbox"/> 1 > 1 acre <input type="checkbox"/> Mobile Home Park					
Estimated Age of Neighborhood: 70 years		Percent of Homes with Garages: 0 %		With Basements 0 %	
Sewer Service? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N					INDEX*
Index of Infill, Redevelopment, and Remodeling <input checked="" type="checkbox"/> No Evidence <input type="checkbox"/> <5% of units <input type="checkbox"/> 5-10% <input type="checkbox"/> >10%					INDEX*
<i>Record percent observed for each of the following indicators, depending on applicability and/or site complexity</i>				Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>					
B1. % of lot with impervious cover				30	
B2. % of lot with grass cover				60	○
B3. % of lot with landscaping (e.g., mulched bed areas)				10	◆
B4. % of lot with bare soil				0	○
*Note: B1 through B4 must total 100%					
B5. % of lot with forest canopy				0	◆
B6. Evidence of permanent irrigation or "non-target" irrigation				0	○
B7. Proportion of total neighborhood turf lawns with following management status:				High: _____	○
				Med: 20	
				Low: 80	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____					○
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>					
C1. % of driveways that are impervious <input type="checkbox"/> N/A				100	
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up					○
C3. Are sidewalks present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input type="checkbox"/>					
<input type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation					○
What is the distance between the sidewalk and street? _____ ft.					◆
Is pet waste present in this area? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A					○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:					
<input type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment					○
<input checked="" type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy					◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity

D. ROOFTOPS					
D1. Downspouts are directly connected to storm drains or sanitary sewer	<input type="radio"/>				<input checked="" type="checkbox"/> <input type="checkbox"/>
D2. Downspouts are directed to impervious surface	25				
D3. Downspouts discharge to pervious area	75				
D4. Downspouts discharge to a cistern, rain barrel, etc.	<input type="radio"/>				
<i>*Note: C1 through C4 should total 100%</i>					
D5. Lawn area present downgradient of leader for rain garden?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N				<input checked="" type="checkbox"/>
E. COMMON AREAS					
E1. Storm drain inlets? <input type="checkbox"/> Y <input type="checkbox"/> N If yes, are they stenciled? <input type="checkbox"/> Y <input type="checkbox"/> N Condition: <input type="checkbox"/> Clean <input type="checkbox"/> Dirty					<input checked="" type="checkbox"/>
Catch basins inspected? <input type="checkbox"/> Y <input type="checkbox"/> N If yes, include Unique Site ID from SSD sheet:					<input type="checkbox"/>
E2. Storm water pond? <input type="checkbox"/> Y <input type="checkbox"/> N Is it a <input type="checkbox"/> wet pond or <input type="checkbox"/> dry pond? Is it overgrown? <input type="checkbox"/> Y <input type="checkbox"/> N What is the estimated pond area? <input type="checkbox"/> <1 acre <input type="checkbox"/> about 1 acre <input type="checkbox"/> > 1 acre					<input checked="" type="checkbox"/>
E3. Open Space? <input type="checkbox"/> Y <input type="checkbox"/> N If yes, is pet waste present? <input type="checkbox"/> Y <input type="checkbox"/> N dumping? <input type="checkbox"/> Y <input type="checkbox"/> N					<input type="checkbox"/>
Buffers/floodplain present: <input type="checkbox"/> Y <input type="checkbox"/> N If yes, is encroachment evident? <input type="checkbox"/> Y <input type="checkbox"/> N					
F. INITIAL NEIGHBORHOOD ASSESSMENT AND RECOMMENDATIONS					
Based on field observations, this neighborhood has significant indicators for the following: ( <i>check all that apply</i> ) <input checked="" type="checkbox"/> Nutrients <input type="checkbox"/> Oil and Grease <input type="checkbox"/> Trash/Litter <input type="checkbox"/> Bacteria <input type="checkbox"/> Sediment <input type="checkbox"/> Other _____					<input checked="" type="checkbox"/>
<b>Recommended Actions</b> <i>Specific Action</i> <input type="checkbox"/> Onsite retrofit potential? <input type="checkbox"/> Better lawn/landscaping practice? <input type="checkbox"/> Better management of common space? <input type="checkbox"/> Pond retrofit? <input type="checkbox"/> Multi-family Parking Lot Retrofit? <input type="checkbox"/> Other action(s) _____			<b>Describe Recommended Actions:</b> RAIN GARDENS RAIN BARRELS		
<b>Initial Assessment</b>  <b>NSA Pollution Severity Index</b> <input type="checkbox"/> Severe (More than 10 circles checked) <input type="checkbox"/> High (5 to 10 circles checked) <input checked="" type="checkbox"/> Moderate (Fewer than 5 circles checked) <input type="checkbox"/> None (No circles checked)					
<b>Neighborhood Restoration Opportunity Index</b> <input type="checkbox"/> High (More than 5 diamonds checked) <input checked="" type="checkbox"/> Moderate (3-5 diamonds checked) <input type="checkbox"/> Low (Fewer than 3 diamonds checked)					



WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-17</u>
DATE: <u>3/2/2020</u>	ASSESSED BY: <u>SB, SD</u>	CAMERA ID: <u>971, 972, 975</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: \_\_\_\_\_ Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes) <  $\frac{1}{4}$  acre ☐ Multifamily (Apts, Townhomes, Condos)  
☒ Single Family Detached <  $\frac{1}{4}$   $\frac{1}{4}$   $\frac{1}{2}$  1 > 1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 110 years Percent of Homes with Garages: \_\_\_\_\_% With Basements \_\_\_\_\_% **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>40</u>	
B2. % of lot with grass cover	<u>45</u>	○
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>10</u>	◆
B4. % of lot with bare soil	<u>5</u>	●
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:	High: _____ Med: <u>30</u> Low: <u>70</u>	○
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____		○
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input type="checkbox"/> N/A	<u>100</u>	
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		○
What is the distance between the sidewalk and street? <u>4</u> ft.		◆
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity

D. ROOFTOPS						
D1. Downspouts are directly connected to storm drains or sanitary sewer						
D2. Downspouts are directed to impervious surface		10				
D3. Downspouts discharge to pervious area		90				
D4. Downspouts discharge to a cistern, rain barrel, etc.						
<i>*Note: C1 through C4 should total 100%</i>						
D5. Lawn area present downgradient of leader for rain garden?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N					
E. COMMON AREAS						
E1. Storm drain inlets? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, are they stenciled? <input type="checkbox"/> Y <input type="checkbox"/> N Condition: <input type="checkbox"/> Clean <input type="checkbox"/> Dirty						
Catch basins inspected? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, include Unique Site ID from SSD sheet:						
E2. Storm water pond? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Is it a <input checked="" type="checkbox"/> wet pond or <input type="checkbox"/> dry pond? Is it overgrown? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N What is the estimated pond area? <input checked="" type="checkbox"/> <1 acre <input type="checkbox"/> about 1 acre <input type="checkbox"/> > 1 acre						
E3. Open Space? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, is pet waste present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N dumping? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N						
Buffers/floodplain present: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, is encroachment evident? <input type="checkbox"/> Y <input type="checkbox"/> N						
F. INITIAL NEIGHBORHOOD ASSESSMENT AND RECOMMENDATIONS						
Based on field observations, this neighborhood has significant indicators for the following: ( <i>check all that apply</i> ) <input checked="" type="checkbox"/> Nutrients <input type="checkbox"/> Oil and Grease <input type="checkbox"/> Trash/Litter <input type="checkbox"/> Bacteria <input type="checkbox"/> Sediment <input type="checkbox"/> Other _____						
<b>Recommended Actions</b> <i>Specific Action</i> <input type="checkbox"/> Onsite retrofit potential? <input type="checkbox"/> Better lawn/landscaping practice? <input type="checkbox"/> Better management of common space? <input type="checkbox"/> Pond retrofit? <input type="checkbox"/> Multi-family Parking Lot Retrofit? <input type="checkbox"/> Other action(s) _____			<b>Describe Recommended Actions:</b> Rain barrels + rain garden			
<b>Initial Assessment</b>  <b>NSA Pollution Severity Index</b> <input type="checkbox"/> Severe (More than 10 circles checked) <input type="checkbox"/> High (5 to 10 circles checked) <input checked="" type="checkbox"/> Moderate (Fewer than 5 circles checked) <input type="checkbox"/> None (No circles checked)  <b>Neighborhood Restoration Opportunity Index</b> <input type="checkbox"/> High (More than 5 diamonds checked) <input checked="" type="checkbox"/> Moderate (3-5 diamonds checked) <input type="checkbox"/> Low (Fewer than 3 diamonds checked)						



WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-18</u>
DATE: <u>3/2/2020</u>	ASSESSED BY:	CAMERA ID: <u>PIC#973, 974</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: \_\_\_\_\_ Neighborhood Area (acres) \_\_\_\_\_

If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☒ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☒ Single Family Attached (Duplexes, Row Homes) < 1/4 acre ☐ Multifamily (Apts, Townhomes, Condos)

☐ Single Family Detached < 1/4 1/4 1/2 1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 50 years Percent of Homes with Garages: 0 % With Basements 0 % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes	
<b>B. YARD AND LAWN CONDITIONS</b>			
B1. % of lot with impervious cover	<u>70</u>		
B2. % of lot with grass cover	<u>30</u>		○
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>0</u>		◆
B4. % of lot with bare soil	<u>0</u>		○
<i>*Note: B1 through B4 must total 100%</i>			
B5. % of lot with forest canopy	<u>0</u>		◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>		○
B7. Proportion of total neighborhood turf lawns with following management status:	High: _____		○
	Med: <u>20</u>		
	Low: <u>80</u>		
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____			○
B9. Junk or trash in yards? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell			●
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>			
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A			
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up			○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input type="checkbox"/>			
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation			○
What is the distance between the sidewalk and street? <u>0</u> ft.			◆
Is pet waste present in this area? <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> N/A			○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:			
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment			○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy			◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity



**NOTES:**

WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-19</u>
DATE: <u>3/9/20</u>	ASSESSED BY: <u>SB, SD</u>	CAMERA ID: <u>17617</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: \_\_\_\_\_ Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☐ N ☒ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes) < 1/4 acre ☐ Multifamily (Apts, Townhomes, Condos)  
☒ Single Family Detached (<1/4) 1/4 1/2 1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 80 years Percent of Homes with Garages: 0 % With Basements 0 % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>40</u>	
B2. % of lot with grass cover	<u>50</u>	●
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>10</u>	◆
B4. % of lot with bare soil	<u>0</u>	○
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:	High: _____	○
	Med: <u>40</u>	
	Low: <u>60</u>	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____		○
B9. Junk or trash in yards? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		●
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input type="checkbox"/> N/A	<u>100</u>	
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		○
C3. Are sidewalks present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input type="checkbox"/>		
<input type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		○
What is the distance between the sidewalk and street? _____ ft.		◆
Is pet waste present in this area? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A		○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		○
<input checked="" type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity



**NOTES:**

WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-20</u>
DATE: <u>3/9/20</u>	ASSESSED BY: <u>SB, SD</u>	CAMERA ID: <u>1081</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: The Highlands Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☐ N ☒ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size):  
☒ Single Family Attached (Duplexes, Row Homes) < 1/4 acre ☐ Multifamily (Apts, Townhomes, Condos)  
☐ Single Family Detached < 1/4 1/4 1/2 1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 20 years Percent of Homes with Garages: 0 % With Basements 0 % **INDEX\***

Sewer Service? ☒ Y ☐ N ☐

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ☐

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes	
<b>B. YARD AND LAWN CONDITIONS</b>			
B1. % of lot with impervious cover	<u>60</u>		<input type="radio"/>
B2. % of lot with grass cover	<u>30</u>		<input type="radio"/>
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>0</u>		<input checked="" type="radio"/>
B4. % of lot with bare soil	<u>0</u>		<input type="radio"/>
<i>*Note: B1 through B4 must total 100%</i>			
B5. % of lot with forest canopy	<u>0</u>		<input checked="" type="radio"/>
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>		<input type="radio"/>
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>10</u>		<input type="radio"/>
	Med: <u>80</u>		
	Low: <u>10</u>		
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____			<input type="radio"/>
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell			<input type="radio"/>
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>			
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A			
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up			<input type="radio"/>
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation			<input type="radio"/>
What is the distance between the sidewalk and street? <u>0</u> ft.			<input checked="" type="radio"/>
Is pet waste present in this area? <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> N/A			<input type="radio"/>
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:			
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment			<input type="radio"/>
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy			<input checked="" type="radio"/>

\* INDEX: ☐ denotes potential pollution source; ☒ denotes a neighborhood restoration opportunity



D. ROOFTOPS					
D1. Downspouts are directly connected to storm drains or sanitary sewer	<input type="radio"/>				<input checked="" type="checkbox"/> <input type="checkbox"/>
D2. Downspouts are directed to impervious surface	<input checked="" type="radio"/>				
D3. Downspouts discharge to pervious area	<input checked="" type="radio"/>				
D4. Downspouts discharge to a cistern, rain barrel, etc.	<input type="radio"/>				
<i>*Note: C1 through C4 should total 100%</i>					
D5. Lawn area present downgradient of leader for rain garden?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N				<input checked="" type="checkbox"/>
E. COMMON AREAS					
E1. Storm drain inlets? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they stenciled? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Condition: <input type="checkbox"/> Clean <input checked="" type="checkbox"/> Dirty					<input checked="" type="checkbox"/>
Catch basins inspected? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, include Unique Site ID from SSD sheet: _____					<input type="checkbox"/>
E2. Storm water pond? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Is it a <input checked="" type="checkbox"/> wet pond or <input type="checkbox"/> dry pond? Is it overgrown? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N What is the estimated pond area? <input checked="" type="checkbox"/> <1 acre <input type="checkbox"/> about 1 acre <input type="checkbox"/> > 1 acre					<input checked="" type="checkbox"/>
E3. Open Space? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, is pet waste present? <input type="checkbox"/> Y <input type="checkbox"/> N dumping? <input type="checkbox"/> Y <input type="checkbox"/> N					<input type="checkbox"/>
Buffers/floodplain present: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, is encroachment evident? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N					
F. INITIAL NEIGHBORHOOD ASSESSMENT AND RECOMMENDATIONS					
Based on field observations, this neighborhood has significant indicators for the following: ( <i>check all that apply</i> ) <input checked="" type="checkbox"/> Nutrients <input type="checkbox"/> Oil and Grease <input type="checkbox"/> Trash/Litter <input checked="" type="checkbox"/> Bacteria <input type="checkbox"/> Sediment <input type="checkbox"/> Other _____					<input checked="" type="checkbox"/>
<b>Recommended Actions</b> <i>Specific Action</i> <input type="checkbox"/> Onsite retrofit potential? <input type="checkbox"/> Better lawn/landscaping practice? <input type="checkbox"/> Better management of common space? <input type="checkbox"/> Pond retrofit? <input type="checkbox"/> Multi-family Parking Lot Retrofit? <input type="checkbox"/> Other action(s) _____			<b>Describe Recommended Actions:</b> TREATED BY 2 WET PONDS NO ROOM FOR RAIN GARDENS / BARRELS		
<b>Initial Assessment</b>  <b>NSA Pollution Severity Index</b> <input type="checkbox"/> Severe (More than 10 circles checked) <input type="checkbox"/> High (5 to 10 circles checked) <input checked="" type="checkbox"/> Moderate (Fewer than 5 circles checked) <input type="checkbox"/> None (No circles checked)  <b>Neighborhood Restoration Opportunity Index</b> <input type="checkbox"/> High (More than 5 diamonds checked) <input checked="" type="checkbox"/> Moderate (3-5 diamonds checked) <input type="checkbox"/> Low (Fewer than 3 diamonds checked)					



WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-21</u>
DATE: <u>3/9/20</u>	ASSESSED BY:	CAMERA ID: <u>178,179</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: The Highlands Commons Neighborhood Area (acres) \_\_\_\_\_

If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☒ Y ☐ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size):

☐ Single Family Attached (Duplexes, Row Homes) < 1/4 acre ☒ Multifamily (Apts, Townhomes, Condos)

☐ Single Family Detached < 1/4 1/4 1/2 1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 60 years Percent of Homes with Garages: 0 % With Basements 0 %

Sewer Service? ☒ Y ☐ N

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10%

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes	INDEX*
<b>B. YARD AND LAWN CONDITIONS</b>			
B1. % of lot with impervious cover	<u>70</u>		
B2. % of lot with grass cover	<u>30</u>		○
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>0</u>		◆
B4. % of lot with bare soil	<u>0</u>		○
<i>*Note: B1 through B4 must total 100%</i>			
B5. % of lot with forest canopy	<u>0</u>		◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>		○
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>30</u> Med: <u>70</u> Low: _____		●
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____			○
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell			○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>			
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A			
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up			○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input checked="" type="checkbox"/> or along both sides <input type="checkbox"/>			
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation			○
What is the distance between the sidewalk and street? <u>0</u> ft.			◆
Is pet waste present in this area? <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> N/A			○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:			
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment			○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy			◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity

D. ROOFTOPS					
D1. Downspouts are directly connected to storm drains or sanitary sewer		0		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D2. Downspouts are directed to impervious surface		0			
D3. Downspouts discharge to pervious area		100			
D4. Downspouts discharge to a cistern, rain barrel, etc.		0			
<i>*Note: C1 through C4 should total 100%</i>					
D5. Lawn area present downgradient of leader for rain garden?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N			<input checked="" type="checkbox"/>	
E. COMMON AREAS					
E1. Storm drain inlets? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, are they stenciled? <input type="checkbox"/> Y <input type="checkbox"/> N Condition: <input type="checkbox"/> Clean <input type="checkbox"/> Dirty				<input checked="" type="checkbox"/>	
Catch basins inspected? <input type="checkbox"/> Y <input type="checkbox"/> N If yes, include Unique Site ID from SSD sheet: _____				<input type="checkbox"/>	
E2. Storm water pond? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Is it a <input type="checkbox"/> wet pond or <input type="checkbox"/> dry pond? Is it overgrown? <input type="checkbox"/> Y <input type="checkbox"/> N What is the estimated pond area? <input type="checkbox"/> <1 acre <input type="checkbox"/> about 1 acre <input type="checkbox"/> > 1 acre				<input checked="" type="checkbox"/>	
E3. Open Space? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, is pet waste present? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N dumping? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N				<input type="checkbox"/>	
Buffers/floodplain present: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, is encroachment evident? <input type="checkbox"/> Y <input type="checkbox"/> N					
F. INITIAL NEIGHBORHOOD ASSESSMENT AND RECOMMENDATIONS					
Based on field observations, this neighborhood has significant indicators for the following: ( <i>check all that apply</i> ) <input checked="" type="checkbox"/> Nutrients <input type="checkbox"/> Oil and Grease <input type="checkbox"/> Trash/Litter <input checked="" type="checkbox"/> Bacteria <input type="checkbox"/> Sediment <input type="checkbox"/> Other _____					
<b>Recommended Actions</b> <i>Specific Action</i> <input type="checkbox"/> Onsite retrofit potential? <input type="checkbox"/> Better lawn/landscaping practice? <input type="checkbox"/> Better management of common space? <input type="checkbox"/> Pond retrofit? <input type="checkbox"/> Multi-family Parking Lot Retrofit? <input type="checkbox"/> Other action(s) _____			<b>Describe Recommended Actions:</b> WATER DRAINS TO CONCRETE DITCH, ROOM FOR SWP		
<b>Initial Assessment</b>  <b>NSA Pollution Severity Index</b> <input type="checkbox"/> Severe (More than 10 circles checked) <input type="checkbox"/> High (5 to 10 circles checked) <input checked="" type="checkbox"/> Moderate (Fewer than 5 circles checked) <input type="checkbox"/> None (No circles checked)  <b>Neighborhood Restoration Opportunity Index</b> <input type="checkbox"/> High (More than 5 diamonds checked) <input type="checkbox"/> Moderate (3-5 diamonds checked) <input checked="" type="checkbox"/> Low (Fewer than 3 diamonds checked)					



D. ROOFTOPS			
D1. Downspouts are directly connected to storm drains or sanitary sewer	0		◇ ○
D2. Downspouts are directed to impervious surface	0		
D3. Downspouts discharge to pervious area	100		
D4. Downspouts discharge to a cistern, rain barrel, etc.	6		
<i>*Note: C1 through C4 should total 100%</i>			
D5. Lawn area present downgradient of leader for rain garden? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N			◇
E. COMMON AREAS			
E1. Storm drain inlets? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they stenciled? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Condition: <input type="checkbox"/> Clean <input checked="" type="checkbox"/> Dirty			◇
Catch basins inspected? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, include Unique Site ID from SSD sheet: _____			○
E2. Storm water pond? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Is it a <input type="checkbox"/> wet pond or <input type="checkbox"/> dry pond? Is it overgrown? <input type="checkbox"/> Y <input type="checkbox"/> N What is the estimated pond area? <input type="checkbox"/> <1 acre <input type="checkbox"/> about 1 acre <input type="checkbox"/> > 1 acre			◇
E3. Open Space? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, is pet waste present? <input type="checkbox"/> Y <input type="checkbox"/> N dumping? <input type="checkbox"/> Y <input type="checkbox"/> N			○
Buffers/floodplain present: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, is encroachment evident? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N			
F. INITIAL NEIGHBORHOOD ASSESSMENT AND RECOMMENDATIONS			
Based on field observations, this neighborhood has significant indicators for the following: (check all that apply)			
<input checked="" type="checkbox"/> Nutrients <input type="checkbox"/> Oil and Grease <input type="checkbox"/> Trash/Litter <input checked="" type="checkbox"/> Bacteria <input type="checkbox"/> Sediment <input type="checkbox"/> Other _____			
<b>Recommended Actions</b> <i>Specific Action</i> <input type="checkbox"/> Onsite retrofit potential? <input type="checkbox"/> Better lawn/landscaping practice? <input type="checkbox"/> Better management of common space? <input type="checkbox"/> Pond retrofit? <input type="checkbox"/> Multi-family Parking Lot Retrofit? <input type="checkbox"/> Other action(s) _____	<b>Describe Recommended Actions:</b>  <div style="font-size: 1.2em; font-family: cursive;">No room for rain barrels/rain gardens</div>		
<b>Initial Assessment</b>  <b>NSA Pollution Severity Index</b> <input type="checkbox"/> Severe (More than 10 circles checked) <input type="checkbox"/> High (5 to 10 circles checked) <input checked="" type="checkbox"/> Moderate (Fewer than 5 circles checked) <input type="checkbox"/> None (No circles checked)  <b>Neighborhood Restoration Opportunity Index</b> <input type="checkbox"/> High (More than 5 diamonds checked) <input type="checkbox"/> Moderate (3-5 diamonds checked) <input checked="" type="checkbox"/> Low (Fewer than 3 diamonds checked)			

NOTES:

WATERSHED: <u>Abasco</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-22</u>
DATE: <u>2/20/20</u>	ASSESSED BY: <u>AB, SB</u>	CAMERA ID: <u>916, 917</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: Spring Valley Estates Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☐ N ☒ Unknown If yes, name and contact information: \_\_\_\_\_  
 Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes)  $<1/8$   $1/8$   $1/4$   $1/3$   $1/2$  acre ☐ Multifamily (Apts, Townhomes, Condos)  
☐ Single Family Detached  $<1/4$   $1/4$   $1/2$   $1$   $>1$  acre ☒ Mobile Home Park

Estimated Age of Neighborhood: 75 years Percent of Homes with Garages: 0 % With Basements 0 % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
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**B. YARD AND LAWN CONDITIONS**

B1. % of lot with impervious cover 35 ○

B2. % of lot with grass cover 65 ●

B3. % of lot with landscaping (e.g., mulched bed areas) 0 ◆

B4. % of lot with bare soil 0 ○

*\*Note: B1 through B4 must total 100%*

B5. % of lot with forest canopy 0 ◆

B6. Evidence of permanent irrigation or "non-target" irrigation 0 ○

B7. Proportion of total neighborhood turf lawns with following management status:

High: _____	<span style="float: right;">○</span>
Med: <u>20</u>	
Low: <u>80</u>	

B8. Outdoor swimming pools? ☐ Y ☒ N ☐ Can't Tell Estimated # \_\_\_\_\_ ○

B9. Junk or trash in yards? ☐ Y ☒ N ☐ Can't Tell ○

**C. DRIVEWAYS, SIDEWALKS, AND CURBS**

C1. % of driveways that are impervious ☐ N/A 100 ○

C2. Driveway Condition ☒ Clean ☐ Stained ☐ Dirty ☐ Breaking up ○

C3. Are sidewalks present? ☐ Y ☒ N If yes, are they on one side of street ☐ or along both sides ☐  
☐ Spotless ☐ Covered with lawn clippings/leaves ☐ Receiving 'non-target' irrigation ○  
 What is the distance between the sidewalk and street? \_\_\_\_\_ ft. ◇  
 Is pet waste present in this area? ☐ Y ☐ N ☐ N/A ○

C4. Is curb and gutter present? ☒ Y ☐ N If yes, check all that apply:  
☐ Clean and Dry ☐ Flowing or standing water ☐ Long-term car parking ☐ Sediment ○  
☒ Organic matter, leaves, lawn clippings ☐ Trash, litter, or debris ☐ Overhead tree canopy ✗

\* INDEX: ○ denotes potential pollution source; ◇ denotes a neighborhood restoration opportunity



WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-23</u>
DATE: <u>2/20/20</u>	ASSESSED BY: <u>AB, SB</u>	CAMERA ID: <u>914, 915</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: Old Post Apt. Neighborhood Area (acres) \_\_\_\_\_

If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☐ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes)  $<1/8$   $1/8$   $1/4$   $1/3$   $1/2$  acre ☒ Multifamily (Apts, Townhomes, Condos)

☐ Single Family Detached  $<1/4$   $1/4$   $1/2$  1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 50 years Percent of Homes with Garages: 0 % With Basements 0 % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>70</u>	<div style="text-align: center;">✕</div>
B2. % of lot with grass cover	<u>30</u>	
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>0</u>	
B4. % of lot with bare soil	<u>0</u>	
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	<div style="text-align: center;">◆</div>
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	<div style="text-align: center;">○</div>
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>0</u>	<div style="text-align: center;">○</div>
	Med: <u>60</u>	
	Low: <u>40</u>	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____		<div style="text-align: center;">○</div>
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		<div style="text-align: center;">○</div>
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A		
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		<div style="text-align: center;">○</div>
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		<div style="text-align: center;">○</div>
What is the distance between the sidewalk and street? <u>0</u> ft.		<div style="text-align: center;">◆</div>
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		<div style="text-align: center;">○</div>
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		<div style="text-align: center;">○</div>
<input checked="" type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		<div style="text-align: center;">◆</div>

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity





WATERSHED: <u>Aberdeen</u>		SUBWATERSHED:		UNIQUE SITE ID: <u>NSA-24</u>	
DATE: <u>2/20/20</u>		ASSESSED BY: <u>AB, SB</u>		CAMERA ID:	PIC#: <u>912, 913</u>
<b>A. NEIGHBORHOOD CHARACTERIZATION</b>					
Neighborhood/Subdivision Name: _____				Neighborhood Area (acres) _____	
If unknown, address (or streets) surveyed: _____					
Homeowners Association? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Unknown If yes, name and contact information: _____					
Residential (circle average single family lot size): _____					
<input checked="" type="checkbox"/> Single Family Attached (Duplexes, Row Homes) <u>1/8</u> <input type="checkbox"/> 1/8 <input type="checkbox"/> 1/4 <input type="checkbox"/> 1/3 <input type="checkbox"/> 1/2 acre <input type="checkbox"/> Multifamily (Apts, Townhomes, Condos) <input type="checkbox"/> Single Family Detached <input type="checkbox"/> <1/4 <input type="checkbox"/> 1/4 <input type="checkbox"/> 1/2 <input type="checkbox"/> 1 <input type="checkbox"/> >1 acre <input type="checkbox"/> Mobile Home Park					
Estimated Age of Neighborhood: <u>60</u> years		Percent of Homes with Garages: <u>0</u> %		With Basements <u>0</u> %	
Sewer Service? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N					INDEX*
Index of Infill, Redevelopment, and Remodeling <input checked="" type="checkbox"/> No Evidence <input type="checkbox"/> <5% of units <input type="checkbox"/> 5-10% <input type="checkbox"/> >10%					○
<i>Record percent observed for each of the following indicators, depending on applicability and/or site complexity</i>				Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>					
B1. % of lot with impervious cover				<u>40</u>	
B2. % of lot with grass cover				<u>60</u>	●
B3. % of lot with landscaping (e.g., mulched bed areas)				<u>0</u>	◆
B4. % of lot with bare soil				<u>0</u>	○
*Note: B1 through B4 must total 100%					
B5. % of lot with forest canopy				<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation				<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:				High: <u>0</u>	○
				Med: <u>70</u>	
				Low: <u>30</u>	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____					○
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell					○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>					
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A					
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up					○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>					
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation					○
What is the distance between the sidewalk and street? <u>4</u> ft.					◆
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A					○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:					
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment					○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy					◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity



**NOTES:**

WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-25</u>
DATE: <u>2/20/20</u>	ASSESSED BY: <u>AB, SB</u>	CAMERA ID: <u>910, 911</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: \_\_\_\_\_ Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☐ N ☐ Unknown If yes, name and contact information: \_\_\_\_\_  
 Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes)  $< \frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{4}$   $\frac{1}{3}$   $\frac{1}{2}$  acre ☐ Multifamily (Apts, Townhomes, Condos)  
☒ Single Family Detached  $< \frac{1}{4}$   $\frac{1}{4}$   $\frac{1}{2}$  1 > 1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 70 years Percent of Homes with Garages: 0 % With Basements 100 % **INDEX\***

Sewer Service? ☒ Y ☐ N ○

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10% ○

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
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**B. YARD AND LAWN CONDITIONS**

B1. % of lot with impervious cover	<u>40</u>		
B2. % of lot with grass cover	<u>60</u>		●
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>0</u>		◆
B4. % of lot with bare soil	<u>0</u>		○
<i>*Note: B1 through B4 must total 100%</i>			
B5. % of lot with forest canopy	<u>0</u>		◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>		○
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>10</u>		○
	Med: <u>45</u>		
	Low: <u>45</u>		
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____			○
B9. Junk or trash in yards? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell			○

**C. DRIVEWAYS, SIDEWALKS, AND CURBS**

C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A			
C2. Driveway Condition <input type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up			○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input type="checkbox"/>			
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation			○
What is the distance between the sidewalk and street? <u>3</u> ft.			◆
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A			○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:			
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment			○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy			◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity





WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-26</u>
DATE: <u>3/9/20</u>	ASSESSED BY:	CAMERA ID: <u>183, 184</u>

**A. NEIGHBORHOOD CHARACTERIZATION**

Neighborhood/Subdivision Name: \_\_\_\_\_ Neighborhood Area (acres) \_\_\_\_\_  
 If unknown, address (or streets) surveyed: \_\_\_\_\_

Homeowners Association? ☐ Y ☐ N ☒ Unknown If yes, name and contact information: \_\_\_\_\_

Residential (circle average single family lot size): \_\_\_\_\_

☐ Single Family Attached (Duplexes, Row Homes) <  $\frac{1}{4}$  acre ☐ Multifamily (Apts, Townhomes, Condos)  
☒ Single Family Detached <  $\frac{1}{4}$   $\frac{1}{4}$   $\frac{1}{2}$  1 >1 acre ☐ Mobile Home Park

Estimated Age of Neighborhood: 20 years Percent of Homes with Garages: 100 % With Basements 100 %

Sewer Service? ☒ Y ☐ N

Index of Infill, Redevelopment, and Remodeling ☒ No Evidence ☐ <5% of units ☐ 5-10% ☐ >10%

Record percent observed for each of the following indicators, depending on applicability and/or site complexity	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>70</u>	
B2. % of lot with grass cover	<u>25</u>	
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>5</u>	
B4. % of lot with bare soil	<u>0</u>	
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	
B7. Proportion of total neighborhood turf lawns with following management status:	High: <u>15</u> Med: <u>70</u> Low: <u>15</u>	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____		
B9. Junk or trash in yards? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell		
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input type="checkbox"/> N/A	<u>100</u>	
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		
What is the distance between the sidewalk and street? <u>2</u> ft.		
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		

\* INDEX: ○ denotes potential pollution source; ◇ denotes a neighborhood restoration opportunity



**NOTES:**

INSIDE

WATERSHED: <u>Aberdeen</u>	SUBWATERSHED:	UNIQUE SITE ID: <u>NSA-27</u>
DATE: <u>2/13/20</u>	ASSESSED BY:	CAMERA ID: PIC#:
<b>A. NEIGHBORHOOD CHARACTERIZATION</b>		
Neighborhood/Subdivision Name: _____		Neighborhood Area (acres) _____
If unknown, address (or streets) surveyed: _____		
Homeowners Association? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unknown If yes, name and contact information: _____		
Residential (circle average single family lot size): _____		
<input checked="" type="checkbox"/> Single Family Attached (Duplexes, Row Homes) < <u>1/4</u> acre <input type="checkbox"/> Multifamily (Apts, Townhomes, Condos) <input type="checkbox"/> Single Family Detached < 1/4 1/4 1/2 1 > 1 acre <input type="checkbox"/> Mobile Home Park		
Estimated Age of Neighborhood: <u>40</u> years	Percent of Homes with Garages: <u>0</u> % With Basements <u>100</u> %	<b>INDEX*</b>
Sewer Service? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N		○
Index of Infill, Redevelopment, and Remodeling <input checked="" type="checkbox"/> No Evidence <input type="checkbox"/> <5% of units <input type="checkbox"/> 5-10% <input type="checkbox"/> >10%		○
<i>Record percent observed for each of the following indicators, depending on applicability and/or site complexity</i>		
	Percentage	Comments/Notes
<b>B. YARD AND LAWN CONDITIONS</b>		
B1. % of lot with impervious cover	<u>70</u>	
B2. % of lot with grass cover	<u>25</u>	○
B3. % of lot with landscaping (e.g., mulched bed areas)	<u>5</u>	◆
B4. % of lot with bare soil	<u>0</u>	○
<i>*Note: B1 through B4 must total 100%</i>		
B5. % of lot with forest canopy	<u>0</u>	◆
B6. Evidence of permanent irrigation or "non-target" irrigation	<u>0</u>	○
B7. Proportion of total neighborhood turf lawns with following management status:	High: _____	○
	Med: <u>20</u>	
	Low: <u>80</u>	
B8. Outdoor swimming pools? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Can't Tell Estimated # _____		○
B9. Junk or trash in yards? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Can't Tell		○
<b>C. DRIVEWAYS, SIDEWALKS, AND CURBS</b>		
C1. % of driveways that are impervious <input checked="" type="checkbox"/> N/A		
C2. Driveway Condition <input checked="" type="checkbox"/> Clean <input type="checkbox"/> Stained <input type="checkbox"/> Dirty <input type="checkbox"/> Breaking up		○
C3. Are sidewalks present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, are they on one side of street <input type="checkbox"/> or along both sides <input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> Spotless <input type="checkbox"/> Covered with lawn clippings/leaves <input type="checkbox"/> Receiving 'non-target' irrigation		○
What is the distance between the sidewalk and street? <u>3</u> ft.		◆
Is pet waste present in this area? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A		○
C4. Is curb and gutter present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, check all that apply:		
<input checked="" type="checkbox"/> Clean and Dry <input type="checkbox"/> Flowing or standing water <input type="checkbox"/> Long-term car parking <input type="checkbox"/> Sediment		○
<input type="checkbox"/> Organic matter, leaves, lawn clippings <input type="checkbox"/> Trash, litter, or debris <input type="checkbox"/> Overhead tree canopy		◆

\* INDEX: ○ denotes potential pollution source; ◆ denotes a neighborhood restoration opportunity



**NOTES:**



## **CITY OF ABERDEEN**

### **National Pollutant Discharge Elimination System General Permit For Discharges From Small Municipal Separate Storm Sewer Systems**

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500  
Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

## **FISCAL YEAR 2021 MS4 GENERAL PERMIT PROGRESS REPORT YEAR 3**

## **ATTACHMENT I-3**

## **BEST MANAGEMENT PRACTICES DATABASE TABLES B.1.a, B.1.b, B.1.c**

*NOTE: Also Provided Electronically as an Email Attachment to this Report.*

Table B.1.a. BMP Reporting Requirements

BMP ID	REPORTING_YEAR	MO	NOCT10	MO	EAST	REINSTRUM	LOCAL_FLOW	BMP_NAME	BMP_CLASS	BMP_TYPE	CON PURPOSE	LAST INSP DATE	BMP STATUS	MAIN DATE	REINSP DATE	REINSP STATUS	GEN COMMENTS
AB19BMP00001	2019	6/27/21	1547673.1	13-IM	5500		AB008BMP000041	Beaver's Auto Body Shop	S	XDED	NEWD	1/21/2020	Pass				
AB19BMP00002	2019	6/7996.6488	1542638.935	13-IM	5500		AB008BMP000050	Roken Stadium	S	XSHW	NEWD	8/24/2020	Pass		3/1/2020	3/5/2020	Pass after maintenance was performed
AB19BMP00003	2019	6/70827.5261	1547375.214	13-IM	5500		AB008BMP000030	Auto Zone	S	WOTH	NEWD	1/6/2020	Pass				
AB19BMP00004	2019	6/79681.9999	1540971	13-IM	5500		AB008BMP000151	Roken Stadium Water Quality Trap #1	S	WSHW	NEWD	8/24/2020	Pass				
AB19BMP00005	2019	6/79681.9999	1541067	13-IM	5500		AB008BMP000152	Roken Stadium Water Quality Trap #2	S	WSHW	NEWD	8/24/2020	Pass				
AB19BMP00006	2019	6/80179.9998	1542475	13-IM	5500		AB008BMP000154	Roken Stadium Water Quality Trap # 5	S	WSHW	NEWD	8/24/2020	Pass				
AB19BMP00007	2019	6/79322.0235	1541398.549	13-IM	5500		AB008BMP000193	Roken Stadium Water Quality Trap #3	S	WSHW	NEWD	8/24/2020	Pass				
AB19BMP00008	2019	6/79882.8233	1542555.32	13-IM	5500		AB008BMP000194	Roken Stadium Water Quality Trap # 4	S	WSHW	NEWD	8/24/2020	Pass				
AB19BMP00009	2019	6/81236	1540735	13-IM	5500		AB018BMP000118	Long Drive	S	XDED	NEWD	12/12/2018	Pass				
AB19BMP00010	2019	6/74304.8488	1550582.146	13-IM	5500		AB018BMP000124	North Deen Park SWM Pond	S	XDED	NEWD	8/17/2020	Pass				
AB19BMP00015	2019	666761.9499	1543603.55	13-IM	5500		AB020BMP000166	Aberdeen Stack n Store SWM	S	XDED	NEWD	9/10/2020	Pass				
AB19BMP00017	2019	666664.135	1543910.22	13-IM	5500		AB031BMP000112	Aberdeen Industrial Center Lot 2c (Borough USA)	S	XDED	NEWD	1/24/2019	Pass				
AB19BMP00018	2019	6/76601.1799	1541901.106	13-IM	5500		AB038BMP000139	Olive Tree Plaza I	S	XOSG	NEWD	2/25/2020	Pass		4/1/2020	4/1/2020	
AB19BMP00019	2019	6/79057.7026	1555587.398	13-IM	5500		AB038BMP000183	Medline Facility Pond # 2	S	FNDS	NEWD	12/11/2018	Fail				Never constructed as a sand filter. Retrofitted GP #14-06
AB19BMP00020	2019	6/78474.2694	1555298.336	13-IM	5500		AB031BMP000184	Roken Glenn Business Park SWM Facility # 1	S	FWPS	NEWD	9/15/2020	Pass				
AB19BMP00021	2019	6/79581.0499	1555574.976	13-IM	5500		AB038BMP000186	Medline Submerged Gravel Wetland	S	MSGW	NEWD	12/11/2018	Pass				
AB19BMP00022	2019	6/73304.2101	1541593.89	13-IM	5500		AB048BMP000049	Chapel Glen	S	XDED	NEWD	10/4/2019	Fail				
AB19BMP00023	2019	6/71635.9999	1551469	13-IM	5500		AB048BMP000052	DPW Maintenance Building	S	WSHW	NEWD	8/17/2020	Pass				
AB19BMP00024	2019	6/71991.87002	1551540	13-IM	5500		AB048BMP000053	DPW Maintenance Building	E	XOTH	NEWD	8/17/2020	Pass				
AB19BMP00025	2019	6/71747	1551654	13-IM	5500		AB048BMP000054	DPW Maintenance Building	E	XOTH	NEWD	8/17/2020	Pass				
AB19BMP00026	2019	6/71794.9999	1551190	13-IM	5500		AB048BMP000055	DPW Maintenance Building	E	XOTH	NEWD	8/17/2020	Pass				
AB19BMP00027	2019	667235.0001	1540335	13-IM	5500		AB148BMP000082	Frito-Lay Hickory Ridge lot 2 Submerged Gravel Wetlands 1	E	MSGW	NEWD	11/22/2018	Pass				
AB19BMP00028	2019	6/77229.9998	1543250	13-IM	5500		AB048BMP000109	Home Depot US Facility #1	S	ITRN	NEWD	1/22/2019	Pass		8/14/2019	8/15/2020	
AB19BMP00029	2019	6/77229.9998	1543470	13-IM	5500		AB048BMP000110	Home Depot US Facility #2	S	FUND	NEWD	2/22/2019	Pass		8/14/2019	8/15/2020	
AB19BMP00030	2019	6/77229.9998	1543760	13-IM	5500		AB048BMP000111	Home Depot US Facility #3	S	FUND	NEWD	2/22/2019	Pass				
AB19BMP00031	2019	6/72150	1547588	13-IM	5500		AB048BMP000115	Johnson Family Pharmacy 119 W. Bel Air Avenue	E	MSWG	NEWD	1/11/2019	Pass				
AB19BMP00032	2019	6/72720	1547575	13-IM	5500		AB048BMP000116	Johnson Family Pharmacy 119 W. Bel Air Avenue	E	MSWG	NEWD	1/11/2019	Pass				
AB19BMP00033	2019	6/78120.6431	1549113.14	13-IM	5500		AB048BMP000147	Ramsey's Crest WQ #1	S	ODSW	NEWD	12/10/2018	Pass				
AB19BMP00034	2019	6/75001.961	1551653.673	13-IM	5500		AB048BMP000200	400 Old Post Road	S	FBO	NEWD	1/2/2020	Fail				
AB19BMP00035	2019	6/69175.4221	1546536.488	13-IM	5500		AB058BMP000044	Precision Tune (Pond)7-11	S	XDED	NEWD	8/26/2020	Pass				
AB19BMP00037	2019	6/72307.3319	1548237.055	13-IM	5500		AB058BMP000046	Cecil Federal Bank (Iona Howard Bank)	A	IMPP	REDE	2/27/2019	Pass				
AB19BMP00038	2019	664484	1537430	13-IM	5500		AB058BMP000084	Gilmer Moving/Storage	XDED	NEWD	7/10/2019	Pass					
AB19BMP00039	2019	6/72024.5391	1546053.195	13-IM	5500		AB058BMP000103	Harford Bank	S	FBO	NEWD	12/11/2018	Pass		7/23/2019	7/23/2019	
AB19BMP00040	2019	6/73282.78	1547668.01	13-IM	5500		AB058BMP000135	North Rogers Street Parking Lot	S	FNDS	NEWD	10/9/2019	Pass				
AB19BMP00041	2019	6/67993.6279	1545510.61	13-IM	5500		AB058BMP000141	Panther Systems (Donely Construction)	S	XDED	NEWD	3/5/2019	Pass				
AB19BMP00042	2019	6/76012.85	1544039.118	13-IM	5500		AB058BMP000148	Ramsey's Crest WQ #2	S	ODSW	NEWD	12/10/2018	Pass				
AB19BMP00043	2019	6/72874.676	1550708.254	13-IM	5500		AB058BMP000167	West Deane Townhouses	S	XDED	NEWD	1/14/2020	Pass				
AB19BMP00045	2019	6/75754.2826	1541254.178	13-IM	5500		AB068BMP000018	Aberdeen Shopping Plaza Maintenance Bldg	S	XDED	NEWD	12/14/2018	Pass		2/1/2019	2/8/2019	Pass after maintenance performed
AB19BMP00046	2019	665008.9999	1538512	13-IM	5500		AB068BMP000020	Action Electric Lot 8	S	WQ Basin	NEWD	1/23/2019	Pass				
AB19BMP00048	2019	6/77456	1542705	13-IM	5500		AB068BMP000027	Apolibeees Redevelopment Impervious Reduction	A	IMPP	NEWD	1/21/2020	Pass				
AB19BMP00049	2019	6/78658.58	1542626.38	13-IM	5500		AB068BMP000045	Catholic Charities	S	XDED	NEWD	1/21/2020	Pass				
AB19BMP00050	2019	6/79240.0001	1546790	13-IM	5500		AB068BMP000117	Lauren's Grace	S	XDED	NEWD	3/20/2019	Pass				
AB19BMP00051	2019	6/73732.9999	1549418	13-IM	5500		AB068BMP000166	Wawa	S	XOTH	NEWD	4/6/2020	Pass		8/4/2020	8/6/2020	
AB19BMP00052	2019	6/73732.9999	1549418	13-IM	5500		AB068BMP000167	Parke Street 14193 (All Access Facility)	S	XOTH	NEWD	1/6/2020	Pass				
AB19BMP00055	2019	665008.9999	1538512	13-IM	5500		AB068BMP000215	Action Electric Lot 8 1050 Hardens Drive	S	WQ Swale	NEWD	1/23/2019	Pass				
AB19BMP00057	2019	667842.9569	1544767.177	13-IM	5500		AB078BMP000022	Aberdeen Station WQ Under Ground Facility	S	WQ Under *	NEWD	3/5/2019	Pass				
AB19BMP00058	2019	6/74611.1629	1540986.247	13-IM	5500		AB078BMP000023	Chapel Crossing Pond	S	XDED	NEWD	10/2/2019	Pass		12/5/2019	12/17/2019	
AB19BMP00059	2019	668275.1201	1545209.05	13-IM	5500		AB078BMP000085	Golden Corral (Pond)	S	XDED	NEWD	3/5/2019	Pass				
AB19BMP00060	2019	666463.9571	1540353.157	13-IM	5500		AB078BMP000086	Greenway Business Park	S	XDED	NEWD	1/31/2020	Pass				Never converted. Still a sediment basin.
AB19BMP00062	2019	6/77268.7019	1547908.031	13-IM	5500		AB078BMP000066	Hillcrest/Windemere	S	XDED	NEWD	3/27/2020	Fail				Defunct HOA. Never maintained.
AB19BMP00063	2019	6/77371.9999	1544084	13-IM	5500		AB078BMP000121	Meddleton Holdings	S	FWPS	NEWD	1/24/2020	Pass				
AB19BMP00064	2019	667628.8589	1544949.764	13-IM	5500		AB078BMP000163	Walmart Pond 2	S	XDED	NEWD	3/17/2020	Pass				
AB19BMP00065	2019	667319.102	1545654.065	13-IM	5500		AB078BMP000164	Walmart Pond 3	S	XDED	NEWD	6/18/2020	Pass				
AB19BMP00066	2019	6/77688.41	1549066.37	13-IM	5500		AB078BMP000170	Windemere Sect 5 Pond A (11.0 acres)	S	XDED	NEWD	8/26/2020	Pass				
AB19BMP00067	2019	6/79040.4631	1547486.486	13-IM	5500		AB078BMP000171	Windemere Sect 5 Pond B (0.489 acres)	S	XDED	NEWD	8/26/2020	Pass				
AB19BMP00069	2019	6/77430.0001	1542907	13-IM	5500		AB088BMP000056	Dunkin Donuts Bears Hill Plaza	A	IMPP	NEWD	2/27/2019	Pass				
AB19BMP00072	2019	6/72051.5499	1549531.137	13-IM	5500		AB088BMP000131	North Post Commons SWM Facility #1	S	XDED	NEWD	11/6/2019	Pass				
AB19BMP00076	2019	681114.37	1555879.26	13-IM	5500		AB088BMP000177	Woods at Rock Glenn WQ 2	S	XDED	NEWD	8/24/2020	Pass				
AB19BMP00077	2019	681631.16	1550551.54	13-IM	5500		AB088BMP000178	Woods at Rock Glenn WQ 3	S	XDED	NEWD	8/24/2020	Pass				
AB19BMP00078	2019	6/7392.9202	1541845.754	13-IM	5500		AB088BMP000181	Woodland Green	S	XDPD	NEWD	10/4/2019	Pass				
AB19BMP00079	2019	681553.2541	1541629.082	13-IM	5500		AB088BMP000195	Roken Center Yankee Stadium WQ	S	ITRN	NEWD	9/15/2020	Pass				
AB19BMP00080	2019	6/74824	1542823	13-IM	5500		AB098BMP000000	Akwas Hotel	S	XDED	NEWD	1/2/2019	Pass				
AB19BMP00082	2019	6/71948.9136	1552555.872	13-IM	5500		AB108BMP000189	AWWTP Stormwater Bio-retention Turf Area	S	FBO	NEWD	9/11/2020	Pass				
AB19BMP00084	2019	6/72638.7774	1552843.05	13-IM	5500		AB108BMP000191	AWWTP Stormwater Bio-retention Basin (BBB-1)	S	FBO	NEWD	9/11/2020	Pass				
AB19BMP00085	2019	6/72638.7774	1552843.05	13-IM	5500		AB108BMP000192	AWWTP Stormwater Bio-retention Basin (BBB-2)	S	FBO	NEWD	9/11/2020	Pass				
AB19BMP00086	2019	668096.6999	1544703.925	13-IM	5500		AB118BMP000021	Aberdeen Station (aka Happy Harry's)	S	XDED	NEWD	3/5/2019	Pass				
AB19BMP00087	2019	667886.9998	1543901	13-IM	5500		AB118BMP000061	Edmund Street Booster Station	S	XDED	NEWD	8/17/2020	Pass				
AB19BMP00088	2019	6/77976	1544413	13-IM	5500		AB118BMP000218	Aberdeen Station (aka Happy Harry's)	S	Swale	NEWD	3/5/2019	Pass				
AB19BMP00089	2019	6/7036.0771	1551193.072	13-IM	5500		AB128BMP000028	North Gate Business Park Pond 2	E	MRNG	NEWD	6/20/2020	Pass				AB128BMP000129 changed to AB178BMP000129
AB19BMP00090	2019	6/72443.6	1547604.97	13-IM	5500		AB128BMP000208	Grace United Methodist Church Rain Garden #3	E	MRNG	NEWD	12/11/2018	Pass				
AB19BMP00091	2019	6/73215.96	1547546.84	13-IM	5500		AB128BMP000209	Grace United Methodist Church Rain Garden #1	E	MRNG	NEWD	12/11/2018	Pass				
AB19BMP00092	2019	6676789	1546515	13-IM	5500		AB138BMP000065	Ferrell Fuel WQ Facility #1	S	FNDS	NEWD	12/11/2018	Pass				
AB19BMP00093	2019																

Table B.1.a. BMP Reporting Requirements

BMP ID	REPORTING_YEAR	NO. MONTHS	MD. EASCT	ES. BERM. NUM	LOCAL ECHO	CITY NAME	BMP CLASS	BMP TYPE	CON. PURPOSE	LAST INSP. DATE	BMP STATUS	MAIN_DATE	REINSR_DATE	REINSR_STATUS	GEN. COMMENTS
AB19BMP000139	2019	609575.0001	1547020	13-IM-5500	AB87BMP000001	Aberdeen Automotive Store (Auto Zone)	S	ITRN	NEWD	1/21/2019	Pass				
AB19BMP000140	2019	61759.1361	1548423.83	13-IM-5500	AB89BMP000006	Amtrak/American Investment	S	ITRN	NEWD	1/14/2020	Pass				
AB19BMP000142	2019	676250.0002	1548750	13-IM-5500	AB89BMP000036	Bar-Kess Condos/Apartments	S	XDED	NEWD	1/16/2020	PASS				
AB19BMP000143	2019	681740	1547210	13-IM-5500	AB89BMP000083	Evangelical Assembly of GOD	S	XOTH	NEWD	1/23/2019	Pass				
AB19BMP000144	2019	665591.0002	1539780	13-IM-5500	AB89BMP000061	Harder's Ind Pl Lot 1	S	XDED	NEWD	1/23/2019	Pass				
AB19BMP000145	2019	673721	1548888	13-IM-5500	AB89BMP000114	Aberdeen Wash Day Northside Liquors	S	ITRN	NEWD	1/15/2020	Pass				
AB19BMP000146	2019	667460.1539	1541973.381	13-IM-5500	AB89BMP000149	Red Roof Inn	S	XOTH	NEWD	2/27/2019	Pass				
AB19BMP000147	2019	678209	1540130	13-IM-5500	AB89BMP000172	Windemere Sect 5 WQ	S	XDED	NEWD	8/26/2020	Pass				
AB19BMP000148	2019	678450.5076	1548387.152	13-IM-5500	AB89BMP000185	Windemere Estates Pond 1	S	XDED	NEWD	10/5/2020	Fail				Defunct HOA. Never maintained.
AB19BMP000149	2019	675288.4096	1550650.493	13-IM-5500	AB90BMP000038	Bay Country Rentals	E	MSWG	NEWD	1/16/2020	Pass				
AB19BMP000150	2019	664109.9998	1541780	13-IM-5500	AB90BMP000051	Cranberry Run Business Center	S	XDED	NEWD	10/18/2018	Pass				
AB19BMP000151	2019	678984.9699	1541189	13-IM-5500	AB90BMP000062	Eighty Four Lumber	S	XDED	NEWD	17/6/2018	Pass	2/1/2020	2/21/2020		
AB19BMP000152	2019	674485.0001	1551180	13-IM-5500	AB90BMP000125	North Deen Townhouses	S	XDED	NEWD	10/16/2019	Pass				
AB19BMP000153	2019	676377.2801	1542529.75	13-IM-5500	AB90BMP000158	Super 8 Motel	S	XDPD	NEWD	2/12/2020	Pass				
AB19BMP000154	2019	676377.2801	1542529.75	13-IM-5500	AB90BMP000197	Mar's Shopping Plaza Pond #2	S	PAWET	NEWD	12/22/2019	Pass	4/4/2019	4/4/2019		
AB19BMP000155	2019	665605.4483	1543888.836	13-IM-5500	AB91BMP000011	Aberdeen Industrial Center Lot 2b (Ryder Truck Rental)	S	WQ	NEWD	1/10/2019	Pass				
AB19BMP000156	2019	665161	1538621	13-IM-5500	AB91BMP000031	Automotive Machine Screw (Hardes Ind Park Lot 9)	S	ITRN	NEWD	1/23/2019	Pass				
AB19BMP000157	2019	675430.6399	1541740.653	13-IM-5500	AB91BMP000083	Genesis Trucking (aka Over&Sons)	S	XDED	NEWD	8/13/2020	Pass				Replaced with underground pipe storage. City Engineer getting information why the facility was filled in.
AB19BMP000158	2019	665200.0001	1539295	13-IM-5500	AB91BMP000095	Harder's Ind Pl Lot 1 (American Equipment)	S	XDED	NEWD	1/23/2019	Pass				
AB19BMP000159	2019	665204.4301	1537759.07	13-IM-5500	AB91BMP000096	Harder's Ind Pl Lot 3-6 Pond	S	XDED	NEWD	1/23/2019	Pass				
AB19BMP000160	2019	665419.55	1538883.81	13-IM-5500	AB91BMP000097	Harder's Ind Pl Lot 3-6 Recharge Facility	S	Recharge *	NEWD	1/23/2019	Pass				
AB19BMP000162	2019	665069.9999	1537830	13-IM-5500	AB91BMP000099	Harder's Ind Pl Lot 3-6	E	MSWG	NEWD	1/23/2019	Pass				
AB19BMP000164	2019	664121.53	1543322.58	13-IM-5500	AB91BMP000143	Pier One Imports	S	XDED	NEWD	3/20/2019	Pass				
AB19BMP000166	2019	665905.9999	1544278	13-IM-5500	AB92BMP000032	B&D Trucking Lot 1 + VFE	S	ITRN	NEWD	1/10/2019	Pass				
AB19BMP000167	2019	667031.1774	1540489.95	13-IM-5500	AB92BMP000069	Frito-Lay Hickory Ridge lot 2 Pond	S	IBAS	NEWD	11/2/2018	Pass				
AB19BMP000168	2019	667231.1945	1540537.081	13-IM-5500	AB92BMP000078	Frito-Lay Hickory Ridge lot 2 Micro-Bioretentation MB 9	S	MMBR	NEWD	8/10/2018	Pass				AB92BMP000078 changed to AB14BMP000078
AB19BMP000169	2019	678942.4305	1547980.052	13-IM-5500	AB92BMP000180	Windemere Estates WQ	S	WQ	NEWD	10/1/2020	Fail				Defunct HOA. Never maintained.
AB19BMP000170	2019	665640	1538760	13-IM-5500	AB93BMP000092	Harder's Ind Pl Lot 1 Pond A	S	XDED	NEWD	1/23/2019	Pass				
AB19BMP000171	2019	670985.5706	1544901.565	13-IM-5500	AB93BMP000119	Meadows at Bar Kess	S	XDED	NEWD	1/16/2020	Pass				
AB19BMP000172	2019	673161.6118	1548489.374	13-IM-5500	AB93BMP000128	Aberdeen Senior Center	S	ITRN	NEWD	8/10/2018	Pass				
AB19BMP000173	2019	665541.8451	1543836.964	13-IM-5500	AB94BMP000013	Aberdeen Industrial Center Lot 3a (B.E.K. Services)	S	ITRN	NEWD	1/24/2019	Pass				
AB19BMP000174	2019	663737.9399	1541222.559	13-IM-5500	AB94BMP000044	C&S (Camden Cold Storage)JC Sect 2	S	XDED	NEWD	12/5/2018	Pass				
AB19BMP000175	2019	673556.1321	1542814.22	13-IM-5500	AB94BMP000022	Woodland Green	S	XDED	NEWD	10/2/2019	Pass				
AB19BMP000176	2019	673270.719	1542842.479	13-IM-5500	AB94BMP000024	Woodland Green	S	PWED	NEWD	10/4/2019	Pass				
AB19BMP000178	2019	676574.5061	1543828.263	13-IM-5500	AB95BMP000157	Shell (Texaco aka Crown Station) Aberdeen Market Place	S	WQ Ext Det	NEWD	7/26/2018	Pass				
AB19BMP000179	2019	666150.1129	1544078.956	13-IM-5500	AB95BMP000161	VFW Old Philadelphia Road (Aberdeen Memorial)	S	XDED	NEWD	1/10/2019	Pass				
AB19BMP000180	2019	678276.6801	1548931.696	13-IM-5500	AB95BMP000169	Windemere Estates WQ	S	WQ	NEWD	10/1/2020	Pass				Defunct HOA. Never maintained.
AB19BMP000181	2019	677891.615	1548415.614	13-IM-5500	AB95BMP000169	Windemere Estates WQ	S	WQ	NEWD	10/1/2020	Fail				Defunct HOA. Never maintained.
AB19BMP000182	2019	666000.3809	1543988.055	13-IM-5500	AB96BMP000033	B&D Trucking Lot 2	S	ITRN	NEWD	1/10/2019	Pass				
AB19BMP000183	2019	670655.7001	1543656.53	13-IM-5500	AB96BMP000033	Bob Evans	S	IBAS	NEWD	2/6/2019	Pass				
AB19BMP000184	2019	675497.6001	1544330.1	13-IM-5500	AB96BMP000156	Sant's Paving	S	XDED	NEWD	3/17/2020	Pass				
AB19BMP000185	2019	671394.3701	1551915.67	13-IM-5500	AB96BMP000165	Water Quality Enhancement (Step Pool)	A	SPSC	NEWD	1/7/2019	Pass				
AB19BMP000186	2019	667251.0001	1540340	13-IM-5500	AB97BMP000064	Fairborn Senior Housing	S	XDED	NEWD	1/21/2020	Pass				
AB19BMP000187	2019	667529.2141	1541661.081	13-IM-5500	AB97BMP000104	Hickory Ridge lot 1 Pond 1b (SAKS 5th Avenue)	S	XDED	NEWD	1/7/2019	Pass				
AB19BMP000188	2019	665749.9998	1546097	13-IM-5500	AB97BMP000105	Hickory Ridge lot 1	S	XDED	NEWD	1/10/2020	Pass				
AB19BMP000189	2019	669887.922	1547335.232	13-IM-5500	AB97BMP000108	Hinder, Lands of	E	MSWG	NEWD	2/12/2020	Pass				
AB19BMP000190	2019	676250.0002	1548750	13-IM-5500	AB97BMP000120	Meadows of Bar Kess Townhouses	S	ITRN	NEWD	1/16/2020	Pass				
AB19BMP000191	2019	676772.6012	1544434.752	13-IM-5500	AB97BMP000159	Target Store SWM (pond and 3 basins)	S	XDED	NEWD	1/22/2019	Pass				
AB19BMP000192	2019	668036.5871	1542117.863	13-IM-5500	AB98BMP000103	Hickory Ridge lot 1 Pond 1b (SAKS 5th Avenue)	S	XPED	NEWD	1/25/2019	PASS				
AB19BMP000193	2019	676881.5662	1544150.036	13-IM-5500	AB98BMP000155	Royal Farm Store	S	XOTH	NEWD	2/22/2019	Pass				
AB19BMP000194	2019	664725.9999	1541090	13-IM-5500	AB98BMP000160	Alpark Owner (Formerly T I P Facility) (GE Trailer Fleet Services)	S	XDED	NEWD	1/10/2020	Pass				
AB19BMP000195	2019	673360	1548620	13-IM-5500	AB98BMP000176	Woland Dental	S	XDED	NEWD	8/13/2018	Pass				
AB19BMP000196	2019	665206.333	1544786.648	13-IM-5500	AB98BMP000204	Aberdeen Industrial Lot 3 (Trap 1)	S	XOTH	NEWD	1/24/2019	Pass				
AB19BMP000197	2019	665124.4693	1544446.82	13-IM-5500	AB98BMP000205	Aberdeen Industrial Lot 3 (Trap 2)	S	XOTH	NEWD	1/24/2019	Pass				
AB19BMP000198	2019	664847.6152	1544550.785	13-IM-5500	AB98BMP000206	Aberdeen Industrial Lot 3 (Trap 3)	S	XOTH	NEWD	1/24/2019	Pass				
AB19BMP000199	2019	676212.8519	1543626.914	13-IM-5500	AB99BMP000090	Harco FCU Aberdeen Marketplace lot 5	S	WQ Basin	NEWD	7/26/2018	Pass				
AB19BMP000200	2019	671815.6921	1552581.632	13-IM-5500	AB100BMP000190	Aberdeen WWP Stormwater Bioretention Basin (BRB-2)	S	FBO	NEWD	9/11/2020	Pass				
AB19BMP000201	2019	677486.0932	1542244.679	13-IM-5500	AB09BMP000191	Walgreens Bayview	S	XDED	NEWD	1/10/2020	Pass				
AB19BMP000202	2019	675781.5339	1542163.589	13-IM-5500	AB93BMP000199	Seven Eleven West Bel Air Avenue	S	XOTH	REDE	7/26/2018	Pass				
AB19BMP000203	2019	676634.2133	1541823.978	13-IM-5500	AB05BMP000220	Olive Tree Plaza 2	S	XOTH	NEWD	2/12/2020	Pass	4/1/2020	4/1/2020		
AB19BMP000204	2019	682707	1555845	13-IM-5500	AB08BMP000270	Woods at Rock Glen WQ 1	S	XDED	NEWD	8/24/2020	Pass				
AB19BMP000205	2019	670236.1608	1553070.448	13-IM-5500	AB17BMP000218	North Gate Stone Recharge Trench #1	S	FNDO	NEWD	7/23/2020	Pass				
AB19BMP000206	2019	670014.488	1553125.755	13-IM-5500	AB17BMP000239	North Gate Stone Recharge Trench #2	S	FNDO	NEWD	6/30/2020	Pass				
AB19BMP000207	2019	677232.2469	1544056.432	13-IM-5500	AB18BMP000280	Middleton Holdings Starbuck MB1	E	MMBR	NEWD	1/29/2021	Pass				NEW
AB19BMP000208	2019	677249.2078	1543977.716	13-IM-5500	AB18BMP000281	Middleton Holdings Starbuck MB2	E	MMBR	NEWD	1/29/2021	Pass				NEW
AB19BMP000209	2019	677215.8719	1543919.727	13-IM-5500	AB18BMP000282	Middleton Holdings Starbuck MB3	E	MMBR	NEWD	1/29/2021	Pass				NEW
AB19BMP000210	2019	679818.9379	1547623.899	13-IM-5500	AB88BMP000272	Windemere Farms Phase 1 WQ	S	WQ	NEWD	9/30/2020	FAIL				Defunct HOA. Never maintained.
AB19BMP000211	2019	680030.1425	1547335.812	13-IM-5500	AB88BMP000273	Windemere Farms Phase 1 WQ	S	Water Quality	NEWD	9/30/2020	FAIL				Defunct HOA. Never maintained.
AB19BMP000214	2019	669703.6	1547193.55	MORCWA0408	AB19BMP000215	Hickory Ridge Lot 3 (LPS)	E	MMBR	NEWD	1/10/2020	PASS				NEW
AB19BMP000215	2019	669703.6	1547193.55	MORCWA0408	AB19BMP000226	Hickory Ridge Lot 3 (LPS)	E	MMBR	NEWD	1/10/2020	PASS				NEW
AB19BMP000216	2019	669703.6	1547193.55	MORCWA0408	AB19BMP000227	Hickory Ridge Lot 3 (LPS)	E	MMBR	NEWD	1/10/2020	PASS				NEW
AB19BMP000217	2019	669703.6	1547193.55	MORCWA0408	AB19BMP000228	Hickory Ridge Lot 3 (Trap 2)	E	MMBR	NEWD	1/10/2020	PASS				NEW
AB19BMP000218	2019	669703.6	1547193.55	MORCWA0408	AB19BMP000229	Hickory Ridge Lot 3 (LPS)	E	MMBR	NEWD	1/10/2020	PASS				NEW
AB19BMP000219	2019	666600	1543250	MORCWA05Q	AB18BMP000269	Aberdeen Xchange SWM Wet Pond	S	WPWS	NEWD	7/22/2020	Pass				
AB19BMP000220	2019	67912.3481	1544277.541	MORCWA0271	AB18BMP000266	Summerlin SWM Pond 1	S	XDPD	NEWD	7/23/2020	Pass				
AB19BMP000221	2019	679138.158	1547337.184	MORCWA0271	AB18BMP000267	Summerlin SWM Pond 2	S	XDPD	NEWD	7/23/2020	Pass				
AB19BMP000222	2019	678834.722	1544300.495	MORCWA0271	AB18BMP000263	Summerlin SWM Forebay #1	S	XOTH	NEWD	7/23/2020	Pass			</	



Table B.1.a. BMP Reporting Requirements

BMP ID	REPORTING YEAR		NO NORTH	NO EAST	PERMIT NUM	LOCAL BMP#	CDM NAME	BMP CLASS	BMP TYPE	CDM PURPOSE	LAST INSP DATE	BMP STATUS	MAIN DATE	REINSP DATE	REINSP STATUS	GEN COMMENTS
AB20BMP000085	2020		655880.7242	1544579.455	MDRCHM03VN	AB17BMP0002001	Aberdeen Logistics ES018	E	MMBR	NEW						NEW
AB20BMP000086	2020		666036.1915	1544456.354	MDRCHM03VN	AB17BMP0003002	Aberdeen Logistics ES019	E	MMBR	NEW						NEW
AB20BMP000087	2020		666845.9169	1545478.399	MDRCHM03VN	AB17BMP0003003	Aberdeen Logistics ES020	E	MSWB	NEW						NEW
AB20BMP000088	2020		666715.26	1545550.571	MDRCHM03VN	AB17BMP0003004	Aberdeen Logistics ES021	E	MSWB	NEW						NEW
AB20BMP000089	2020		666422.3171	1544430.051	MDRCHM03VN	AB17BMP0003005	Aberdeen Logistics ES022	E	MSWG	NEW						NEW
AB20BMP000090	2020		665765.2055	1545209.282	MDRCHM03VN	AB17BMP000298	Aberdeen Logistics Infiltration Pond #1	S	IBAS	NEW						NEW
AB20BMP000091	2020		667036.5078	1545889.929	MDRCHM03VN	AB17BMP000299	Aberdeen Logistics Detention Pond #2	S	PWED	NEW						NEW
AB20BMP000092	2020		665644.1674	1545949.236	MDRCHM03VN	AB17BMP000296	Aberdeen Logistics Pretreatment Forebay1	S	FSND	NEW						NEW
AB20BMP000093	2020		666019.7765	1545435.167	MDRCHM03VN	AB17BMP000296	Aberdeen Logistics Pretreatment Forebay2	S	FSND	NEW						NEW
AB20BMP000094	2020		666952.3108	1545794.35	MDRCHM03VN	AB17BMP000297	Aberdeen Logistics Pretreatment Forebay3	S	FSND	NEW						NEW
AB20BMP000095	2020		665670.7533	1544817.141	MDRCHM03VN	AB17BMP000283	Aberdeen Logistics ES01	E	MMBR	NEW						NEW
AB20BMP000096	2020		665711.681	1544875.085	MDRCHM03VN	AB17BMP000284	Aberdeen Logistics ES02	E	MMBR	NEW						NEW
AB20BMP000097	2020		665739.8919	1544923.008	MDRCHM03VN	AB17BMP000285	Aberdeen Logistics ES03	E	MMBR	NEW						NEW
AB20BMP000098	2020		665785.8698	1544980.907	MDRCHM03VN	AB17BMP000286	Aberdeen Logistics ES04	E	MMBR	NEW						NEW
AB20BMP000099	2020		665821.7477	1545038.898	MDRCHM03VN	AB17BMP000287	Aberdeen Logistics ES05	E	MMBR	NEW						NEW
AB20BMP000100	2020		666865.0862	1545084.144	MDRCHM03VN	AB17BMP000288	Aberdeen Logistics ES06	E	MMBR	NEW						NEW
AB20BMP000101	2020		665921.2105	1545147.022	MDRCHM03VN	AB17BMP000289	Aberdeen Logistics ES07	E	MMBR	NEW						NEW
AB20BMP000102	2020		665969.8055	1545215.039	MDRCHM03VN	AB17BMP000290	Aberdeen Logistics ES08	E	MMBR	NEW						NEW
AB20BMP000103	2020		666010.7109	1545270.448	MDRCHM03VN	AB17BMP000291	Aberdeen Logistics ES09	E	MMBR	NEW						NEW
AB20BMP000104	2020		666066.7892	1545328.255	MDRCHM03VN	AB17BMP000292	Aberdeen Logistics ES010	E	MMBR	NEW						NEW
AB20BMP000105	2020		666112.8364	1545393.759	MDRCHM03VN	AB17BMP000293	Aberdeen Logistics ES011	E	MMBR	NEW						NEW
AB20BMP000106	2020		666156.313	1545454.215	MDRCHM03VN	AB17BMP000294	Aberdeen Logistics ES012	E	MMBR	NEW						NEW
AB20BMP000107	2020		670500	1547250	MDRCHM03BR	AB17BMP000279	NTB Pervious Concrete Facility #3	E	APRP	REDE	10/7/2020	Pass				NEW
AB20BMP000108	2020		666710	1543746	MDRCHM00SQ	AB15BMP000268	Aberdeen Xchange Lot 1 UG Filter	S	FUND	NEW	7/28/2020	Pass				NEW
AB20BMP000109	2020		677106.5135	1541287.566	MDRCHM01F1	AB14BMP000274	Hampton Inn/La Quinta Inn Micro BioRetention 1a	E	MMBR	REDE	11/3/2020	Pass				NEW
AB20BMP000110	2020		677148.813	1541218.763	MDRCHM01F1	AB14BMP000275	Hampton Inn/La Quinta Inn Micro BioRetention 2a	E	MMBR	REDE	11/3/2020	Pass				NEW
AB20BMP000111	2020		677266.9893	1541167.027	MDRCHM01F1	AB8MP000276	Hampton Inn/La Quinta Inn Bioswale 2b	E	MSWB	REDE	11/3/2020	Pass				NEW
AB20BMP000112	2020		680157.85	1549077.862	1990	AB908MP000271	Windemere Estates Pond 2	S	PWED	NEW	10/5/2020	Fail				Defunct HOA. Never maintained.
AB20BMP000113	2020		670500	1547250	MDRCHM03BR	AB20BMP000277	NTB Pervious Concrete Facility #1	E	APRP	REDE	10/7/2020	Pass				NEW
AB20BMP000114	2020		670500	1547250	MDRCHM03BR	AB20BMP000278	NTB Pervious Concrete Facility #2	E	APRP	REDE	10/7/2020	Pass				NEW
AB21BMP000004	2021				MDRCHM03DU	AB17BMP000306	The i-95 Center MB-A	E	MMBR	NEW						
AB21BMP000005	2021				MDRCHM03DU	AB17BMP000307	The i-95 Center MB-B	E	MMBR	NEW						
AB21BMP000006	2021				MDRCHM03DU	AB17BMP000308	The i-95 Center MB-C	E	MMBR	NEW						
AB21BMP000007	2021				MDRCHM03DU	AB17BMP000309	The i-95 Center MB-D	E	MMBR	NEW						
AB21BMP000008	2021				MDRCHM03DU	AB17BMP000310	The i-95 Center MB-E	E	MMBR	NEW						
AB21BMP000009	2021				MDRCHM03DU	AB17BMP000312	The i-95 Center MB-F2	E	MMBR	NEW						
AB21BMP000010	2021				MDRCHM03DU	AB17BMP000313	The i-95 Center MB-F3	E	MMBR	NEW						
AB21BMP000011	2021				MDRCHM03DU	AB17BMP000314	The i-95 Center MB-F4	E	MMBR	NEW						
AB21BMP000012	2021				MDRCHM03DU	AB17BMP000315	The i-95 Center MB-F5	E	MMBR	NEW						
AB21BMP000013	2021				MDRCHM03DU	AB17BMP000316	The i-95 Center MB-G	E	MMBR	NEW						
AB21BMP000014	2021				MDRCHM03DU	AB17BMP000317	The i-95 Center MB-H	E	MMBR	NEW						
AB21BMP000015	2021				MDRCEM03DU	AB17BMP000318	The i-95 Center MB-I	E	MMBR	NEW						
AB21BMP000016	2021				MDRCHM03DU	AB17BMP000319	The i-95 Center MB-J	E		NEW						
AB21BMP000017	2021				MDRCHM03DU	AB17BMP000320	The i-95 Center MB-K	E		NEW						
AB21BMP000018	2021				MDRCHM03DU	AB17BMP000321	The i-95 Center MB-L	E	MMBR	NEW						
AB21BMP000019	2021				MDRCHM03DU	AB17BMP000322	The i-95 Center MB-M	E	MMBR	NEW						
AB21BMP000020	2021				MDRCHM03DU	AB17BMP000323	The i-95 Center MB-N	E	MMBR	NEW						
AB21BMP000021	2021				MDRCHM03DU	AB17BMP000324	The i-95 Center MB-O	E	MMBR	NEW						
AB21BMP000022	2021				MDRCHM03DU	AB17BMP000325	The i-95 Center MB-P	E	MMBR	NEW						
AB21BMP000023	2021				MDRCHM03DU	AB17BMP000326	The i-95 Center MB-Q	E	MMBR	NEW						
AB21BMP000024	2021				MDRCHM03DU	AB17BMP000327	The i-95 Center MB-R	E	MMBR	NEW						
AB21BMP000025	2021				MDRCHM03DU	AB17BMP000328	The i-95 Center MB-S	E	MMBR	NEW						
AB21BMP000026	2021				MDRCHM03DU	AB17BMP000329	The i-95 Center Underground Facility #1	S	FUND	NEW						
AB21BMP000027	2021				MDRCHM03DU	AB17BMP000330	The i-95 Center Underground Facility #2	S	FUND	NEW						
AB21BMP000028	2021				19-08	AB20BMP000341	Liv-N-Wild MB	E	MMBR	REDE						
AB21BMP000029	2021				MDRCHM03DU	AB8MP000311	The i-95 Center MB-F1	E	MMBR	NEW						
AB21BMP000001	2021		677500	1544000	MDRCHM04E2	AB19BMP000368	Middleton Road Ext DISC-1	E	NDRN	NEW	2/10/2021	Pass				
AB21BMP000002	2021		678000	1544000	MDRCHM04E2	AB19BMP000365	Middleton Road Ext GS-1	E	MSWG	NEW	2/10/2021	Pass				
AB21BMP000003	2021		678000	1544250	MDRCHM04E2	AB19BMP000366	Middleton Road Ext GS-2	E	MSWG	NEW	2/10/2021	Pass				
AB21BMP000030	2021		677250	1545750	MDRCHM04E2	AB19BMP000367	Middleton Road Ext GS-3	E	MSWG	NEW	2/10/2021	Pass				

**Table B.1.b. Reporting Requirements for ESD and Structural Practices**

BMP_ID	NUM_BMPS	ON_OFF_SITE	CONVERTED_FROM	BMP_STATUS	BMP_DRAIN_AREA	IMP_ACRES	PE_ADR	APPR_DATE	BUILT_DATE	GEN_COMMENTS
AB19BMP000001	1			ACT	16.60	6.81	0.00		8/18/2000	
AB19BMP000002	1			ACT	30.85	17.08	0.50		6/1/2000	
AB19BMP000003	1			ACT	0.95	0.78	0.00		3/22/2000	
AB19BMP000004	1			ACT	3.11	0.60	N/A		6/1/2000	
AB19BMP000005	1			ACT	4.48	1.54	2.00		6/1/2000	
AB19BMP000006	1			ACT					6/1/2000	
AB19BMP000007	1			ACT	3.00	2.55	0.30		2/14/2000	
AB19BMP000008	1			ACT					2/14/2000	
AB19BMP000009	1			ACT	46.18	2.72	0.00		10/12/2001	
AB19BMP000010	1			ACT	6.63	3.13	0.00		6/1/2001	
AB19BMP000015	1			ACT	5.49	4.33	0.00		1/24/2002	
AB19BMP000017	1			ACT	2.09	1.39	0.00		12/30/2003	
AB19BMP000018	1			ACT	0.65	0.00	0.00		9/16/2003	
AB19BMP000019	1			ACT	7.25	3.99	0.00		1/24/2015	Never constructed as a sand filter. Retrofitted GP #14-06
AB19BMP000020	1			ACT	17.38	4.18	1.00		5/20/2003	
AB19BMP000021	1			ACT	10.37	6.26			1/24/2015	
AB19BMP000022	1			ACT	13.70	5.60	0.00		1/1/2004	
AB19BMP000023	1			ACT	5.23	0.52	2.60		7/19/2002	
AB19BMP000024	1			ACT	4.73	0.01	0.00		7/19/2002	
AB19BMP000025	1			ACT	0.72	0.08	0.00		7/19/2002	
AB19BMP000026	1			ACT	0.47	0.00	0.00		7/19/2002	
AB19BMP000027	1			ACT	2.69	2.30	2.00		9/11/2017	
AB19BMP000028	1			ACT	1.53	1.37	0.50		12/14/2004	
AB19BMP000029	1			ACT	0.19	0.17	1.00		12/14/2004	
AB19BMP000030	1			ACT	0.23	0.21	1.00		12/14/2004	
AB19BMP000031	1			ACT					10/12/2004	
AB19BMP000032	1			ACT					10/12/2004	
AB19BMP000033	1			ACT	0.31	0.10	1.00		6/1/2004	
AB19BMP000034	1			ACT	21.61	17.24	0.00		9/2/2004	
AB19BMP000035	1			ACT		0.49			12/30/2005	
AB19BMP000038	1			ACT	10.39	5.56	0.00		6/1/2005	
AB19BMP000039	1			ACT	0.66	0.65	1.00		10/10/2005	
AB19BMP000040	1			ACT	0.00	0.00			1/12/2000	
AB19BMP000041	1			ACT	0.00	0.00			4/13/2000	
AB19BMP000042	1			ACT	0.78	0.15	1.00		6/1/2005	
AB19BMP000043	1			ACT	5.38	1.21	1.50		9/6/2001	
AB19BMP000045	1			ACT		2.50			1/23/2006	
AB19BMP000046	1			ACT					1/26/2006	
AB19BMP000049	1			ACT					6/1/2006	
AB19BMP000050	1			ACT					7/5/2006	
AB19BMP000051	1			ACT					9/1/2006	
AB19BMP000052	1			ACT					12/12/2006	
AB19BMP000055	1			ACT					1/25/2006	
AB19BMP000057	1			ACT		12.44			8/1/2007	
AB19BMP000058	1			ACT					5/18/2007	
AB19BMP000059	1			ACT					6/1/2007	
AB19BMP000060	1			ACT					6/1/2007	
AB19BMP000062	1			ACT					6/18/2007	
AB19BMP000063	1			ACT	4.58				9/12/2007	
AB19BMP000064	1			ACT		4.98			12/30/2007	

**Table B.1.b. Reporting Requirements for ESD and Structural Practices**

BMP_ID	NUM_BMPS	ON_OFF_SITE	CONVERTED_FROM	BMP_STATUS	BMP_DRAIN_AREA	IMP_ACRES	PE_ADR	APPR_DATE	BUILT_DATE	GEN_COMMENTS
AB19BMP000065	1			ACT		11.62			12/30/2007	
AB19BMP000066	1			ACT					8/10/2007	
AB19BMP000067	1			ACT					8/10/2007	
AB19BMP000072	1			ACT					1/4/2008	
AB19BMP000076	1			ACT					1/28/2008	
AB19BMP000077	1			ACT					1/28/2008	
AB19BMP000078	1			ACT					1/28/2008	
AB19BMP000079	1			ACT					4/3/2008	
AB19BMP000080	1			ACT					9/28/2009	
AB19BMP000082	1			ACT					5/28/2010	
AB19BMP000084	1			ACT					5/28/2010	
AB19BMP000085	1			ACT					5/13/2010	
AB19BMP000086	1			ACT		12.44			10/17/2011	
AB19BMP000087	1			ACT					6/1/2011	
AB19BMP000088	1			ACT		12.44			10/16/2011	
AB19BMP000089	1			ACT					1/6/2012	
AB19BMP000090										
AB19BMP000091										
AB19BMP000092	1			ACT					4/12/2013	
AB19BMP000093	1			ACT					4/12/2013	
AB19BMP000094	1			ACT					8/1/2013	
AB19BMP000096	1			ACT					8/14/2014	
AB19BMP000097	1			ACT	0.36	0.27	2.18		8/14/2014	
AB19BMP000098	1			ACT	0.33	0.27	2.13		8/14/2014	
AB19BMP000099	1			ACT	0.30	0.22	2.16		8/14/2014	
AB19BMP000100	1			ACT	0.55	0.47	2.18		8/14/2014	
AB19BMP000101	1			ACT	0.55	0.44	2.07		8/14/2014	
AB19BMP000102	1			ACT	0.37	0.25	2.21		8/14/2014	
AB19BMP000103	1			ACT	0.37	0.26	2.13		8/14/2014	
AB19BMP000104	1			ACT	0.44	0.36	2.17		8/14/2014	
AB19BMP000105	1			ACT	0.46	0.37	2.40		8/14/2014	
AB19BMP000106	1			ACT	0.45	0.39	2.08		8/14/2014	
AB19BMP000107	1			ACT	0.41	0.37	2.05		8/14/2014	
AB19BMP000108	1			ACT					12/5/2014	
AB19BMP000109	1			ACT					3/19/2014	
AB19BMP000110	1			ACT					3/19/2014	
AB19BMP000111	1									
AB19BMP000112	1			ACT						
AB19BMP000113	1			ACT						
AB19BMP000114	1			ACT		0.16			10/29/2013	
AB19BMP000115	1			ACT		0.15			10/29/2013	
AB19BMP000116	1			ACT		0.05			10/29/2013	
AB19BMP000117	1			ACT		0.05			10/29/2013	
AB19BMP000118	1			ACT	21.09				12/12/2016	
AB19BMP000121	1			ACT					7/20/2017	
AB19BMP000122	1			ACT	2.08				4/24/2017	
AB19BMP000123	1			ACT					12/19/2017	
AB19BMP000125	1			ACT					12/19/2017	
AB19BMP000126	1			ACT		30.08			10/23/2017	
AB19BMP000127	1			ACT					10/13/2017	

**Table B.1.b. Reporting Requirements for ESD and Structural Practices**

BMP_ID	NUM_BMPS	ON_OFF_SITE	CONVERTED_FROM	BMP_STATUS	BMP_DRAIN_AREA	IMP_ACRES	PE_ADR	APPR_DATE	BUILT_DATE	GEN_COMMENTS
AB19BMP000129	1			ACT					1/9/2018	
AB19BMP000130	1			ACT					1/9/2018	
AB19BMP000131	1			ACT					1/9/2018	
AB19BMP000132	1			ACT					1/9/2018	
AB19BMP000133	1			ACT					4/16/2018	
AB19BMP000134	1			ACT					1/11/2019	
AB19BMP000135	1			ACT					1/1/1975	
AB19BMP000136	1			ACT					6/1/1981	
AB19BMP000137	1			ACT					6/1/1985	
AB19BMP000138	1			ACT		9.52			6/1/1986	
AB19BMP000139	1			ACT		0.42			11/1/1987	
AB19BMP000140	1			ACT		1.01			6/1/1989	
AB19BMP000142	1			PASS					6/1/1989	
AB19BMP000143	1			ACT					6/1/1989	
AB19BMP000144	1			ACT		1.60			6/1/1989	
AB19BMP000145	1			ACT					6/12/1989	
AB19BMP000146	1			ACT		2.41			12/30/1989	
AB19BMP000147	1			ACT					6/1/1989	
AB19BMP000148	1			ACT					1/27/1989	
AB19BMP000149	1			PASS					10/5/1990	
AB19BMP000150	1			ACT					2/19/1990	
AB19BMP000151	1			ACT					2/7/1990	
AB19BMP000152	1			ACT					1/6/1997	
AB19BMP000153	1			ACT					10/10/1990	
AB19BMP000154	1			ACT					2/12/1990	
AB19BMP000155	1			ACT		2.40			7/1/1991	
AB19BMP000156	1			ACT					10/2/1991	
AB19BMP000157	1		Replaced with underground pipe storage	ACT					2/17/1991	
AB19BMP000158	1			ACT		0.38			6/1/1991	
AB19BMP000159	1			ACT					9/21/1991	
AB19BMP000160	1			ACT					9/21/1991	
AB19BMP000162	1			ACT					9/21/1991	
AB19BMP000164	1			ACT					2/15/1991	
AB19BMP000166	1			ACT					1/10/1992	
AB19BMP000167	1			ACT					9/8/1992	
AB19BMP000168	1			ACT	0.48	0.42	2.23		8/14/2014	
AB19BMP000169	1			ACT					4/16/1992	
AB19BMP000170	1			ACT		4.95			3/3/1993	
AB19BMP000171	1			ACT					9/30/1993	
AB19BMP000172	1			ACT					1/19/1993	
AB19BMP000173	1			ACT		5.45			12/30/1994	
AB19BMP000174	1			ACT		13.13			12/30/1994	
AB19BMP000175	1			ACT		1.28			11/3/2003	
AB19BMP000176	1			ACT		0.20			11/3/2003	
AB19BMP000178	1			ACT					12/21/1995	
AB19BMP000179	1			ACT					2/28/1995	
AB19BMP000180	1			ACT					7/31/1995	
AB19BMP000181	1			ACT					7/31/1995	
AB19BMP000182	1			ACT					3/31/1996	
AB19BMP000183	1			ACT					6/6/1996	



**Table B.1.b. Reporting Requirements for ESD and Structural Practices**

BMP_ID	NUM_BMPS	ON_OFF_SITE	CONVERTED_FROM	BMP_STATUS	BMP_DRAIN_AREA	IMP_ACRES	PE_ADR	APPR_DATE	BUILT_DATE	GEN_COMMENTS
AB19BMP000184	1			ACT					9/12/1996	
AB19BMP000186	1			ACT					6/5/1997	
AB19BMP000187	1			ACT					6/6/1997	
AB19BMP000188	1			ACT					6/6/1997	
AB19BMP000189	1			ACT		0.72			12/30/1997	
AB19BMP000190	1			ACT					5/30/1997	
AB19BMP000191	1			ACT					9/12/1997	
AB19BMP000192	1			ACT					3/19/1998	
AB19BMP000193	1			ACT		0.59			1/16/1998	
AB19BMP000194	1			ACT					12/17/1998	
AB19BMP000195	1			ACT					6/1/1998	
AB19BMP000196	1			ACT					3/19/1998	
AB19BMP000197	1			ACT					3/19/1998	
AB19BMP000198	1			ACT					3/19/1998	
AB19BMP000199	1			ACT		0.72			12/30/1999	
AB19BMP000200	1			ACT					5/28/2010	
AB19BMP000201	1								9/5/2017	
AB19BMP000202	1			PASS					3/30/1993	
AB20BMP000109	1	ON		ACT	0.66	0.22	1.40	5/7/2015		
AB20BMP000110	1	ON		ACT	0.65	0.27	1.20	5/7/2015		
AB20BMP000111	1	ON		ACT	0.83	0.33	1.01	5/7/2015		
AB20BMP000107	1	ON		ACT		0.04		6/18/2017	7/18/2017	
AB20BMP000095	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000096	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000097	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000098	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000099	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000100	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000101	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000102	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000103	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000104	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000105	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000106	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000084	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000085	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000086	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000087	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000088	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000089	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000060	1	ON		ACT	0.27	0.16		7/11/2018	8/22/2018	
AB20BMP000061	1	ON		ACT	0.46	0.41		7/11/2018	8/22/2018	
AB20BMP000062	1	ON		ACT	0.46	0.35		7/11/2018	8/22/2018	
AB20BMP000063	1	ON		ACT	0.45	0.32		7/11/2018	8/22/2018	
AB20BMP000064	1	ON		ACT	0.46	0.37		7/11/2018	8/22/2018	
AB20BMP000065	1	ON		ACT	0.46	0.36		7/11/2018	8/22/2018	
AB20BMP000066	1	ON		ACT	0.46	0.36		7/11/2018	8/22/2018	
AB20BMP000067	1	ON		ACT	0.46	0.36		7/11/2018	8/22/2018	
AB20BMP000068	1	ON		ACT	0.46	0.36		7/11/2018	8/22/2018	
AB20BMP000069	1	ON		ACT	0.46	0.36		7/11/2018	8/22/2018	

**Table B.1.b. Reporting Requirements for ESD and Structural Practices**

BMP_ID	NUM_BMPS	ON_OFF_SITE	CONVERTED_FROM	BMP_STATUS	BMP_DRAIN_AREA	IMP_ACRES	PE_ADR	APPR_DATE	BUILT_DATE	GEN_COMMENTS
AB20BMP000070	1	ON		ACT	0.45	0.36		7/11/2018	8/22/2018	
AB20BMP000071	1	ON		ACT	0.46	0.36		7/11/2018	8/22/2018	
AB20BMP000072	1	ON		ACT	0.43	0.37		7/11/2018	8/22/2018	
AB20BMP000073	1	ON		ACT		0.32				
AB20BMP000074	1	ON		ACT						
AB20BMP000075	1	ON		ACT	0.19	0.11		7/11/2018	8/22/2018	
AB20BMP000076	1	ON		ACT	0.45	0.35		7/11/2018	8/22/2018	
AB20BMP000077	1	ON		ACT	0.44	0.37		7/11/2018	8/22/2018	
AB20BMP000078	1	ON		ACT	0.42	0.37		7/11/2018	8/22/2018	
AB20BMP000079	1	ON		ACT	0.44	0.29		7/11/2018	8/22/2018	
AB20BMP000080	1	ON		ACT	0.37	0.23		7/11/2018	8/22/2018	
AB20BMP000081	1	ON		ACT	0.40	0.16		7/11/2018	8/22/2018	
AB20BMP000082	1	ON		ACT	0.38	0.25		7/11/2018	8/22/2018	
AB20BMP000083	1	ON		ACT	0.32	0.26		7/11/2018	8/22/2018	
AB20BMP000053	1	ON		ACT	0.50	0.33	2.00	3/30/2018	5/4/2018	
AB20BMP000054	1	ON		ACT	0.54	0.13	2.60	3/30/2018	5/4/2018	
AB20BMP000055	1	ON		ACT	0.86	0.19	1.80	3/30/2018	5/4/2018	
AB20BMP000056	1	ON		ACT	0.54	0.22	2.60	3/30/2018	5/4/2018	
AB20BMP000057	1	ON		ACT	0.25	0.23	2.40	3/30/2018	5/4/2018	
AB20BMP000048	1	ON		ACT	0.60	0.11	0.30	3/30/2018	5/4/2018	
AB20BMP000044	1	ON		ACT		0.27		2/11/2016	12/16/2018	
AB20BMP000045	1	ON		ACT		0.13		2/11/2016	12/16/2018	
AB20BMP000046	1	ON		ACT		0.29		2/11/2016	12/16/2018	
AB20BMP000047	1	ON		ACT		0.15		2/11/2016	12/16/2018	
AB20BMP000028	1	ON		ACT		0.28		2/11/2016	12/16/2018	
AB20BMP000029	1	ON		ACT		0.24		2/11/2016	12/16/2018	
AB20BMP000030	1	ON		ACT		0.07		2/11/2016	12/16/2018	
AB20BMP000031	1	ON		ACT		0.07		2/11/2016	12/16/2018	
AB20BMP000032	1	ON		ACT		0.03		2/11/2016	12/16/2018	
AB20BMP000033	1	ON		ACT		0.03		2/11/2016	12/16/2018	
AB20BMP000034	1	ON		ACT		0.14		2/11/2016	12/16/2018	
AB20BMP000035	1	ON		ACT		0.59		2/11/2016	12/16/2018	
AB20BMP000036	1	ON		ACT		0.14		2/11/2016	12/16/2018	
AB20BMP000037	1	ON		ACT		0.28		2/11/2016	12/16/2018	
AB20BMP000038	1	ON		ACT		0.14		2/11/2016	12/16/2018	
AB20BMP000039	1	ON		ACT		0.11		2/11/2016	12/16/2018	
AB20BMP000040	1	ON		ACT		0.11		2/11/2016	12/16/2018	
AB20BMP000041	1	ON		ACT		0.15		2/11/2016	12/16/2018	
AB20BMP000042	1	ON		ACT		0.14		2/11/2016	12/16/2018	
AB20BMP000043	1	ON		ACT		0.24		2/11/2016	12/16/2018	
AB20BMP000006	1	ON		ACT		0.32		8/15/2018	9/18/2018	
AB20BMP000007	1	ON		ACT		0.16		8/15/2018	9/18/2018	
AB20BMP000008	1	ON		ACT		0.14		8/15/2018	9/18/2018	
AB20BMP000014	1	ON		PASS		0.33	1.95	3/15/2019	4/18/2019	
AB20BMP000015	1	ON		PASS		0.07	2.10	3/15/2019	4/18/2019	
AB20BMP000016	1	ON		PASS		0.32	2.20	3/15/2019	4/18/2019	
AB20BMP000017	1	ON		PASS		0.39	2.36	3/15/2019	4/18/2019	
AB20BMP000018	1	ON		PASS		0.40	2.01	3/15/2019	4/18/2019	
AB20BMP000001	1	ON		ACT						
AB20BMP000002	1	ON		ACT					1/27/2008	

**Table B.1.b. Reporting Requirements for ESD and Structural Practices**

BMP_ID	NUM_BMPS	ON_OFF_SITE	CONVERTED_FROM	BMP_STATUS	BMP_DRAIN_AREA	IMP_ACRES	PE_ADR	APPR_DATE	BUILT_DATE	GEN_COMMENTS
AB20BMP000019	1	ON	2017	ACT		5.52				
AB20BMP000020	1	ON		ACT				2/11/2016	12/16/2018	
AB20BMP000021	1	ON		ACT						
AB20BMP000025	1	ON		ACT		0.66		2/11/2016	12/16/2018	
AB20BMP000026	1	ON		ACT		0.51		2/11/2016	12/16/2018	
AB20BMP000027	1	ON		ACT		0.47		2/11/2016	12/16/2018	
AB20BMP000049	1	ON		ACT	2.04					
AB20BMP000050	1	ON		ACT	2.01			3/30/2018	5/4/2018	
AB20BMP000051	1	ON		ACT	1.58	1.16	1.80	3/30/2018	5/4/2018	
AB20BMP000052	1	ON		ACT	2.01	1.25	1.80	3/30/2018	5/4/2018	
AB20BMP000090	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000091	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000092	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000093	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000094	1	ON		ACT		24.86		10/19/2018	1/3/2019	
AB20BMP000108	1	ON								
AB20BMP000112	1	ON		ACT	14.50				4/25/1990	
AB20BMP000113	1	ON		ACT		0.23		6/18/2017	7/18/2017	
AB20BMP000114	1	ON		ACT		0.02		6/18/2017	7/18/2017	
AB20BMP000003										
AB20BMP000004										
AB20BMP000010	1			ACT						
AB20BMP000011	1			ACT						
AB20BMP000022	1			ACT				2/11/2016	12/16/2018	
AB20BMP000023	1			ACT				2/11/2016	12/16/2018	
AB20BMP000024	1			ACT				2/11/2016	12/16/2018	
AB21BMP000004	1			ACT	0.27	0.16		7/11/2018	8/22/2018	
AB21BMP000005	1			ACT	0.46	0.41		7/11/2018	8/22/2018	
AB21BMP000006	1			ACT	0.46	0.35		7/11/2018	8/22/2018	
AB21BMP000007	1			ACT	0.45	0.32		7/11/2018	8/22/2018	
AB21BMP000008	1			ACT	0.46	0.37		7/11/2018	8/22/2018	
AB21BMP000009	1			ACT	0.46	0.36		7/11/2018	8/22/2018	
AB21BMP000010	1			ACT	0.46	0.36		7/11/2018	8/22/2018	
AB21BMP000011	1			ACT	0.46	0.36		7/11/2018	8/22/2018	
AB21BMP000012	1			ACT	0.46	0.36		7/11/2018	8/22/2018	
AB21BMP000013	1			ACT	0.45	0.36		7/11/2018	8/22/2018	
AB21BMP000014	1			ACT	0.46	0.36		7/11/2018	8/22/2018	
AB21BMP000015	1			ACT	0.43	0.37		7/11/2018	8/22/2018	
AB21BMP000016	1			ACT		0.32				
AB21BMP000017	1			ACT	0.19	0.11		7/11/2018	8/22/2018	
AB21BMP000018	1			ACT	0.45	0.35		7/11/2018	8/22/2018	
AB21BMP000019	1			ACT	0.44	0.37		7/11/2018	8/22/2018	
AB21BMP000020	1			ACT	0.42	0.37		7/11/2018	8/22/2018	
AB21BMP000021	1			ACT	0.44	0.29		7/11/2018	8/22/2018	
AB21BMP000022	1			ACT	0.37	0.23		7/11/2018	8/22/2018	
AB21BMP000023	1			ACT	0.40	0.16		7/11/2018	8/22/2018	
AB21BMP000024	1			ACT	0.38	0.25		7/11/2018	8/22/2018	
AB21BMP000025	1			ACT	0.32	0.26		7/11/2018	8/22/2018	
AB21BMP000026	1			ACT				7/11/2018	8/22/2018	
AB21BMP000027	1			ACT				7/11/2018	8/22/2018	

**Table B.1.b. Reporting Requirements for ESD and Structural Practices**

BMP_ID	NUM_BMPS	ON_OFF_SITE	CONVERTED_FROM	BMP_STATUS	BMP_DRAIN_AREA	IMP_ACRES	PE_ADR	APPR_DATE	BUILT_DATE	GEN_COMMENTS
AB21BMP000028	1				0.09	0.08		2/28/2020		
AB21BMP000029	1			ACT	0.46	0.36		7/11/2018	8/22/2018	
AB21BMP000001	1			ACT			1.00	3/1/2019	4/16/2019	
AB21BMP000002	1			ACT	0.80	0.54		3/1/2019	4/16/2019	
AB21BMP000003	1			ACT	0.92	0.26	2.56	3/1/2019	4/16/2019	
AB21BMP000030	1			ACT	0.00	0.15	1.00	3/1/2019	4/16/2019	



**Table B.1.c Reporting Requirements for Alternative BMPs**

[illegible]



## **CITY OF ABERDEEN**

### **National Pollutant Discharge Elimination System General Permit For Discharges From Small Municipal Separate Storm Sewer Systems**

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500

Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

## **FISCAL YEAR 2021 MS4 GENERAL PERMIT PROGRESS REPORT YEAR 3**

# **ATTACHMENT I-4**

## **PHASE II MS4 RESTORATION ACTIVITY SCHEDULE**

*NOTE: Also Provided Electronically as an Email Attachment to this Report.*

Phase II MS4 Restoration Activity Schedule									
Total Acreage (988.51); Impervious Acre Baseline (969.05); 20% Restoration Target (193.81 acres)									
Type of Restoration Project	BMP Code <sup>1</sup>	BMP ID (Optional)	Cost (\$k) <sup>2</sup>	Imperv Acres Treated	Imperv Acre Target and Balance	Project Status <sup>3</sup>	Year Complete or Projected Implementation Year (by 2025)	MD Grid Coordinates (Northing/Easting)	
					193.81				
Stream Restoration	STRE	SR_1 (Planning ID)	TBD	10.6	183.21	P	2025	670514.76	1543273.78
Stream Restoration	STRE	SR_2 (Planning ID)	TBD	147.1	36.11	P	2025	679229.12	1543386.49
Stream Restoration	STRE	SR_9 (Planning ID)	TBD	46.5	-10.39	P	2025	672947.24	1552896.19

<sup>1</sup> See Appendix B, Tables B.1.a,b, and c, Urban BMP Database. BMP codes are identified under "MDE BMP Classification"

<sup>2</sup> Provide cost at project completion

<sup>3</sup> Project Status: Enter P for planning and design, UC for under construction, and C for complete

Enter Impervious Acreage Baseline	969.05
20% Impervious Acre Target Calulated	193.81



## **CITY OF ABERDEEN**

### **National Pollutant Discharge Elimination System General Permit For Discharges From Small Municipal Separate Storm Sewer Systems**

General Discharge Permit No. 13-IM-5500 / General NPDES No. MDR055500  
Effective Date: October 31, 2018 / Expiration Date: October 30, 2023

## **FISCAL YEAR 2021 MS4 GENERAL PERMIT PROGRESS REPORT YEAR 3**

## **ATTACHMENT I-5**

### **SR-1, SR-2, SR-9**

## **STREAM SITE ASSESSMENT AND CONCEPT DESIGNS MEMORANDUM**





## PROJECT MEMORANDUM (Revised)

TO: Parley Hess  
City of Aberdeen Department of Public Works  
Engineering Division  
60 North Parke  
Aberdeen, Maryland 21001

FROM: Bruce Thompson  
KCI Technologies, Inc.  
Water Resources

DATE: September 30, 2021

SUBJECT: Chesapeake Bay Restoration Requirement  
Stream Site Assessment and Concept Designs  
SR-1, SR-2, and SR-9  
KCI Job Number: 17158575G

### Work Completed Under This Task:

KCI Technologies, Inc. (KCI) has completed the site assessment, data collection, and concept development for three potential restoration sites for the City of Aberdeen. Additionally, potential grant funds were evaluated. The Watershed Assistance Grant Program (WAGP) administered through the Chesapeake Bay Trust (CBT) appears to be the most applicable grant. Site visits were conducted to SR-2 and SR-9 with the DNR grant point of contacts. The attached reports are formatted in part to prepare for the WAGP grant applications slated for late 2021.

Table 1. Summary of Work Completed

Description	SR1	SR2	SR9
Budget Estimates	√	√	√
Trilogy Letters	√	√	√
USGS Streamstats Hydrology	√	√	√
Visual Assessments	√	√	√
Wetland Delineations	√	√	√
Forest Stand Delineations	√	√	√
Invasive Baseline Assessment	√	√	√
BANCS or P5 Data Collection	√	√	√
Sediment Sampling	√	√	√
Geomorphic Survey	√		√
Upland BMP Site ID	√	NA	√
Assessment, concept design, NRI Report	√	√	√
P1/P5 Credit Comps	√	√	√
Concept Design and NRI Mapping	√	√	√
Grant Field Walk		√	√

Needed Property Owner Coordination:

SR-1, SR-2, and SR-9 all require additional coordination with private property owners to obtain permission for access, construction, and monitoring and maintenance. Having strong partnerships and support letters is critical for successful grant applications. The table below summarizes the property owners and potential coordination required for each of the restoration sites.

Table 2. Property Owner Coordination

Property Owner	Outstanding Coordination
<b><i>SR-1 Elementary School</i></b>	
Board of Education	Access was allowed on the property for site assessment. The City needs to ensure they will allow access and construction on site and offer partnership for the school for outreach and education. The City needs to know if there are any additional restrictions with working on school property, such as time of year restrictions.
Holly Circle Townhouses LLC	In order to resolve the issues at this site, the erosion issues at the property line need to be addressed. The fence would need to be reset and the headcuts at the fence line would need to be stabilized, thus this property owner would need to give the City permission for access and construction. They did not respond to the initial field assessment request. Partnership with this property owner is required to proceed. A support letter is recommended. Additionally there is potential for adding a Bioretention cell in this property, which would also alleviate downstream flow issues. If the restoration BMP is pursued, long term maintenance by the City with access agreements from the land owner, or maintenance by the land owner would be required.
<b><i>SR-2 Summerlin</i></b>	
NMR LLC	This owner owns the land that includes approximately 1,925LF of the upstream extent of this project in addition to the additional tributaries. They did not respond to the initial field assessment request. Permission for access and construction is required to proceed with the upstream half of the proposed project. A support letter from the land owner is recommended.
Summerlin Development LLC	The site would likely be accessed through this property and coordination with the property owner would be necessary. Construction will also occur along the northern edge of the property. Opportunities for signage and outreach may be beneficial for grant funding with a support letter from the community.
Aberdeen Senior Housing Inc.	If the restoration includes stabilization of the pond outfall, coordination with this owner would be necessary.
MDOT SHA	Construction will begin at the culvert running under I-95, which outfalls onto SHA property. Access would need to be coordinated so the stabilization could begin directly at the outfall.
Joseph and Paul Hardy (84 Lumber Yard)	A small portion of bank stabilization is required on the tributary on the western side of the property. If this bank stabilization is included, coordination with this owner would be necessary.
<b><i>SR-9 Wastewater Treatment Plant</i></b>	
Spring Valley MHC LLC	Access was allowed on the property for site assessment. Permission for access and construction is required. Easements or access agreements for post construction monitoring and maintenance would be required as well. Opportunities for signage and outreach may be beneficial for grant funding with a support letter from the community.
Old Post Holdings LLC	The proposed bioretention cells upstream in this property, provide additional EIA credits and offer outreach and education to a diverse and underserved socio-disadvantaged community. Permission from the land owner for access and construction is required. Opportunities for signage and outreach will be beneficial for grant funding with a support letter from the community. Long term maintenance by the City with access agreements from the land owner, or maintenance by the land owner would be required.
Aberdeen Town Commissioners	While this is City owned property, the roads are frequently utilized by City employees. Notification of construction and roadway constraints should be coordinated.
Utilities	There are utilities near the Post Road proposed bioretention cell. Miss Utility should be called to locate them prior to survey. Further coordination with utilities may be required.

#### Equivalent Impervious Acre (EIA) Credits:

MDE guidance for determining EIA Credit for stream restoration projects has evolved over the last seven years. Under the 2018 Phase II MS4 permit, permittees may use either the planning rate method or the more recent site-specific method to compute EIA credits, whichever is most advantageous.

The *planning rate* method in accordance with MDE's memorandum from April 30, 2019, provides EIA credit for stream restoration at a rate of 0.02 ac/ LF if the project is within the Coastal Plain physiographic region and 0.03 ac/LF if the project is within the Piedmont physiographic region.

The most recent guidance, MDE's 2020 'Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated', requires *site specific* information including site specific sediment sampling and site assessments for the prevented sediment protocols (Protocols 1 and 5). The computed EIA credits apply a 50% efficiency per the 2020 'Consensus Recommendations for Improving the Application of the Prevented Sediment Protocol for Urban Stream Restoration Projects Built for Pollutant Removal Credit.' Post construction monitoring may result in additional credits by justifying a greater than 50% efficiency (some report 65-85% efficiency for restoration projects). Note, Protocols 2, 3, and 4 may also generate credits in addition to those presented below.

Table 3 below summaries the estimated credit potential for the three restoration sites based on the planning rate and site-specific methods for stream restoration and selects the optimal of the two. Upland BMP credits for SR-1 and SR-9 are based on restoration BMP credit calculated following the 2020 Accounting Guidance.

Table 3. Equivalent Impervious Acre Credit Potential

Site	Approximate LF of Restoration	Physiographic Region	Site Specific Credit (ac)	Planning Rate Credit (ac)	Selected Project Credit (ac)
SR-1	400	Coastal Plain	4.6	8.0	8.0
SR-1 Upland BMP*	N/A	Coastal Plain	2.6	N/A	2.6
SR-2	3856	Piedmont	23.5	115.7	115.7
SR-2 Pond Trib	72	Piedmont	0.6	2.2	2.2
SR-2 Wetland Swale	28	Piedmont	3.2	0.8	3.2
SR-2 Upstream Trib	577	Piedmont	26.0	17.3	26.0
SR-9	1635	Coastal Plain	38.7	32.7	38.7
SR-9 Upland BMP*	N/A	Coastal Plain	7.8	N/A	7.8
<b>TOTAL</b>	<b>6568</b>		<b>107</b>	<b>187.1</b>	<b>204.1</b>

#### Next Steps:

To bring these projects to fruition and be most competitive for the identified grant funding, the sites require the following in preparation for a Fall 2021 grant application to seek design and permitting funds: pre-application meetings with the agencies, property permission and support letters, refined cost estimates for design and construction, and preparation of grant applications. If successful, grant funds would be awarded in Spring 2022 and allow for topographic survey and detailed design and drafting to be completed by Spring or Fall 2023. Following the permit phase, grant applications for construction implementation can be pursued.

If you should have any questions regarding this memo feel free to contact me at (410) 382-9567 or shannon.lucas@kci.com.

Enclosure:

SR-1 Assessment and Concept Design Report and Mapping  
SR-1 Natural Resource Inventory Letter Report and Mapping  
SR-2 Assessment and Concept Design Memo  
SR-2 Natural Resource Inventory Letter Report and Mapping  
SR-9 Assessment and Concept Design Memo  
SR-9 Natural Resource Inventory Letter Report and Mapping