



Stormwater Management Facility Corrective Action Plan

U.S. Army Garrison, Fort Belvoir
Fort Belvoir, Virginia
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Sign-off Sheet

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Abbreviations

BMP	Best Management Practice
CAP	Corrective Action Plan
DEQ	Virginia Department of Environmental Quality
DPW	Fort Belvoir Directorate of Public Works
ENRD	Environmental and Natural Resources Division
I&M	Inspections and Maintenance
MCM	Minimum Control Measure
MS4	Municipal Separate Storm Sewer System
O&M	Operations & Maintenance
SWM	Stormwater Management
TMDL	Total Maximum Daily Load
USACE	United States Army Corps of Engineers
VPDES	Virginia Pollutant Discharge Elimination System
VSMP	Virginia Stormwater Management Program
WIP	Watershed Implementation Plan
WLA	Wasteload Allocation

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1.0 BACKGROUND

Stantec Consulting Services Inc. (Stantec), formerly Williamsburg Environmental Group, Inc. (WEG), was contracted by the U.S. Army Corps of Engineers (USACE) to provide technical services to Fort Belvoir in order to assist in meeting Stormwater Management (SWM) facility operations and maintenance requirements under the Commonwealth of Virginia *General VPDES Permit For Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems* (Small MS4 General Permit).

The following laws and regulations apply and can be found on the Virginia Department of Environmental Quality (DEQ) website: *Virginia Erosion and Sediment Control Law* (Virginia Code §§10.1-560 through 572) and the implementing regulations (9VAC25-840 and 9VAC25-850); the *Virginia Stormwater Act* (Virginia Code §§10.1-603.2 through 603.15) and *Virginia Stormwater Management Program (VSMP) Regulations* (9VAC25-870) and *General VPDES Permit For Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems* (9VAC-25-890).

Fort Belvoir consists of Fort Belvoir Main Post, and 5 non-contiguous parcels. Main Post consists of 7,800 acres in the Mount Vernon area of Fairfax County. Fort Belvoir North Area (FBNA) is 804 acres in the Springfield area of Fairfax County. Mark Center is 16 acres in within the City of Alexandria. Rivanna Station is 76 acres in the Charlottesville area of Albemarle County. Two radio towers are also Fort Belvoir's property located in Tyson's Corner, Virginia and Suitland, Maryland. Stormwater facility inspections will take place at Main Post, North Area, and Rivanna Station.

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2.0 INTRODUCTION

Fort Belvoir obtained continued coverage under the Small MS4 General Permit #VAR040093 effective July 1, 2013 to June 30, 2019. The permit requires the implementation of Best Management Practices (BMPs) to address six Minimum Control Measures (MCMs):

- MCM #1:** Public Education and Outreach on Stormwater Impacts
- MCM #2:** Public Involvement/Participation
- MCM #3:** Illicit Discharge Detection and Elimination
- MCM #4:** Construction Site Stormwater Runoff Control
- MCM #5:** Post-Construction Runoff Control
- MCM #6:** Pollution Prevention/Good Housekeeping for Municipal Operations

The purpose of this document is to present and discuss implementation of one of the BMPs for **MCM #5**, which requires that Fort Belvoir provide for adequate long-term operation and maintenance of post-construction stormwater management facilities in accordance with the Small MS4 General Permit. In March of 2013, Fort Belvoir developed and submitted to the DEQ a MS4 Program Plan as part of the Registration Statement for coverage under the VPDES General Permit for Small MS4. Section 6.5 of the program plan outlines the six BMPs (numbered 5.1 to 5.6) proposed by Fort Belvoir for compliance with MCM #5.

BMP 5.3 of Fort Belvoir's MS4 Program Plan details one practice that Fort Belvoir is implementing to comply with MCM 5, and includes a Measurable Goal, Reporting and Record Keeping, and Responsible Party for implementation. The BMP is addressed as follows:

BMP 5.3 Initiate Periodic Site Inspections.

Fort Belvoir personnel are certified inspectors and visit active construction sites once every two weeks. Large construction projects may be supported by contract personnel that submit reports to ENRD and the project construction supervisor.

- o **Measurable Goal:** Establish periodic inspection procedures to determine adherence to the approved design plans and to observe status of BMP. *Establish periodic inspection procedures to determine adherence to the approved design plans and to evaluate performances of BMPs and/or engineering controls.* Requires site inspectors to be Virginia Certified Stormwater Inspectors. Perform site inspections of 100% of active construction projects and 10% of post-construction projects (per year).
- o **Reporting and Record Keeping:** In the annual report, include copies of the inspection results.

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- o **Responsible Party:** DPW ENRD

In year one of the Small MS4 General Permit (July 1, 2013 – June 30, 2014), Fort Belvoir contracted Stantec to conduct and document baseline inspections of the existing post-construction stormwater BMPs serving Fort Belvoir to aid in the evaluation of "*performances of BMPs and/or engineering controls.*" Based upon the results of the inspections, Stantec developed this Corrective Action Plan (CAP), which identifies maintenance deficiencies for 317 post-construction stormwater BMPs and proposed corrective actions necessary for continued operation and maintenance of the facilities as intended.

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3.0 BMP INVENTORY AND INSPECTIONS

Between January 25, 2014, and April 27, 2014, Stantec staff completed inspections of 317 stormwater structures at Fort Belvoir and determined that there are 241 stormwater management facilities or BMPs amongst the 317 structures. The difference between the number of stormwater structures and the number of stormwater management facilities or BMPs is due to some facilities having multiple structures identified in prior inventories (pipes, vaults, manhole, access ports, cells, etc.) Also, new stormwater management BMPs were identified that were not included in the prior inventory of stormwater structures. In the end, multiple structures were grouped together and new facilities added to the inventory for a total of 241 BMPs.

Inspections were conducted and documented in accordance with the "General Plan for Stormwater Management Facility Inspection and Maintenance" (I&M Plan) developed for and accepted by Fort Belvoir in September of 2013. The General Plan identifies and discusses the categories or types of post-construction stormwater BMPs existing at Fort Belvoir, and provides information on inspections and maintenance of BMPs. The table below summarizes the general types and distribution of the 241 BMPs inspected at Fort Belvoir in 2014.

During the baseline maintenance inspections, inspection checklists were completed and digital images collected to establish and document the functionality of each BMP at the time of inspection. Copies of the original field inspection checklists are included in digital format on a CD-ROM in **Appendix A Field Inspection Reports**.

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BMP Types and Numbers at Fort Belvoir

Type	Number	% of Total
Underground Storage	42	17%
Extended Detention	33	14%
Tree Box Filter	30	12%
Bioretention Filter	26	11%
Bioretention	23	10%
Detention	21	9%
Filter Cartridges	15	6%
Retention	9	4%
Hydrodynamic	8	3%
Enhanced Extended Detention	7	3%
Permeable Pavers	6	2%
Green Roof (Extensive)	5	2%
Infiltration Basin	4	2%
Constructed Wetlands	3	1%
Cistern	2	1%
Porous Cement	2	1%
Sand Filter	2	1%
Wet Swale	2	1%
Green Roof (Intensive)	1	0%
Total	241	100%

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3.1 BMP CONDITION RATING SYSTEM

Based on the findings from the inspections, each BMP condition was rated in accordance with the system developed in the Fort Belvoir stormwater structure inventory and presented in the I&M Plan. The following scale is currently used by Fort Belvoir DPW to grade BMPs based on functionality. Each structure is rated on a scale from 1 to 5 during maintenance inspections. The condition ratings correspond with the following definitions:

- Condition 1:** Fully Functional. Structure/Facility is not in need of non-routine maintenance and is operating as designed/intended. Continue routine maintenance.
- Condition 2:** Minor Structural or Functional defects. Operates to design specifications. Preventative or non-routine maintenance required.
- Condition 3:** Acceptable/Anticipated Structural & Functional Deterioration. Operating effectively. Preventative or non-routine maintenance required.
- Condition 4:** Major Structural or Functional defects. Preventative or non-routine maintenance required.
- Condition 5:** Structurally/Functionally Deficient. In need of immediate replacement or rehabilitation.

It should be noted that another database developed by the USACE for reporting compliance with the Chesapeake Bay Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) and Watershed Implementation Plans (WIPs) also has a rating system with five conditions that run from A to E and correspond to the Fort Belvoir Inventory and I&M Plan rating system of 1 to 5. For the purpose of this CAP document, the Fort Belvoir Inventory rating system above of 1 to 5 is used throughout.

Condition ratings are useful for prioritizing and scheduling maintenance activities and follow-up inspections. Given limited resources to operate and maintain BMPs, it is critical to focus attention on the BMPs in the worst condition first.

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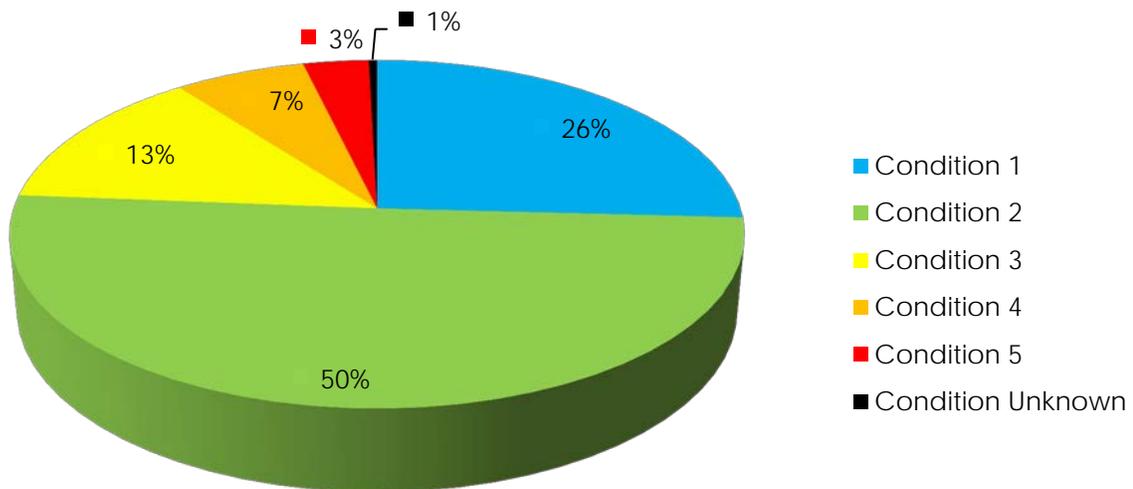
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3.2 RESULTS

The table in **Appendix B Summary Table of Deficiencies and Recommended Corrective Actions** summarizes the results of the baseline inspections conducted by Stantec in 2014, including the BMP condition ratings for 2010/2011 (from a prior stormwater structure inventory) and 2014; deficiencies identified in 2014; and recommended corrective actions for deficiencies identified in 2014. The summary table is sorted based upon the 2014 BMP condition ratings, followed by the 2011 condition ratings, for use in identifying and prioritizing maintenance needs as discussed in Section 4.0 below.

As summarized in the pie chart below, 62 of the 241 BMPs (26%) inspected in 2014 were rated as Condition 1, fully functional. A total of 153 BMPs (63%) were rated as Condition 2 or 3, operating effectively but with minor defects or deterioration that need to be monitored and/or addressed. Only 16 BMPs (7%) were reported as Condition 4, not operating as designed with major defects to be addressed. Lastly, 8 BMPs (3%) were rated as Condition 5, with major deficiencies requiring near-term attention to correct. It should be noted that one BMP (<1%) was rated "Unknown", as it could not be inspected due to changes in configuration.

Summary of BMPs by Rating Condition



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4.0 RECOMMENDATIONS

In addition to reporting the results of inspections and BMP condition, the overall summary table in **Appendix B Summary Table of Deficiencies and Recommended Corrective Actions** also provides recommended corrective actions needed to address deficiencies identified in the field in 2014. For the 26% of the BMPs with a Condition Rating of 1, it is only necessary to continue ongoing routine maintenance activities in order for the facility to continue functioning fully. BMPs rated 2 or 3, which are 63% of the BMPs evaluated in 2014, are operating effectively, but require ongoing monitoring of conditions and/or preventative or non-routine maintenance to address minor deficiencies and preserve their functionality and effectiveness.

Condition 4 BMPs (7%) require preventative or non-routine maintenance to correct deficiencies and bring the facility back to effective or full functionality. The 3% of the BMPs rated as Condition 5 are in need of immediate or near-term evaluation and rehabilitation or replacement to make them functional and preserve the facility. For prioritization purposes, Condition 5 BMPs should be the focus of initial maintenance and rehabilitation efforts, followed by Condition 4. The table below summarizes the Condition 4 and 5 BMPs, lists the deficiencies identified during inspections in 2014, and provides a summary of recommended corrective actions. The list of 2014 Condition 4 and 5 BMPs has been sorted first by the 2-14 condition (5 first, followed by 4), then in order by the prior 2010/2011 Condition Rating to provide a measure of how rapidly the facility appears to have deteriorated.

2014 Condition 4 and 5 BMPs Requiring Near-Term Rehabilitation and Maintenance

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Condition	2014 Structure Condition	2014 Overall BMP Condition	Deficiencies	Corrective Actions
5381	5381	4I	Constructed Wetland	1	5	5	Settling in bends around embankment; erosion along both sides of embankment; gully erosion on backside of embankment; woody species on embankment; DI (principal spillway) fully clogged with vegetative debris; barrel not inspected/observed; inflow manhole cover missing; invasive species present; emergency spillway seems small given size of basin	Repair settling and erosion areas; clear principal spillway blockage; inspect barrel for deficiencies; remove woody vegetation from embankment; overseed upland areas; replace manhole cover; armor embankment with riprap or other protective measures to resist erosion from overtopping; emergency spillway seems small - overtopping likely frequent - consider making ES larger to lessen overtopping amount if feasible; permits need consideration (work in open water/wetland features)
5755	5755	5F	Retention	1	5	5	Major erosion and undercutting along downstream slope of embankment; basin is adjacent to natural channel - embankment is subject to erosive channel flows; rodent burrows along embankment; significant scour in downstream channel	Repair erosion on downstream slope of embankment before failure occurs (permits need consideration, as work is adjacent/within natural stream and wetland system; remove rodents and repair burrows; repair scour in channel below outfall and embankment

2014 Condition 4 and 5 BMPs Requiring Near-Term Rehabilitation and Maintenance

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Condition	2014 Structure Condition	2014 Overall BMP Condition	Deficiencies	Corrective Actions
6954	6954	1C	Bioretention	1	5	5	Large dead tree on embankment; woody species (dead and alive on embankment); cracks in headwall of outfall around pipe (no seepage observed); suds at outfall; 2-3' standing water; active erosion around sideslopes; murky water with sulfur odor present in basin; berm from forebay submerged; observation wells submerged and unable to access for inspection	Stabilize eroding areas; repair cracks in headwall; investigate standing water to determine cause of improper dewatering; inspect observation wells; remove dead vegetation, trash, and debris; replace vegetation that has died to due extended submerged conditions; investigate odor and cause of suds at outfall
7082	7082	8H	Bioretention	1	5	5	4" - 12" standing water in basin; observation wells not visible; bare spots and erosion surrounding basin; E&S measures still installed; inflow pipe partially submerged; sloughing along banks of facility; planted vegetation subjected to extended period of submerged conditions	Investigate to determine cause of unsatisfactory de-watering; repair blockage/issue to re-establish facility as bioretention; replace dead/stressed vegetation; overseed and stabilize bare areas; repair sloughing and areas of erosion; remove E&S measures; clear debris/trash/sediment

2014 Condition 4 and 5 BMPs Requiring Near-Term Rehabilitation and Maintenance

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Condition	2014 Structure Condition	2014 Overall BMP Condition	Deficiencies	Corrective Actions
396	396	9I	Wet Swale	2	5	5	Undercutting/scour at outfall; rill erosion at end of swale; erosive pits along center line of channel; headcut at upstream end; check dams damaged (displaced riprap, looks like not properly keyed in during installation); vertical bank erosion adjacent to roadway (safety issue); leaf debris within BMP; fabric exposed beneath riprap at confluence with natural stream inflow	Repair eroded areas; provide stabilization for bare areas and repair pits within channel; repair headcut at top of swale; clear debris; repair vertical bank erosion and resolve safety concern adjacent to roadway; repair/reinstall check dams properly
5616	5616	6H	Detention	2	5	5	Woody vegetation present on both sides of embankment and within emergency spillway; 6-8' undercutting below outfall pipe into natural channel; vegetation growing around riser; dead vegetation/trash within basin; erosive channel forming to carry flow into basin (adjacent to elementary school playground); invasive species present; riser needs inspection - inaccessible due to fence on day of inspection	Remove woody vegetation from embankment and ES; clear debris from riser; conduct inspection of riser; repair undercutting at outlet (permits need consideration because outfall is to natural channel); clear trash and dead vegetation debris from basin; repair erosive channel entering basin adjacent to playground; overseed bare areas and stabilize other areas of erosion
38	38	8I	Stormwater 360 (Filter Cartridges)	4	5	5	Deep sediment and vegetation growing in grate; stagnant water in chamber; 4' water and sediment; leaf debris; 4 cartridges	Clean sediment and debris; clear grate on surface; investigate cause of standing water to verify no blockage at outlet

2014 Condition 4 and 5 BMPs Requiring Near-Term Rehabilitation and Maintenance

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Condition	2014 Structure Condition	2014 Overall BMP Condition	Deficiencies	Corrective Actions
2926	2926	11H	Detention	4	5	5	3-4 feet standing water present; smell of methane/organics present upwind (strongest near riser); fallen trees in basin; mass wasting as result of trees down; riser crest covered by debris; sediment in outfall pipe and outlet protection; scour at outfall; high water marks within basin; bare areas around basin top; inflow partially submerged	Investigate unsatisfactory de-watering; investigate odor; remove riser crest blockage; remove dead vegetation and repair eroded areas; overseed bare areas; remove sediment from outfall; repair scour at outfall location; investigate high water marks; replace dead vegetation
5645	5645	5H	Detention	4	5	5	No access path to facility; woody and invasive species dominate vegetation; trees fallen (looks like tornado damage) onto safety fence; old CMP riser and barrel in use (appears small for size of facility); scour/headcut in downstream channel; silt fence across channel below outfall; 3-4' incised channel at outfall; erosive channel bypassing facility to confluence	Clear woody vegetation from embankment and safety fence; inspect riser/barrel for deficiencies and investigate sizing - repair/replace if necessary; add access path; repair erosive bypass channel; correct outfall scour; repair headcut in channel and remove silt fence from stream (permits necessary - in live watercourse); remove debris and sediment from basin
937	937	10J	Extended Detention	1	4	4	Woody vegetation present on embankment; inadequate groundcover around and within basin; primary orifice blocked by tree branch; high water mark 8" above current WSE; water is cloudy/muddy; significant trash/debris in basin; leakage around seal of low flow pipe connected to riser	Clear riser orifice blockage; remove sediment/trash/debris from basin and pretreatment; investigate leakage around connection of low flow pipe to riser - repair if necessary; remove woody vegetation from embankment

2014 Condition 4 and 5 BMPs Requiring Near-Term Rehabilitation and Maintenance

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Condition	2014 Structure Condition	2014 Overall BMP Condition	Deficiencies	Corrective Actions
5223	5223	4G	Extended Detention	1	4	4	Woody species present on embankment; vegetation growing around riser; trash rack with water quality orifice plate detached from riser; tree fallen on outfall channel	Remove wood species from embankment; remove vegetation growing around riser; replace trash rack with proper water quality plate/orifice; clear fallen tree from outfall channel
5375	5375	4I	Detention	1	4	4	Silt fence around DI (principal spillway); outfall submerged; settling along dam; woody vegetation on embankment; sediment in outfall pipe; inflow pipe damaged - bypasses riser	Remove silt fence; repair settling; remove woody vegetation from embankment; clean out sediment; repair inflow and reinspect against design plans
5443	5443	4I	Constructed Wetland	1	4	4	Settling on dam crest; woody vegetation on embankment; grate at outlet fully blocked by vegetation; outlet structure damaged; scour and sediment at outfall; invasives present	Remove woody vegetation from embankment; repair settling on dam; remove invasive species; clean and remove debris from principal spillway; investigate need to repair principal spillway structure; provide outlet protection; remove sediment from outfall
5891	5891	10H	Extended Detention	1	4	4	Settling on dam; trees/shrubs/erosion/bare areas on embankment; sediment in riser; possible displaced/offset joint; trash/debris; undercutting and scour at outlet; no outlet protection; erosion/bare areas/sediment in basin	Repair settled areas on dam; repair eroded areas; overseed bare areas to provide better groundcover; repair scour/undercutting and install outlet protection; investigate offset/displaced joint - repair if necessary

2014 Condition 4 and 5 BMPs Requiring Near-Term Rehabilitation and Maintenance

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Condition	2014 Structure Condition	2014 Overall BMP Condition	Deficiencies	Corrective Actions
6024	6024	6I	Retention	1	4	4	Presently appears to serve as temporary sediment basin; construction upslope draining to BMP; bare eroding areas along embankment; vegetation not fully established; debris on water surface; murky water; E&S measures upslope	Once construction complete, configure to intended BMP design; repair eroded areas and overseed bare areas; remove E&S controls within contributing drainage area; remove sediment and debris from basin
6846	6846	1D	Detention	1	4	4	Presently appears to serve as temporary sediment basin; construction upslope draining to BMP; bare eroding areas along embankment; woody vegetation on downslope of dam; noticeably wet area along abutment; displaced riprap at outfall; outfall protection covered with sediment; scour at outfall; vegetation not fully established; debris on water surface; murky water; E&S measures upslope	Once construction complete, configure to intended BMP design; repair eroded areas and overseed bare areas; remove E&S controls within contributing drainage area; remove woody vegetation from embankment; remove sediment and debris from basin; clean sediment from outlet protection and repair outlet protection; investigate seepage along abutment
6900	6900	1B	Infiltration Basin	1	4	4	Originally thought to be retention basin; holding water; debris at low flow orifice of riser; erosion/bare areas on sideslopes; sediment deposited below inflow pipe; 2" sediment within inflow pipe; displaced riprap below inflow; invasives; loose sediments washing off access road	Clear riser/inflow debris and sediment; repair inflow outlet protection; stabilize access road; repair eroded areas and stabilize bare sideslopes; remove invasive species; investigate cause of standing water and repair to restore infiltration

2014 Condition 4 and 5 BMPs Requiring Near-Term Rehabilitation and Maintenance

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Condition	2014 Structure Condition	2014 Overall BMP Condition	Deficiencies	Corrective Actions
7200	7200	1C	Extended Detention	1	4	4	Soft embankment soils; woody species and rill erosion on embankment; vegetative growth thick around riser; trash/debris in basin; erosion and rills on sideslopes; significant sediment at inflow pipes; poor groundcover establishment; deep sediment/trash/debris within forebay; adjacent construction underway	Repair eroded areas; overseed to establish better groundcover; remove trash/debris/sediment from basin and forebay; clear vegetation from around riser structure; investigate embankment to verify proper compaction and stability
6783	6783	8G	Underground Storage	4	4	4	Major erosion on ground above facility; collar at manhole access completely separated from standpipe due to erosion/shifting; unsafe to enter to complete inspection; minimal water/sediment observed from surface within system	Access point requires repair; erosion needs to be arrested and repaired; once access is repaired and facility is safe for entry, inspection required to verify functionality of BMP
	6784	8G		1	1		Bare areas on ground surface above BMP; manifold configuration; minimal standing water; 2" sediment; minor rust within 60" CMP pipe; connects to 6785	Overseed bare areas on ground surface

2014 Condition 4 and 5 BMPs Requiring Near-Term Rehabilitation and Maintenance

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Condition	2014 Structure Condition	2014 Overall BMP Condition	Deficiencies	Corrective Actions
1947	1947	13H	Detention	2	4	4	Major bowling erosion and rill erosion near the connection between the riser and old CMP riser; CMP riser is rusted and exposed at connection; rill erosion along upstream embankment and abutments; erosion throughout basin sideslopes and bottom; leaf debris in trash rack; landscaping debris dumped within basin	Inspect and investigate bowling erosion and evaluate condition of CMP pipe - consider replacement; repair all eroded areas and stabilize; remove woody vegetation from embankment; clear debris from riser; remove landscaping debris from basin
4935	4935	7D	Detention	2	4	4	Bare areas along embankment and within basin; woody species along embankment; low flow orifice is perched and water leaks into riser from below the orifice; erosion/scour observed below orifice on outside; scour at outfall; 4-6" sediment deposited at inflow; scour below and along inflow channel; erosion along adjacent parking lot	Repair eroded areas; remove woody vegetation from embankment; inspect riser for leaks/damage - repair/replace as necessary; re-establish low flow orifice; clean sediment from inflow and repair erosion/scour along inflow channel; repair outfall scour and outlet protection; clean adjacent lot of road sediment/salt
5055	5055	4G	Extended Detention	2	4	4	Woody species present on embankment; moist soil near abutment (right side looking downstream on downstream face of dam) - no surface flow visible; trash/debris rack with water quality orifice detached from riser; sediment at barrel invert; suds at outfall; gabion-lined stream banks	Remove woody species; clear sediment from outfall barrel; investigate cause of suds; investigate moisture at abutment; replace trash rack with proper orifice plate

2014 Condition 4 and 5 BMPs Requiring Near-Term Rehabilitation and Maintenance

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Condition	2014 Structure Condition	2014 Overall BMP Condition	Deficiencies	Corrective Actions
1528	1528	11H	Infiltration Basin	4	4	4	Woody species on embankment; rill forming above outfall; trash/debris/sediment in outfall pipe; displaced outlet protection riprap; major undercutting below outfall; trash/debris/standing water in basin; deposition at inflows; invasives present; gnats present	Remove woody species from embankment; repair rill; inspect barrel and soil for subterranean issues that might indicate failure or defects; repair outlet protection and undercutting; investigate standing water; clean trash/debris/sediment from basin and inflows; remove invasives; exterminate gnats
4061	4061	6I	Extended Detention	4	4	4	Major erosion across basin and embankment; riser full of large limbs and debris; dead vegetation and debris prevalent within basin; sideslope failure behind houses within basin; blowout in forebay berm; tree growing in front of inflow pipe; bare areas in immediate surrounding area	Remove debris and sediment from basin and riser; repair areas of erosion within the basin, along the embankment, and within the forebay and forebay berm; remove dead vegetation from basin and replace; stabilize areas surrounding basin; investigate sideslope and forebay berm failures and ensure proper compaction/material is used to re-establish grades
6818	6818	1D	Extended Detention	4	4	4	Appears to have recently been modified/converted from sediment basin; woody species at headwall; no established groundcover within basin; debris covering lowest trash rack on riser; significant sediment at inflows and pipes; adjacent construction; sediment at outfall	Seed to establish groundcover; clear inflows and outfall of sediment; clear debris from trash rack; remove woody vegetation around riser; stabilize contributing drainage area; remove E&S controls once construction complete

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Appendix A Field Inspection Reports (CD-ROM)

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**Appendix B Summary Table of Deficiencies and
Recommended Corrective Actions**

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Structure Condition	2014 Structure Condition	2014 BMP Condition	Deficiencies	Corrective Actions
37	37	8I	Underground Storage	1	1	1	4" water; 1" sediment in CMP pipe	Continue routine maintenance
38	38	8I	Stormwater 360 (Filter Cartridges)	4	5	5	Deep sediment and vegetation growing in grate; stagnant water in chamber; 4' water and sediment; leaf debris; 4 cartridges	Clean sediment and debris; clear grate on surface; investigate cause of standing water to verify no blockage at outlet
42	42	8I	Stormwater 360 (Filter Cartridges)	3	1	1	Leaf debris/sediment on covers; 0.3-0.9' sediment; 1.7-2.2' water; leaf debris in chamber	Continue routine maintenance
47	47	8I	Stormwater 360 (Filter Cartridges)	1	3	3	No-entry to inspect - 3 watersnakes observed; suds/hydrocarbon sheen in pre-treatment vault area; trash/debris present; 3-12" of water, depending upon location in vault system	Investigate cause of sheen and suds in vault; remove snakes and complete inspection to verify functionality; remove trash/debris from vault
69	69	8I	Underground Storage	3	2	2	Ruts around manhole; erosion in immediate contributing drainage area due to construction activity; minor corrosion; 5" water; 0.5" sediment	Stabilize surrounding area; repair ruts; finalize construction; continue routine maintenance
71	71	8I	Underground Storage	3	1	1	1" water; 1" sediment; minor corrosion; ants	Continue routine maintenance
72	72	8I	Stormwater 360 (Filter Cartridges)	3	1	1	20 cartridges; 2' water -very murky (indicates sediment) within pretreatment; 0.5" sediment and 1.5" water around cartridges; leaves	Continue routine maintenance
93	93	8I	Underground Storage	U	2	2	3" sediment; 3" water (murky); significant trash/debris; minor corrosion	Clean sediment and debris; continue routine maintenance
103	103	8I	Stormwater 360 (Filter Cartridges)	2	1	1	1" sediment; 1-4" water; minor leaf/trash debris	Continue routine maintenance
124	119	8I	Stormwater 360 (Filter Cartridges)	2	1	3	Minor corrosion; 1.7' standing water; 1" sediment	Continue routine maintenance; monitor corrosion
	120	8I		2	2		1-2" sediment; 1" water; spalling on weir wall separating cells	Monitor cracking/spalling in weir wall; continue routine maintenance
	121	8I		2	1		3" standing water; 7 cartridges	Continue routine maintenance
	123	8I		2	1		Minor rust/corrosion within pipe; 1" water; 1" sediment; leaf debris	Continue routine maintenance
	124	8I		N/A	3		3" water; 1" sediment; trash/debris blocking outlet orifice; connected to 121; suds in standing water	Remove trash/debris to free outfall pipe; remove sediment; investigate source of suds on standing water
132	132	8I	Underground Storage	U	2	2	4" standing water; less than 1" sediment; minor corrosion; manhole collar separated from concrete	Repair collar; continue routine maintenance

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139	137	8I	Stormwater 360 (Filter Cartridges)	U	1	2	1" water and 0.5" sediment; minor corrosion	Continue routine maintenance
	138	8I		U	1		0.5-4" of standing water; sediment in grooves of CMP only; minor discoloration/corrosion; leaf debris	Continue routine maintenance
	139	8I		3	2		Floating trash/debris; 4"-24" of standing water; no sediment; 7 cartridges	Remove trash/debris; continue routine maintenance
160	160	8I	Enhanced Extended Detention	1	2	2	Woody vegetation on embankment; trash/debris/sediment/graffiti; scour at outfall; bare areas within basin	Remove woody vegetation; repair outfall scour; oversee to address bare areas within basin; continue routine maintenance
203	203	8I	Enhanced Extended Detention	1	2	2	Woody vegetation on upstream slope; erosion in abutment; debris in inflow pipe; riprap in outflow pipe centerline; trash/debris; displaced riprap at inflow - fabric exposed (bad installation)	Remove invasives, trash, and debris; repair scour protection at inflow; repair erosion at abutment
294	293	8I	Underground Storage	U	1	3	6" water; 1" sediment; 1" gaps at joints, but appears to be intentional as part of construction; trash/debris present	Remove trash, debris, and sediment per routine maintenance
	294	8I		U	3		Sediment 2-12" thick within pipe; collar around manhole disconnected from concrete pad; water heard flowing, but not visually observed	Repair collar at connection to concrete; remove sediment; investigate to ensure water is not leaking
	295	8I		1	2		Minor rust/corrosion within pipe; trash/debris in pipe, 1" sediment; 3" standing water; collar around manhole detached from concrete	Remove trash, debris, and sediment per routine maintenance; repair collar at connection to concrete
296	296	8I	Stormwater 360 (Filter Cartridges)	1	1	1	Hydrocarbon sheen observed (facility adjacent to roadway); 2.5' standing water; no lock on access port; 28 cartridges	Continue routine maintenance; consider adding locking mechanism on access port
297	297	8I	Stormwater 360 (Filter Cartridges)	1	1	1	Hydrocarbon sheen observed (facility adjacent to roadway); 2.5' standing water; no lock on access port; 28 cartridges	Continue routine maintenance; consider adding locking mechanism on access port
298	298	8I	Stormwater 360 (Filter Cartridges)	2	1	1	Debris/trash within cells; 0.1' maximum sediment; 1.8-2.7' water depth; minor cracks/spalling on concrete curb	Continue routine maintenance; monitor concrete

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331	328	8I	Underground Storage	1	2	3	Bare areas within immediate drainage area; minor corrosion; 1" sediment; 4" water; minor trash/debris	Stabilize bare areas within immediate watershed; continue routine maintenance
	330	8I		U	2		Collar separated from concrete; 2-3" sediment depth; significant trash/debris; minor rust	Remove trash/sediment/debris; repair collar
	331	8I		U	3		2" sediment in bottom of pipe; no active flow at time of inspection; matting/fabric hanging down at top of pipe from install; leaf debris	Remove leaf debris and sediment; investigate fabric/matting hanging down to ensure no leakage occurring
	332	8I		U	1		Minor corrosion in pipe; 1" sediment; some leaf debris	Continue routine maintenance
335	335	8I	Stormwater 360 (Filter Cartridges)	U	2	2	Bare areas around port; 2-3" standing water; minor sediment and leaf debris; 12 cartridges	Stabilize bare areas around BMP facility; continue routine maintenance
360	357	9I	Underground Storage	U	2	3	Significant trash/debris within pipe; ants nesting underneath manhole rim; surficial cracks in concrete	Remove trash/debris from system; exterminate ants
	359	9I		U	2		Trash/debris present; collar separated from concrete; 1" sediment; surficial cracks in concrete	Remove trash/debris/sediment from system; repair collar
	360	9I		U	3		Significant trash/debris within pipe; minor rust; manhole collar completely separated from concrete; ladder in access port unstable; 1" standing water	Remove trash/debris from system; repair collar; repair ladder; investigate to ensure pipe has not shifted and caused this damage
364	364	9I	Stormwater 360 (Filter Cartridges)	4	1	1	0.5" water, 1" sediment, and significant leaf debris within chamber; 6 cartridges	Remove trash, debris, and sediment per routine maintenance
374	374	9I	Stormwater 360 (Filter Cartridges)	1	1	1	1.9-2.8' water depth; 0.05-0.15' sediment; leaf debris; minor road sediment on cover	Continue routine maintenance

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391	389	9I	Underground Storage	3	1	3	Minor corrosion in pipe; minor trash/sediment/debris; less than 1" of water and sediment	Continue routine maintenance
	390	9I		3	1		Minor corrosion in pipe; minor trash/sediment/debris; no active flow	Continue routine maintenance
	391	9I		3	2		Throat of CMP into system (access port) is dented and backfill rock is exposed; minor debris and sediment present	Repair access port and continue routine maintenance
	392	9I		3	3		3" moist sediment in bottom of pipe; minor corrosion within system; pipe into access port separating from edges	Evaluate access port to ensure pipe is not shifting; repair access port/collar to prevent safety issue; remove sediment and debris
	393	9I		3	1		2-3" sediment in bottom of pipe; no active flow at time of inspection; concrete pad surrounding manhole cracked on all 4 sides	Continue routine maintenance
396	396	9I	Wet Swale	2	5	5	Undercutting/scour at outfall; rill erosion at end of swale; erosive pits along center line of channel; headcut at upstream end; check dams damaged (displaced riprap, looks like not properly keyed in during installation); vertical bank erosion adjacent to roadway (safety issue); leaf debris within BMP; fabric exposed beneath riprap at confluence with natural stream inflow	Repair eroded areas; provide stabilization for bare areas and repair pits within channel; repair headcut at top of swale; clear debris; repair vertical bank erosion and resolve safety concern adjacent to roadway; repair/reinstall check dams properly

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397	397	8I	Underground Storage	U	1	3	Concrete broken in 2 locations; minor corrosion; perforated CMP; 1-2" sediment; 0.5" water	Continue routine maintenance
	398	8I		U	1		Minor corrosion; 3" water; 1.5" sediment; fish in pipe; perforated	Continue routine maintenance
	399	8I		U	2		Concrete broken at tangents; collar separated from concrete; 0.5" sediment/water; perforated; minor corrosion	Repair concrete; repair collar around manhole; continue routine maintenance
	400	8I		U	2		Collar separated from concrete; concrete cracked at all 4 tangent points to manhole; standpipe shows minor separation at connections; 1.5" sediment; 0.5" standing water; perforated in bottom	Repair concrete; repair collar around manhole; repair standpipe; continue routine maintenance
	401	8I		U	3		Collar separated from concrete; damaged standpipe and access ladder (caused by settling?); 1" sediment; perforated CMP	Repair collar, standpipe, and access ladder; inspect to verify settling not causing issues/threatening system; continue routine maintenance
	402	8I		U	2		Concrete broken at all 4 tangents to manhole; collar pulling away from concrete; minor corrosion; 1-3" water; 0.5" sediment; minor trash/debris	Repair concrete; repair collar around manhole; continue routine maintenance
	403	8I		U	2		Concrete broken in 1 location; collar pulling away from concrete; 2-3" sediment; perforated; trash/leaf debris; minor corrosion	Repair concrete and collar; continue routine maintenance
407	407	8I	Underground Storage	2	2	2	Minor debris; minor sediment; 8" standing water; pollen floating on surface; thin vegetative groundcover on top of facility	Overseed to improve groundcover; continue routine maintenance
408	408	8I	Underground Storage	2	2	2	2" water; 2" sediment; cracks on all 4 sides of manhole in concrete; minor corrosion of pipe	Continue routine maintenance; repair concrete

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415	414	8I	Stormwater 360 (Filter Cartridges)	U	2	2	2' milky/muddy water in pre-treatment chamber; minimal sediment in main vault; 8" sediment in pre-treatment vault; 27 cartridges	Clean pre-treatment storage vault; continue routine maintenance
	415	9I		1	1		Sediment/leaf debris on cover; minor leaf debris/trash inside; 0.1-0.3' sediment; 1.6-2.5' water	Continue routine maintenance
534	534	9I	Extended Detention	1	1	1	Woody vegetation on embankment; deceased vegetation in upland areas; trash/debris in basin	Remove woody vegetation on embankment; replace dead tree in upland area; continue routine maintenance
625	624	10I	Underground Storage	U	2	3	Cracked concrete surrounding manhole; access standpipe separated from sides; 5-6" sediment; minor joint separation in pipe system	Investigate separation at pipe joint connection; repair concrete; repair standing pipe; remove sediment from pipe
	625	10I		U	2		Concrete cracked around manhole; collar not flush with concrete; standpipe separated from sides; 1" water; 1" sediment; minor corrosion	Repair concrete; repair collar; repair standpipe; continue routine maintenance
	626	10I		U	3		Concrete cracked; collar loose; standpipe cracked; perforated pipe; minor sediment/leaf debris; seams at joints may not be watertight	Investigate and repair joints if not watertight; repair collar; repair standpipe
	627	10I		U	2		Vegetation partially conceals manhole; standpipe separated from sides; minor corrosion; dead animal on ladder; odor present from dead animal; minor sediment/water	Remove animal carcass; repair standpipe; continue routine maintenance
797	797	10I	Extended Detention	1	1	1	Access path built in front of pond outfall	Monitor to ensure stable outfall remains intact and unblocked by access; continue routine maintenance
832	832	10I	Extended Detention	1	2	2	Woody vegetation on embankment; significant undercutting/scour below outfall; trash/debris/sediment in basin, forebay, and inflow pipes	Correct the undercutting at the outlet; remove woody vegetation from embankment; continue routine maintenance

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930	930	10J	Bioretention Filter	1	2	2	Trash/debris in basin and observation well; hole in basin bottom from human/rodent	Repair hole; clean out observation well - add debris cap or rack; continue routine maintenance
933	933	10J	Enhanced Extended Detention	1	2	2	Possible clog at outfall; bare areas around basin; trash/debris	Clear clog at outfall pipe; overseed bare areas to establish better ground cover; continue routine maintenance
937	937	10J	Extended Detention	1	4	4	Woody vegetation present on embankment; inadequate groundcover around and within basin; primary orifice blocked by tree branch;	Clear riser orifice blockage; remove sediment/trash/debris from basin and pretreatment; investigate leakage
941	941	10J	Bioretention Filter	N/A	2	2	Trash/debris; leaves in observation well; rill erosion on sideslopes; HDPE inflow damaged by lawnmower	Repair rill erosion; repair inflow pipe; continue routine maintenance
942	942	10J	Bioretention Filter	N/A	2	2	Trash/debris; bare areas around basin and on sideslopes; small cut at toe near inlet; mulch around trees is old	Replace mulch; repair areas of erosion; overseed to establish better groundcover; continue routine maintenance
956	956	10J	Bioretention	1	2	2	Bare areas and rill erosion around basin; debris in inflow pipe	Repair destabilized areas; overseed to establish better groundcover; remove trash/debris
1006	1006	11J	Underground Storage	U	2	2	Bare soil surrounding manhole; 1.5-2" water; trash/debris observed (minor)	Overseed to establish better groundcover; continue routine maintenance
	1007	11J		U	1		Perforated CMP; corroded standpipe; minor trash/corrosion in system; manifold with 1006	Continue routine maintenance
	1008	11J		U	1		Leaf debris; trash in perforated pipes; minor corrosion; manifold with 1006	Continue routine maintenance
	1009	11J		U	1		Minor corrosion; perforated; leaf debris; manifold with 1006	Continue routine maintenance
1018	1017	11I	Underground Storage	3	2	2	2" sediment; bare area surrounding manhole	Overseed to establish better groundcover; continue routine maintenance
	1018	11I		3	2		2" sediment; bare area surrounding manhole; minor corrosion	Overseed to establish better groundcover; continue routine maintenance
	1030	11I		U	2		2" sediment; bare area surrounding manhole; minor corrosion; could not lift manhole to view - inspected from 1017/1018	Overseed to establish better groundcover; continue routine maintenance
1040	1040	11J	Enhanced Extended Detention	2	1	1	Trash/debris present; graffiti and loose ladder within riser (not part of riser construction)	Remove ladder; continue routine maintenance

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1116	1071	11I	Underground Storage	U	2	4	Significant trash/debris within system; 4-5" leaf debris/sediment mixture; vegetative debris in outfall from system; bare areas within contributing drainage area	Stabilize upstream areas; remove trash/debris/sediment from system; clear vegetation from outfall
	1072	11I		U	2		60" CMP; collar separated from concrete; 1-2" sediment; 1 layer of bottles/cans - saturated; minor corrosion in pipe; disturbed area upslope	Repair collar/concrete connection; stabilize upslope areas; continue routine maintenance
	1073	11I		U	2		60" CMP; minor cracks in concrete around manhole; 1-2" sediment; minor trash/debris; minor leaf debris accumulation; disturbed area upslope	Stabilize upslope area; continue routine maintenance
	1074	11I		U	3		Bare areas around manhole; disturbed area upslope of BMP due to newly built sidewalk; sediment suspended - deposits of sediment approximately 0.25" deep; spalling concrete above inflow location; rebar exposed; 60" perforated PVC	Stabilize areas around manhole and upslope of BMP; clean sediments out of pipe/vault; repair spalling concrete and cover exposed rebar; re-inspect to ensure repair is solid, stable, and complete
	1075	11I		U	2		2" water in system; multiple inflow/outfall points; disturbed area surrounding manholes from recent sidewalk construction; no inlet protection in place	Stabilize surrounding area; put inlet protection in place until contributing drainage area is fully stabilized
	1076	11I		U	3		Minor separation/twisting in standpipe; minor corrosion; 1-2" saturated sediment; trash/debris present; odor present	Repair standpipe; inspect to verify damage not caused by geotechnical issues and that pipe is not at risk; clear sediment/trash/debris and investigate cause of odor
	1077	11I		U	3		Collar separated from concrete; 0.5" sediment/water; trash/debris; minor corrosion; connection in pipe visually appears to be twisted	Repair collar; inspect joint connect to verify damage not critical - repair or replace if necessary; continue routine maintenance
	1078	11I		U	3		Collar separated from concrete; torsion/separation in CMP standpipe; ladder disconnected on one side; trash/debris; minor corrosion; 1-2" sediment; leaf debris	Repair collar; repair standpipe; repair ladder; investigate to verify settling is not causing issues/threatening system
	1079	11I		U	4		Twisted CMP standpipe; trash/debris within system; 1-2" water and sediment; pipe visually appears to be sagging towards center - not circular like parallel pipes	Investigate sagging condition - if structurally deficient, replace pipe in system; remove sediment and debris; repair access standpipe

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	1080	11I		U	2		Collar separated from concrete; minor dent/damage/twisting and bottom, loose end of standpipe; 2" sediment; trash/debris; minor	Repair collar; repair standpipe; continue routine maintenance
	1081	11I		1	1		Minor trash/debris; 1.5" sediment; minor corrosion	Continue routine maintenance
	1098	11I		2	2		Collar not flush with concrete; some standpipe separation; 1" sediment; minor corrosion	Repair collar; repair standpipe; continue routine maintenance
	1116	11I		U	2		Some standpipe damage; 3 oversized, non-perforated CMP pipes; minimal water, sediment, and corrosion; leaf debris	Repair standpipe; continue routine maintenance
1083	1083	11I	Hydrodynamic	U	1	1	1.7' water; trash/debris surround device and prevalent near outlet pipe	Continue routine maintenance
1100	1100	11I	Hydrodynamic	U	2	2	1.6-2' water; significant trash/debris around device; inadequate groundcover around manhole	Stabilize area around manhole - overseed; clear trash and debris from chamber
1118	1118	11I	Hydrodynamic	U	2	2	Access covered in concrete - difficult to open; 1.6' water depth; significant trash/debris in chamber; loose sediment/debris from recent sidewalk construction	Stabilize surrounding area; remove concrete from around manhole; clear trash/debris from chamber
1266	1266	12I	Extended Detention	2	2	2	Trees on embankment near abutments; debris/sediment on basin floor; sideslopes eroding; debris at inflow; sediment in forebay; vegetation growing in forebay weirs; erosion at connection between weir at earth	Remove woody species from embankment; repair erosion at forebay weirs and within basin; clean forebay of sediment and debris; remove vegetation from forebay weirs
1373	1373	12I	Extended Detention	2	2	2	Erosion along basin slopes; minor scour below outlet; trash/debris present	Repair erosion; repair scour below outfall; clear trash/debris

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1392	1392	12I	Extended Detention	1	2	2	Woody species on embankment; bare areas on sideslopes; branch and graffiti in riser; scour at outlet; debris at inflow; murky water in forebay; bare areas/ruts along top of slope	Remove trash/debris/sediment from basin and riser; repair erosion; repair ruts at top of slope; repair scour; clean forebay
1528	1528	11H	Infiltration Basin	4	4	4	Woody species on embankment; rill forming above outfall; trash/debris/sediment in outfall pipe; displaced outlet protection riprap; major undercutting below outfall; trash/debris/standing water in basin; deposition at inflows; invasives present; gnats present	Remove woody species from embankment; repair rill; inspect barrel and soil for subterranean issues that might indicate failure or defects; repair outlet protection and undercutting; investigate standing water; clean trash/debris/sediment from basin and inflows; remove invasives; exterminate gnats
1779	1779	13I	Bioretention	1	1	1	No issues observed	Continue routine maintenance
1824	1824	12I	Detention	N/A	1	1	Newly constructed; no issues observed	Continue routine maintenance
1947	1947	13H	Detention	2	4	4	Major bowling erosion and rill erosion near the connection between the riser and old CMP riser; CMP riser is rusted and exposed at connection; rill erosion along upstream embankment and abutments; erosion throughout basin sideslopes and bottom; leaf debris in trash rack; landscaping debris dumped within basin	Inspect and investigate bowling erosion and evaluate condition of CMP pipe - consider replacement; repair all eroded areas and stabilize; remove woody vegetation from embankment; clear debris from riser; remove landscaping debris from basin
1962	1962	12H	Detention	1	2	2	Bare areas/erosion along downstream slope; debris at low orifice of riser; riprap displaced at outfall; minor trash/debris in inflow	Repair erosion; overseed bare areas; clear trash/debris; repair outlet protection
2108	2108	9H	Underground Storage	N/A	1	1	Surficial cracks in concrete; minor separation in standpipe joints; minor corrosion in system; 0.5" standing water; 2" sediment/leaf debris	Continue routine maintenance
2140	2140	12H	Detention	3	3	3	Woody vegetation adjacent to riser; vegetation growing through trashracks; erosion along fence line; sediment at inflow pipes; barrel not inspected through fence	Barrel requires inspection; woody vegetation and vegetation needs to be removed from riser and trash racks; clear sediment from inflow pipes; repair eroded areas around basin

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2237	2237	9H	Underground Storage	N/A	3	3	4.5' standing water - murky/cloudy/stagnant; 6"+ sediment; minor visible debris in 40" CMP; spalling along weir wall towards outfall; scour at outfall location - minimal riprap in place on surface of adjacent pond; trash/debris from UG discharged onto surface of pond	Clean sediment and debris; inspect for blockages; improve the outlet protection with more riprap or larger size riprap; repair spalling on weir wall
2265	2265	9H	Underground Storage	N/A	3	3	Minor trash/debris in system; rebar exposed near outlet; connected to storm sewer system manhole cover missing at junction; large tree fallen on junction; 6" water depth in system; 0.5" sediment depth; minor damage where standpipes connect to main BMP; 48" CMP pipes in parallel system	Investigate rebar to ensure intentional part of design (i.e. trash/debris rack); replace manhole cover; remove fallen tree and inspect outfall pipe for any damage; repair damage to standpipes
2266	2266	9H	Underground Storage	N/A	2	2	Bare soil around manhole and in immediate vicinity of BMP; 2-4" sediment depth within 48" CMP pipe manifold system; water mixed in with sediment; debris and minor corrosion	Overseed surrounding areas to establish better groundcover; continue routine maintenance
2347	2334	9H	Underground Storage	U	1	3	Minor corrosion; less than 1" sediment/debris; trash/debris in outlet pipe	Clear debris from outlet; continue routine maintenance
	2335	9H		U	1		Minor corrosion; slight bend/dent at connection between standpipe and system; 1" sediment; 1" water	Continue routine maintenance and inspections
	2336	9H		U	1		Less than 0.5" sediment; minor water only in 54" CMP grooves	Continue routine maintenance
	2338	9H		U	1		Minor gash in concrete; 60" CMP inflow, 36" CMP outlet pipe; 1.5-4" water, 1-4" sediment and leaf debris	Continue routine maintenance
	2339	9H		U	1		3" water; 1.5-3" sediment; leaf debris/sediment	Continue routine maintenance
	2340	9H		U	2		4-5" sediment; 3" water; odor present; spalling at concrete at curb inlet draining to BMP	Clean sediment; repair spalling concrete; investigate source of odor
	2343	9H		U	3		Concrete cracked on all 4 sides of manhole; collar separated from concrete; no entry to perform full inspection due to presence of cross-bars blocking standpipe; water visible in pipe	Repair concrete; repair collar around manhole; UG inspection should be completed at future date when access is possible
	2344	9H		1	1		6-12" water near inflow; 1.5-4" sediment depth; 66" CMP pipe	Continue routine maintenance
	2347	9H		2	1		1-2" sediment and water mixed in 66" CMP pipe	Continue routine maintenance

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2423	2416	9H	Underground Storage	U	1	2	Concrete cracked in two locations around manhole; minor corrosion; minor trash/debris in 60" CMP pipe; minor sediment	Continue routine maintenance
	2417	9H		U	2		Concrete cracked in two locations around manhole; collar around manhole loose; minor corrosion and damage to standpipe - pipe pulled away from concrete slightly; layer of cans/bottles in bottom of 60" pipe; some sediment mixed in with trash/debris	Repair manhole collar and concrete pad; repair standpipe; continue routine maintenance
	2419	9H		U	1		1-2" trash/sediment/debris and 1" water in 60" CMP; 2-3" trash and 1" sediment near 36" outlet pipe	Continue routine maintenance
	2420	9H		U	2		Minor cracking/spalling inside concrete chamber; graffiti inside; 2-3" standing water; 6" leaf debris; sediment mixed in	Repair cracks/spalling; clean sediment and leaf debris; use bolt or lock mechanism to deter unauthorized entry
	2421	9H		U	2		Minor damage (crimping) to standpipe and 48" CMP perforated pipe; minor leaf debris/trash present; 1" water; 1" sediment; odor present	Repair dents (crimping) in standpipe and UG facility; clear trash/debris/sediment; investigate odor
	2422	9H		U	2		Sits unlevel on ground surface (installation issue); collar separated from concrete; standpipe dented and some corrosion present; minor trash/debris; 48" partially perforated CMP pipe	Repair collar; repair standpipe; continue routine maintenance
	2423	9H		2	2		Minor spalling in concrete; floatables observed; stale odor present; 1.5-2" water; 0.5" sediment	Clean trash/debris; investigate source of odor; investigate source of floatables
2492	2492	3G	Extended Detention	1	2	2	Minor trash/debris/sediment in riser; bare areas along sideslopes and within outfall channel; debris below inflow pipe from historic blowout/flushing creates adverse grade (no outlet protection or pool visible); inflow pipe partially submerged	Clear trash/debris/sediment from riser; remove debris below inflow and re-establish pool/outlet protection; oversee to establish better groundcover

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2504	2502	3G	Underground Storage	U	1	1	Accessed sediment vault to inspect; no entry made; minor pipe corrosion visible from surface; 2" sediment; almost no trash/debris; trickle flow present; no settling observed	Continue routine inspections, maintenance, and cleaning
	2503	3G		U	1		Accessed sediment vault to inspect; no entry made; minor pipe corrosion visible from surface; 2" sediment; almost no trash/debris; trickle flow present; no settling observed	Continue routine inspections, maintenance, and cleaning
	2504	3G		U	1		Accessed sediment vault to inspect; no entry made; minor pipe corrosion visible from surface; 2" sediment; almost no trash/debris; trickle flow present; no settling observed	Continue routine inspections, maintenance, and cleaning
	2505	3G		U	1		Accessed sediment vault to inspect; no entry made; minor pipe corrosion visible from surface; 2" sediment; almost no trash/debris; trickle flow present; no settling observed	Continue routine inspections, maintenance, and cleaning
	2506	3G		U	1		Accessed sediment vault to inspect; no entry made; minor pipe corrosion visible from surface; 2" sediment; almost no trash/debris; trickle flow present; no settling observed	Continue routine inspections, maintenance, and cleaning
2735	2735	9G	Enhanced Extended Detention	1	2	2	Bare areas and woody species on embankment; stabilization needed around outfall pipe; erosion along access path for basin; trash/debris present; invasives present	Remove woody species from embankment; repair erosion; overseed bare areas; remove invasives; continue routine maintenance
2831	2831	11I	Extended Detention	2	2	2	Woody vegetation on embankment; high water marks around basin; trash/debris in basin and outfall	Remove woody vegetation from embankment; monitor high water marks; continue routine maintenance
2926	2926	11H	Detention	4	5	5	3-4 feet standing water present; smell of methane/organics present upwind (strongest near riser); fallen trees in basin; mass wasting as result of trees down; riser crest covered by debris; sediment in outfall pipe and outlet protection; scour at outfall; high water marks within basin; bare areas around basin top; inflow partially submerged	Investigate unsatisfactory de-watering; investigate odor; remove riser crest blockage; remove dead vegetation and repair eroded areas; overseed bare areas; remove sediment from outfall; repair scour at outfall location; investigate high water marks; replace dead vegetation

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3028	3028	8H	Bioretention	1	2	2	Trash/debris present; erosion around DI and sloughing on sideslopes; mulch depleted	Overseed bare areas to establish better groundcover; repair areas of erosion and sloughing; continue routine maintenance
3036	3036	8H	Bioretention	1	1	1	Riser top separated from standpipe	Move riser top to proper location; continue routine maintenance
3038	3038	8H	Bioretention	1	3	3	Scour around riser - indication of leak; ruts on facility surface; sediment on surface; bare spots; trash/debris present	Repair scour around riser and investigate for leaks - repair riser if necessary; overseed to better establish groundcover; repair ruts; continue routine maintenance
3039	3039	8H	Tree Box Filter	3	2	2	Large amount of sediment/debris on surface and at inlet; displaced mulch; sediment too deep to open observation wells; scour below inlet opening	Continue routine maintenance; open observation wells and inspect for standing water/sediment; repair scour
3044	3044	8H	Bioretention	1	1	1	Saturated media; mulch depleted	Continue routine maintenance
3054	3054	8H	Bioretention	3	2	2	Erosion around DI structure; bare areas across facility	Overseed bare areas to establish better groundcover; repair areas of erosion; continue routine maintenance
3058	3058	8H	Bioretention	1	3	3	Blocked inflows from roof drains; erosion/settling near riser; some standing water/saturated media; adjacent lot has loose debris/sediment on surface	Clean adjacent lot; repair erosion & settling; clear inflow pipes from roof drains; investigate standing water/saturated media
3082	3082	8H	Bioretention	1	2	2	Bare areas; undercutting around riser; mulch depleted; rodent hole observed	Repair undercutting; overseed bare areas; repair rodent hole; continue routine maintenance
3087	3087	8H	Bioretention	3	3	3	Depleted mulch; debris in riser and outfall; standing water/saturated media	Investigate standing water/saturated media; continue routine maintenance
3089	3089	8H	Bioretention	1	2	2	Minor debris accumulation on surface; undercutting around DI structure	Repair undercutting around DI; continue routine maintenance
3091	3091	8H	Bioretention	1	1	1	Minor trash/debris; mulch depleted	Continue routine maintenance
3096	3096	8H	Tree Box Filter	3	3	3	Significant sediment/debris on surface and at inlet; flow paths forming below inlet; mulch needs replacement; dead tree/stressed tree; lot used for parking work vehicles - covered by sediment	Remove debris/sediment; erosion at inlet opening; replace mulch; replace dead tree/stressed tree; clear sediment from lot; clean vehicles prior to parking within lot
3097	3097	8H	Tree Box Filter	3	2	2	Significant sediment/debris on surface and at inlet; flow paths forming below inlet; mulch needs replacement; lot used for parking work vehicles - covered by sediment	Remove debris/sediment; erosion at inlet opening; replace mulch; clear sediment from lot; clean vehicles prior to parking within lot

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3107	3101	8H	Underground Storage	U	1	2	Road sediments on surface of parking lot - caught in between manhole and collar; 1" gap between inflow and connection to 66" CMP pipe (appears intentional); minor leaf debris; 0.5-1.5" sediment in pipe; large construction/delivery vehicles noted in lot previously	Clean road sediments from parking lot; lot and pipes do not currently show evidence of settling/stress, but caution should be used if parking vehicles in lot for extended time to prevent heavy static loads from resting on the UG system
	3102	8H		U	2		Road sediments on surface of parking lot - caught in between manhole and collar - very difficult to open and access; 1" gap between inflow and connection to 66" CMP pipe (appears intentional); minor leaf debris; 0.5-1.5" sediment in pipe; large construction/delivery vehicles noted in lot previously; standpipe in access damaged/separated	Clean road sediments from parking lot; clean manhole and collar; lot and pipes do not currently show evidence of settling/stress, but caution should be used if parking vehicles in lot for extended time to prevent heavy static loads from resting on the UG system; repair separation in standpipe
	3107	8H		U	2		Road sediments on surface of parking lot - caught in between manhole and collar - very difficult to open and access; 1" gap between inflow and connection to 66" CMP pipe (appears intentional); minor leaf debris; 0.25-1" sediment in pipe; large construction/delivery vehicles noted in lot previously; standpipe in access damaged/separated	Clean road sediments from parking lot; clean manhole and collar; lot and pipes do not currently show evidence of settling/stress, but caution should be used if parking vehicles in lot for extended time to prevent heavy static loads from resting on the UG system; repair separation in standpipe
	3108	8H		U	2		Road sediments on surface of parking lot - caught in between manhole and collar - very difficult to open and access; 1" gap between inflow and connection to 66" CMP pipe (appears intentional); minor leaf debris; 0.5-2" sediment in pipe; large construction/delivery vehicles noted in lot previously; small separation at one joint within pipe - outside seal appears intact and no evidence of leakage	Clean road sediments from parking lot; clean manhole and collar; lot and pipes do not currently show evidence of settling/stress, but caution should be used if parking vehicles in lot for extended time to prevent heavy static loads from resting on the UG system; repair separation in joint to prevent future leaks

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Structure Condition	2014 Structure Condition	2014 BMP Condition	Deficiencies	Corrective Actions
	3109	8H		U	2		Road sediments on surface of parking lot - caught in between manhole and collar - very difficult to open and access; 1" gap between inflow and connection to 66" CMP pipe (appears intentional); minor leaf debris and corrosion; 1" sediment in pipe; large construction/delivery vehicles noted in lot previously	Clean road sediments from parking lot; clean manhole and collar; lot and pipes do not currently show evidence of settling/stress, but caution should be used if parking vehicles in lot for extended time to prevent heavy static loads from resting on the UG system
	3110	8H		U	1		Road sediments on surface of parking lot - caught in between manhole and collar; 1" gap between inflow and connection to 66" CMP pipe (appears intentional); minor leaf debris; 0.5-1.5" sediment in pipe; large construction/delivery vehicles noted in lot previously	Clean road sediments from parking lot; lot and pipes do not currently show evidence of settling/stress, but caution should be used if parking vehicles in lot for extended time to prevent heavy static loads from resting on the UG system
3105	3105	8H	Tree Box Filter	3	2	2	Large amount of sediment/debris on surface and at inlet; scour below inlet opening; displaced mulch	Remove sediment/debris and replace mulch; continue routine maintenance; repair scour below inlet opening
3258	3258	8G	Detention	N/A	2	2	Soft soils; terracing and rill erosion near riser; many bare areas within basin and upslope; vegetation covering trash rack; scour downstream; displaced riprap; sediment in basin, inflow, and outlet protection for inflow; trash/debris/sediment at forebay	Repair eroded areas; oversee bare areas to establish better groundcover; clean debris/sediment/trash from riser, basin, inflow; and forebay; repair scour at outfall and outlet protection
3354	3354	7G	Extended Detention	2	2	2	Major undercutting near riser; bare areas throughout basin; dead vegetation blocking grate on riser; riser contains layer of sediment; woody vegetation within emergency spillway; sediment accumulation at inflow pipe	Repair undercutting near riser; repair erosion throughout basin; clear debris and sediment from within and on grate of riser; remove woody vegetation from emergency spillway; clear sediment at inflow
3446	3446	7G	Underground Storage	N/A	1	1	Minimal corrosion observed in pipe; less than 1" of sediment/debris measured from surface; part of manifold system; no entry of person into BMP - partially in active travel way	Inspection with proper traffic controls should be conducted to verify condition of pipe; no settling within lot observed, but cars actively parking in lot
3525	3525	7H	Detention	1	2	2	Loose sediments on surface of adjacent parking lot; inflow channel half-blocked by sediment; erosion within basin and on sideslopes	Repair erosion and stabilize sideslopes; clear sediments from adjacent parking lot; repair inflow channel to restore design/intended flow capacity

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3597	3597	7H	Detention	N/A	2	2	Bare areas in basin; erosion at abutments; trash rack covered by debris; woody vegetation growing above inflow pipe	Overseed bare areas and repair erosion in abutment; remove woody vegetation near inflow pipe; clear debris from riser
3683	3683	7H	Underground Storage	N/A	2	2	4-6" of water in 48" HDPE pipe system; 0.2-0.3" sediment mixed in throughout; some leaf debris present; bypass to junction near road in high events; deep erosion pit near concrete pad surrounding access manhole	Repair erosion pit near concrete pad surrounding access manhole with fill material and groundcover stabilization
3685	3685	7H	Underground Storage	N/A	U	U	Observation ports still in ground, but facility appears to have been removed; recent disturbance indicated by presence of loose soil and straw on ground surface; depressions in area where two manholes appear to have been previously located	None - consider removing ports if BMP is no longer in service
3707	3707	7H	Underground Storage	N/A	1	1	Bare areas on ground surface above facility; ants around manhole; approximately 2.5" of water/sediment mixed within 3.5' diameter semi-circular HDPE pipe; drains to vault chamber downstream	Overseed bare areas; continue routing maintenance
3709	3709	7H	Hydrodynamic	1	2	2	Bare soil around manhole; 1.6' water depth; debris/trash present; no lock or bolt	Remove trash/debris as part of routine maintenance; add locks/bolts to secure BMP closure; overseed bare areas around manhole
3751	3751	6G	Detention	2	2	2	Sediment in basin bottom creating adverse grade conditions and inhibiting intended flowpath; rutting in basin bottom; trash/debris present	Remove excessive sediment in bottom and repair ruts; remove trash and debris
3778	3778	6G	Extended Detention	1	3	3	Erosion around edges of riprap apron at outfall; significant undercutting and visible debris below one inflow pipe; other inflow pipe below road under construction partially submerged; upstream construction underway - E&S controls not fully functional; suds/murky water observed within facility; may be serving as temporary sediment trap or basin	Repair erosion at outfall and below inflow pipe; remove debris and sediment from facility once upstream construction is stabilized or before downstream CONTECH unit is at risk for damage; inspect upstream E&S controls to limit excess sediment from entering 3778

SWM ID	Structure ID	Grid ID	BMP Type	2010/2011 Structure Condition	2014 Structure Condition	2014 BMP Condition	Deficiencies	Corrective Actions
3788	3788	6G	Extended Detention	1	3	3	Upstream construction underway - E&S controls are inadequate (i.e. silt fence broken and no inlet protection); may function as temporary sediment basin or trap in present time; erosion in spots around basin; trash/debris within basin; rutting across top of berm; cattails slowing/backing up flow within low-flow channel	Repair erosion within basin; remove debris and sediment from basin once upstream construction is complete or before the downstream facility (3788) is impacted as a result; clear cattails to prevent excessive pooling; repair rutting across top of embankment; inspect upstream E&S controls to limit excess sediment from entering 3788
3828	3828	6H	Detention	2	2	2	Undercutting at inflow pipe; erosion around outlet protection/loose riprap - no evidence of geotextile fabric; bare areas within basin; loose material and erosion at top of slope; minor debris/sediment within basin at inflow; woody vegetation on downstream slope; roadway serves as embankment - utility poles also within embankment	Repair undercutting at inflow; stabilize sideslopes and basin bottom; reinstall outlet protection correctly
3832	3832	6H	Detention	3	2	2	Divest in basin bottom due to mowing operations; concrete ditch to inflow pipe has failed in one location; sediment in basin bottom has created adverse grade; trash/debris within basin bottom; construction underway upslope of BMP	Stabilize bare areas; level out basin bottom and re-establish vegetative cover; repair concrete channel connected to inflow pipe
3870	3870	6H	Stormwater 360 (Filter Cartridges)	U	2	2	Port stuck closed due to sediment/debris accumulation; minor trash/debris in chamber; 1" water; 0.5" sediment; historic flow marks; erosion around concrete box	Repair erosion around box; clean around port area to accommodate proper access for inspection/maintenance; continue other routine maintenance
3871	3871	6H	Underground Storage	U	2	2	Erosion around perimeter of BMP; minor trash/debris/sediment within vault; 3870 drains into 3871; 1" water	Repair erosion; continue routine maintenance
3883	3883	6H	Infiltration Basin	2	2	2	Erosion around basin and on BMP surface; woody vegetation growing within riprap stilling basin; sediment/algae in pool below inflow pipe; surrounding area somewhat barren	Stabilize sideslopes and repair erosion on BMP surface; remove sediment from pool below inflow pipe; remove woody vegetation from outlet protection; stabilize immediate surrounding area within the vicinity of the retired access path/road

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3886	3886	6H	Extended Detention	2	2	2	Bare spots on abutments and along dam crest; potential rodent burrows/habitats in bottom of basin; in-line BMP to BMP 3883	Overseed to correct bare areas within basin and on dam; remove rodents and repair burrow/habitat locations
4008	4008	6G	Wet Swale	N/A	3	3	Erosion around DI draining to outlet; ruts/erosion/small tracks along surface and sideslopes; bare areas throughout facility; several deceased trees/shrubs	Repair erosion & ruts; overseed bare areas; investigate cause of and replace deceased vegetation
4061	4061	6I	Extended Detention	4	4	4	Major erosion across basin and embankment; riser full of large limbs and debris; dead vegetation and debris prevalent within basin; sideslope failure behind houses within basin; blowout in forebay berm; tree growing in front of inflow pipe; bare areas in immediate surrounding area	Remove debris and sediment from basin and riser; repair areas of erosion within the basin, along the embankment, and within the forebay and forebay berm; remove dead vegetation from basin and replace; stabilize areas surrounding basin; investigate sideslope and forebay berm failures and ensure proper compaction/material is used to re-establish grades
4064	4064	6H	Extended Detention	3	3	3	Murky water in pool at inflow; inflow pipe fully submerged; woody vegetation throughout basin and on embankment; significant trash/debris and invasive species within basin; scour below outfall location; trash/debris within riser; bare/eroded areas throughout basin and on sideslopes	Clean trash/debris/sediment from basin, riser, and inflow pipes; remove woody vegetation from embankment; remove invasive species from basin and embankment; repair scour below outfall (permits may be required); further inspect for seepage at toe (inaccessible at time of inspection); repair and stabilize bare areas and eroded areas within basin and on embankment
4225	4225	7I	Hydrodynamic	U	2	2	Trash/debris in chamber; 1.3' water; strong odor present	Investigate source of odor; continue routine maintenance
4230	4230	7I	Hydrodynamic	U	1	1	Trash/debris present; 1.7' water depth; no sediment observed	Continue routine maintenance
4244	4244	7H	Hydrodynamic	U	2	2	Trash/debris in chamber; 1.6' water depth; suds observed	Investigate source of suds; continue routine maintenance
4324	4324	6H	Infiltration Basin	1	2	2	Sediment in inflow and basin area; erosive channel formed by flow from adjacent parking lot; woody vegetation growing behind headwall at inflow; ruts/exposed soil in immediate surrounding area	Remove sediment from basin and inflow pipe; remove woody vegetation from behind headwall; provide more stabilization at inflow points; repair erosive channel; overseed immediate surrounding area to prevent erosion

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4481	4481	5H	Bioretention Filter	N/A	2	2	Sediment deposited on surface from large rill on sideslope near riser; trash/debris on surface; erosion/undercutting near inflow; trash/debris at inflow; erosion upslope	Repair rill erosion and eroded areas near inflow; repair undercutting at inflow; clear trash/debris/sediment from inflows and surface; overseed bare areas upslope
4582	4582	5J	Extended Detention	3	3	3	Rutting on dam crest; woody vegetation/shrubs across dam crest; trash partially blocking trash rack; old (disconnected) power line down in ditch; trash/debris within pond; inlets partially blocked	Remove woody vegetation from embankment; clear trash and debris from pond; ensure old power line is disconnected from source and remove; repair ruts on dam; clear inflow points
4635	4635	4J	Tree Box Filter	1	1	1	Debris/sediment on surface; mulch displaced; sediment fills inflow	Continue routine maintenance
4637	4637	5J	Tree Box Filter	1	1	1	Trash/debris at inflow and on surface; mulch displaced	Continue routine maintenance
4678	4678	8E	Dry Detention Basin	1	1	1	Inflow concealed by vegetation; not blocked	Continue routine maintenance
4826	4826	8H	Underground Storage	N/A	1	1	Bare areas on ground surface above BMP; 1-3" inches of saturated sediment mainly in grooves of 72" CMP pipe; minor corrosion; warm plastic odor detected; minor leaf debris	Overseed bare areas on ground surface; install proper erosion & sediment controls upslope to restrict transport of loose sediment/material
4935	4935	7D	Detention	2	4	4	Bare areas along embankment and within basin; woody species along embankment; low flow orifice is perched and water leaks into riser from below the orifice; erosion/scour	Repair eroded areas; remove woody vegetation from embankment; inspect riser for leaks/damage - repair/replace as necessary; re-establish low flow
5055	5055	4G	Extended Detention	2	4	4	Woody species present on embankment; moist soil near abutment (right side looking downstream on downstream face of dam) - no surface flow visible; trash/debris rack with	Remove woody species; clear sediment from outfall barrel; investigate cause of suds; investigate moisture at abutment; replace trash rack with proper water quality
5223	5223	4G	Extended Detention	1	4	4	Woody species present on embankment; vegetation growing around riser; trash rack with water quality orifice plate detached from riser; tree fallen on outfall channel	Remove wood species from embankment; remove vegetation growing around riser; replace trash rack with proper water quality plate/orifice plate; remove tree from
5340	5340	4J	Enhanced Extended Detention	2	2	2	Silt fence still in place around principal spillway; trash/debris within basin inflow pipe and principal spillway; woody vegetation on dam embankment; outfall pipe partially	Remove silt fence from BMP facility; clear trash/debris/sediment from inflow pipes, principal spillway and barrel; remove woody vegetation from
5375	5375	4I	Detention	1	4	4	Silt fence around DI (principal spillway); outfall submerged; settling along dam; woody vegetation on embankment; sediment in outfall pipe; inflow pipe damaged - bypasses riser	Remove silt fence; repair settling; remove woody vegetation from embankment; clean out sediment; repair inflow and reinspect against design plans

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5381	5381	4I	Constructed Wetland	1	5	5	Settling in bends around embankment; erosion along both sides of embankment; gully erosion on backside of embankment; woody species on embankment; DI (principal spillway) fully clogged with vegetative debris; barrel not inspected/observed; inflow manhole cover missing; invasive species present; emergency spillway seems small given size of basin	Repair settling and erosion areas; clear principal spillway blockage; inspect barrel for deficiencies; remove woody vegetation from embankment; overseed upland areas; replace manhole cover; armor embankment with riprap or other protective measures to resist erosion from overtopping; emergency spillway seems small - overtopping likely frequent - consider making ES larger to lessen overtopping amount if feasible; permits need consideration (work in open water/wetland features)
5394	5394	6D	Extended Detention	1	2	2	Trash/debris/sediment in riser, basin, and inflows; scour at outfall location due to lack of adequate riprap or outlet protection	Remove trash/debris/sediment and stabilize; repair scour at outfall and install proper outlet protection measures
5443	5443	4I	Constructed Wetland	1	4	4	Settling on dam crest; woody vegetation on embankment; grate at outlet fully blocked by vegetation; outlet structure damaged; scour and sediment at outfall; invasives present	Remove woody vegetation from embankment; repair settling on dam; remove invasive species; clean and remove debris from principal spillway; investigate need to repair principal spillway structure; provide outlet protection; remove sediment from outfall
5454	5454	4I	Constructed Wetland	3	3	3	Some settlement across embankment crest; woody vegetation along both sides of embankment; outfall covered by debris; vegetation growing through spillway; sheen on water; grate loose; invasives observed; sediment in forebay	Remove sediment and debris to inspect upstream end of outlet; remove woody vegetation from embankment/spillway; investigate sheen on water; clean sediment from forebay; repair low spots along embankment
5465	5465	4I	Bioretention Filter	3	3	3	Erosive pits on surface of bioretention filter; many bare areas on filter surface; broken HDPE collar at inflow location; trash/debris within facility; observation well unable to be opened	Repair erosion and stabilize bare areas on surface of BMP; remove trash/debris from surface; open observation wells and inspect to check for proper dewatering and functionality; repair inflow pipe

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5517	5517	7F	Extended Detention	N/A	3	3	2-3' undercutting at outlet; floatables and vegetative blockage in low flow channel; hydrocarbon sheen; bare soils around basin; trash/debris present; floatables in inflow pipe; damage to inflow pipe and settling observed above inflow pipe; invasives present; probable shared facility with VDOT	Repair erosion/undercutting at outfall; investigate floatables and hydrocarbon sheen; remove trash/debris; repair eroded areas and overseed basin to establish better groundcover; repair damage to inflow; investigate settling above pipe to verify no failure is occurring; remove invasives
5520	5520	7F	Extended Detention	1	2	2	Bare areas around basin; odor in riser; sediment in low flow channel; invasive species present; hydrocarbon sheen observed; probably shared VDOT facility	Investigate source of hydrocarbon sheen; investigate odor in riser; remove invasive species; overseed bare areas to establish better ground cover; clear sediment from low flow channel
5584	5584	6F	Retention	1	3	3	Sediment on spillway channel; erosion along outfall channel; erosion/scour at outlet - no outlet protection; rodent holes present; no shoreline protection	Clear sediment from spillway; repair eroded areas; install outlet protection; install shoreline protection (permits needs consideration - work in open waters); repair rodent burrows
5616	5616	6H	Detention	2	5	5	Woody vegetation present on both sides of embankment and within emergency spillway; 6-8' undercutting below outfall pipe into natural channel; vegetation growing around riser; dead vegetation/trash within basin; erosive channel forming to carry flow into basin (adjacent to elementary school playground); invasive species present; riser needs inspection - inaccessible due to fence on day of inspection	Remove woody vegetation from embankment and ES; clear debris from riser; conduct inspection of riser; repair undercutting at outlet (permits need consideration because outfall is to natural channel); clear trash and dead vegetation debris from basin; repair erosive channel entering basin adjacent to playground; overseed bare areas and stabilize other areas of erosion
5621	5621	8I	Extended Detention	1	2	2	Woody species on embankment; gravel on access road in emergency spillway is partially washed away; some debris near trash rack; scour/undercutting at outfall; sideslope erosion; trash/debris significant at inflows	Remove trash and debris; clear woody species from embankment; repair outfall protection; repair eroded areas within basin and on sideslopes/embankment; top dress access road with gravel

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5645	5645	5H	Detention	4	5	5	No access path to facility; woody and invasive species dominate vegetation; trees fallen (looks like tornado damage) onto safety fence; old CMP riser and barrel in use (appears small for size of facility); scour/headcut in downstream channel; silt fence across channel below outfall; 3-4' incised channel at outfall; erosive channel bypassing facility to confluence	Clear woody vegetation from embankment and safety fence; inspect riser/barrel for deficiencies and investigate sizing - repair/replace if necessary; add access path; repair erosive bypass channel; correct outfall scour; repair headcut in channel and remove silt fence from stream (permits necessary - in live watercourse); remove debris and sediment from basin
5748	5748	5E	Retention	1	3	3	Trees fallen on embankment; vertical bank erosion; rill erosion; major erosion near toe - adjacent to stream; riser submerged; could not observe outfall connection - wet spot of soil in line with riser; discharges to natural stream	Repair areas of erosion; remove dead trees and floating debris; locate outfall and inspect outfall and riser - repair if necessary; remove woody vegetation from embankment
5755	5755	5F	Retention	1	5	5	Major erosion and undercutting along downstream slope of embankment; basin is adjacent to natural channel - embankment is subject to erosive channel flows; rodent burrows along embankment; significant scour in downstream channel	Repair erosion on downstream slope of embankment before failure occurs (permits need consideration, as work is adjacent/within natural stream and wetland system; remove rodents and repair burrows; repair scour in channel below outfall and embankment
5773	5773	4F	Extended Detention	1	3	3	Settlement observed on embankment; woody species present on embankment; trash/debris clogging riser - unable to fully inspect; erosion/scour within basin	Remove woody species from embankment; investigate and repair embankment settling near outfall pipe; repair erosion/scour within basin and near inflow pipes; remove trash/debris; clear riser clogs

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5815	5811	9G	Underground Storage	1	1	2	Located within high traffic lot, not entered; debris observed from surface and on parking lot surface; less than 0.5" water and 1" sediment	Inspection with proper traffic controls needed to verify condition; clean road sediments from parking lot
	5812	9G		1	2		Located within high traffic lot, not entered; strong waste odor present; debris observed from surface; scour present at outfall; no outfall protection installed	Inspection with proper traffic controls needed to verify condition; remove trash/debris from lot and facility; check for odor elimination post-inspection; install outlet protection to prevent additional scour in stream (permits may be required)
	5813	9G		1	2		Located within high traffic lot, not entered; strong stale odor present; 2" standing water; debris observed from surface; hydrocarbon sheen observed	Inspection with proper traffic controls needed to verify condition; remove trash/debris; check for odor elimination post-inspection
	5814	9G		1	U		Located within travel way, unsafe to access	Inspection with proper traffic controls needed to verify condition
	5815	9G		1	U		Located within travel way, unsafe to access	Inspection with proper traffic controls needed to verify condition
	5816	9G		1	2		Located adjacent to high traffic lot and dumpster stationed on top of facility, not entered; debris observed from surface; minor corrosion within standpipe; bare soil surrounding access manhole	Inspection with proper traffic controls needed to verify condition; remove debris; stabilize area surrounding manhole; move dumpster such that static loads not continuously resting on UG facility
5838	5838	4F	Extended Detention	N/A	2	2	Woody vegetation on embankment; hydrocarbon sheet; 4-6" undercutting at outlet; bare areas on sideslopes; trash/debris; filter fabric exposed; inflow partially submerged; probably VDOT shared facility	Stabilize outfall; repair undercutting; remove woody vegetation; investigate sheen; clear trash/debris/sediment
5841	5841	4F	Retention	2	3	3	Settling in dam near riser; woody vegetation on embankment; trash/debris; floatables below outfall; displaced riprap at outfall; erosion/sediment in inflow channel; shared VDOT facility	Remove trash/debris; remove woody vegetation; repair eroded areas; repair outlet protection; investigate settling near riser and repair accordingly to achieve level embankment; investigate floatables

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5867	5867	5J	Tree Box Filter	1	2	2	Trash/debris at inflow and on surface; mulch displaced; rock at inlet displaced; could not open port to check observation wells due to frozen condition	Check observation well for water/sediment; replace rock at inlet; continue routine maintenance
5868	5868	5J	Tree Box Filter	1	2	2	Trash/debris at inflow and on surface; mulch displaced; could not open port to check observation wells due to frozen condition	Check observation well for water/sediment; continue routine maintenance
5883	5883	5J	Tree Box Filter	1	1	1	Trash/debris at inflow and on surface; mulch displaced	Continue routine maintenance
5886	5886	4J	Tree Box Filter	1	2	2	Trash/debris at inflow and on surface; mulch displaced; could not open port to check observation wells due to sediment stuck around bolt	Clean port and check observation well for water/sediment; continue routine maintenance
5891	5891	10H	Extended Detention	1	4	4	Settling on dam; trees/shrubs/erosion/bare areas on embankment; sediment in riser; possible displaced/offset joint; trash/debris; undercutting and scour at outlet; no outlet protection; erosion/bare areas/sediment in basin	Repair settled areas on dam; repair eroded areas; overseed bare areas to provide better groundcover; repair scour/undercutting and install outlet protection; investigate offset/displaced joint - repair if necessary
5913	5913	10I	Underground Storage	1	2	2	Nearby manholes inaccessible; no method to open; bare area around access manhole; 0.25-2" water; 6-8" sediment; seal to primary chamber is not tight	Overseed bare areas and establish groundcover; investigate seal to primary chamber; continue routine maintenance
6024	6024	6I	Retention	1	4	4	Presently appears to serve as temporary sediment basin; construction upslope draining to BMP; bare eroding areas along embankment; vegetation not fully established; debris on water surface; murky water; E&S measures upslope	Once construction complete, configure to intended BMP design; repair eroded areas and overseed bare areas; remove E&S controls within contributing drainage area; remove sediment and debris from basin
6048	6048	5I	Detention	1	2	2	Woody vegetation on embankment; undercutting along sideslope adjacent to roadway; erosion in emergency spillway and near inflow point; sediment and debris at inflow location; low spot observed in dam embankment	Address undercutting adjacent to roadway and erosion near emergency spillway and inflow locations; address low spot in embankment and level out; remove woody vegetation from embankment; remove sediment and debris from inflow pipe

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6080	6079	8H	Underground Storage	1	1	1	Minor corrosion within system; less than 1" of standing water and 0.25" of sediment; no blockages	Continue routine maintenance
	6080	8H		1	1		Minor corrosion within 66" perforated CMP pipe; 1-2" of sediment accumulation; limited trash; musty smell present; surficial cracking of concrete at surface	Continue routine maintenance
6098	6098	9H	Extended Detention	1	2	2	Rill erosion on sideslope; possible rodent burrow; erosion around headwall; sediment in forebay; bank erosion on/near southeast corner	Repair rill erosion; remove sediment from forebay; repair erosion around headwall; continue routine maintenance
6101	6101	8H	Bioretention Filter	1	2	2	Bare areas on slope above outfall pipe; pitted areas on surface (rodent holes); algae in outfall; sediment deposits on surface	Repair areas of erosion; repair rodent holes; monitor algae at outfall; continue routine maintenance
6102	6102	8H	Extended Detention	1	3	3	Erosion/burrow issues; water too deep to inspect riser; debris at inflow locations	Repair areas of erosion; repair rodent holes; inspect riser for defects; clear sediment/debris
6121	6121	8H	Extended Detention	N/A	2	2	Debris clogging outlet protection; rodent holes within basin	Remove debris from outfall; repair rodent holes; continue routine maintenance
6122	6122	8H	Bioretention Filter	1	2	2	Rodent holes on downstream embankment; minor erosion along top of sideslope adjacent to sidewalk	Repair erosion; overseed bare areas; repair rodent holes; continue routine maintenance
6145	6145	2C	Bioretention Filter	3	2	2	Observation wells not opened, no evidence of poor drainage; erosion at toe of slope within basin; sediment collected in curb cuts; sediment within lowest orifice of riser	Clean sediment from curb cuts; repair vertical erosion within basin; clean sediment from riser orifice; continue routine maintenance
6151	6151	8H	Pavers	1	1	1	Minor trash/debris/road sediments on paver surface; few stains from vehicular leakage; some standing water at outlet	Clean trash/debris/road sediments from paver surface
6154	6154	8H	Pavers	2	1	1	Minor road sediments on surface of pavers and small residual stains from vehicular leaks on surface; small amount of sediment visible in vault below UD outfall	Clean road sediments on lot and UD outfall port; remove blockage from DI grate cover
6160	6160	8H	Pavers	2	2	2	Road sediments on surface of pavers and residual stains from vehicular leaks on surface; sediment visible in DI at UD outlet; DI grate buried under vegetative debris	Clean road sediments on lot and UD outfall port; remove blockage from DI grate cover
6165	6165	8H	Pavers	2	2	2	Sediment accumulation on lot surface, within curb cuts, and covering DI; DI completely blocked	Clean road sediments on lot and clear debris/sediment from curb cuts and DI grate

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6171	6171	8H	Pavers	2	2	2	Sediment accumulation on lot surface and within outfall chamber of UD system; minor stains from vehicular leaks on lot surface	Clean road sediments on lot and remove sediment from below outfall of UD system
6208	6208	2C	Bioretention Filter	2	3	3	Bare areas on sideslopes; downstream side and outlet not inspected (not escorted); underdrain observation wells not opened; high water mark (2-3' above surface of filter) on riser; invasive species present	Stabilize erosion/bare areas with overseeding; investigate cause of high water mark and verify not a result of current conditions (i.e. historic mark from previous use as sediment basin?)
6212	6212	2C	Bioretention Filter	1	2	2	Upslope disturbance - permanent stabilization not in place; poor groundcover; filter media exposed; observation wells not opened; erosion near weir wall; riser to 6208 as emergency spillway	Repair sideslopes and erosion near weir wall; stabilize upslope areas; establish better groundcover on filter bed
6213	6213	2C	Bioretention Filter	1	2	2	Observation wells not opened; upslope area disturbed; bare spots on sideslopes	Stabilize sideslopes; ensure upslope area is stabilized permanently and does not deposit sediment onto surface of filter
6214	6214	2C	Bioretention Filter	1	2	2	Observation wells not opened; exposed filter media on surface; bare spots on sideslopes	Stabilize sideslopes; establish better groundcover on surface of filter media
6215	6215	2C	Bioretention Filter	1	2	2	Observation wells not opened; exposed filter media on surface; bare spots on sideslopes; significant erosion on sideslope nearest to building	Stabilize sideslopes; establish better groundcover on surface of filter media; repair erosion along side of bioretention filter
6216	6216	2C	Bioretention Filter	1	2	2	Observation wells not opened; exposed filter media on surface; bare spots on sideslopes; significant erosion at weir wall where it keys into earth	Stabilize sideslopes; establish better groundcover on surface of filter media; repair erosion at weir wall
6240	6240	9H	Detention	3	2	2	Settlement around riser (3-4" depression); rodent holes; sediment in inflow pipes; trash/debris/ruts	Repair eroded areas and ruts; repair settling around riser; repair rodent holes; overseed to provide better groundcover
6265	6265	9H	Sand Filter	3	3	3	No standing water observed from surface; valves appear to be functioning properly; leaf debris and sediment appeared saturated and deepest near inflow points/connections to side chambers; access port locked and unable to access to open observation wells	Remove leaf debris/sediment; conduct inspection when port is accessible to review condition of observation well to verify performance

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6266	6266	9H	Sand Filter	3	3	3	No standing water observed from surface; leaf debris and sediment appeared saturated and deepest near inflow points/connections to side chambers; access port locked and unable to access to open observation wells	Remove leaf debris/sediment; conduct inspection when port is accessible to review condition of observation well to verify performance
6286	6286	9H	Bioretention Filter	N/A	1	1	Less than 0.25" of standing water in observation well; side slopes not fully established yet - appears to be very recently constructed	Continue routine maintenance
6287	6287	9H	Pavers	U	2	2	Minor cracking in a few pavers along the side of the building; settling along side of building in paver system within vicinity of waterline; debris floating on surface within vault system below	Repair settling in pavers and replace cracked pavers in system; remove debris from vault below paver system
6306	6306	9H	Bioretention	1	3	3	Standing water in observation well; bare areas at top of slope	Investigate standing water; overseed to establish better groundcover; continue routine maintenance
6380	6380	9H	Bioretention	1	3	3	Standing water in observation well; settled/pitted areas on surface of filter; bare areas at top of slope/near inflow	Investigate standing water; repair eroded areas; overseed to establish better groundcover; continue routine maintenance
6386	6386	9H	Bioretention	1	2	2	Erosion and sloughing in corner of facility; bare areas around basin; ruts in surrounding area draining to basin	Repair ruts; overseed to establish better groundcover; repair eroded areas; repair sloughing location; continue routine maintenance
6437	6437	2C	Retention	1	3	3	Bare areas on sideslopes and on embankment; significant erosion at outfall across the bank from the pipe invert; waterfowl present and causing bare spots to develop	Stabilize eroding areas; overseed to improve groundcover; investigate channel scour at outlet location; install better outlet protection to prevent further scour/erosion in stream; stabilize streambank erosion
6448	6448	8H	Tree Box Filter	1	1	1	Large amount of sediment/debris on surface and at inlet; displaced mulch	Continue routine maintenance
6450	6450	8H	Tree Box Filter	1	1	1	Large amount of sediment/debris on surface and at inlet; displaced mulch	Continue routine maintenance

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6457	6457	2C	Bioretention Filter	2	3	3	Not escorted around full perimeter of basin; observation wells not opened; bare areas on sideslopes; burrow at toe of basin (interior); sediment on basin surface; filter media widely exposed; debris/sediment at inflows; rill forming below toe drain discharging towards basin	Stabilize bare areas; repair eroded areas; remove rodent and repair burrow; clear debris/sediment from inflows; inspect downstream slope and outfall for issues
6466	6466	2C	Bioretention Filter	1	2	2	Observation wells not opened; sediment collected at lowest riser orifice; erosion around riser	Clear debris/sediment from around riser orifice; repair erosion around riser structure
6479	6479	1C	Bioretention Filter	2	3	3	Not escorted to outfall location; observation wells not opened; bare areas on side slopes; debris/sediment at inflow location (appears "flushed"); lack of adequate groundcover; separation between headwall and low flow orifice in riser	Stabilize bare areas and overseed to establish better groundcover; clear inflow of debris/sediment; investigate gap between headwall and low orifice in riser; review outfall for deficiencies
6681	6681	7H	Enhanced Extended Detention	1	2	2	Bare areas within basin; trash/debris at inflow pipe; E&S controls still in place; debris caught in riser trash rack	Clear trash/debris; repair/stabilize areas of erosion; remove E&S controls from within basin
6683	6683	7H	Hydrodynamic	1	2	2	Bare areas on ground surface above BMP; 1-2" sediment near inflow; 6" sediment within primary chamber; significant trash and debris within facility; historic high water marks approximately 3' above WSE; outfalls to 6691; 2.8' water depth near inflow and outflow; 5' water within main chamber; Contech device	Overseed bare areas on ground surface; remove trash, debris, sediment; re-inspect post cleaning to check for high standing water
6704	6704	7H	Bioretention Filter	1	2	2	Bare soil around top edge of sideslopes and in upland areas draining to basin; standing water within observation wells	Mow; check UD for blockage; repair erosion and bare areas
6708	6708	7H	Bioretention Filter	1	2	2	Bare soil within and surrounding the basin; rodent holes within basin	Overseed and stabilize bare areas within and surrounding basin; remove rodents and repair rodent holes
6735	6734	9G	Underground Storage	1	1	1	Bare areas on ground surface above BMP; 66" CMP; less than 0.5" sediment and 1" water within pipe; downstream of 6735; frog within BMP	Overseed bare areas on ground surface
	6735	9G		1	1		Bare areas on ground surface above BMP; 60" CMP; 2" saturated sediment present; connects to 6734	Overseed bare areas on ground surface

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6749	6749	1C	Bioretention Filter	1	2	2	Sediment at inflow (appears "flushed"); minor trash/debris; observation wells not opened; bare soil areas around side slopes; large rut at top of side slope - curb broken, loose debris and sediment present	Repair broken curb and stabilize associated disturbed area; remove sediment and debris from surface; clear "flushed" inflow; overseed bare areas to establish better groundcover
6753	6753	1C	Bioretention Filter	1	1	1	Observation wells not opened; no visual issues noted	Continue routine maintenance
6758	6758	1C	Bioretention Filter	1	1	1	Observation wells not opened; sediment and vegetative debris on surface	Continue routine maintenance
6771	6771	8G	Underground Storage	U	2	2	Bare areas on ground surface above facility; 2-3" + of sediment within pipe - deepest areas at connection points within manifold system; minor corrosion of 60" diameter CMP pipe; exposed fabric overlap at connection within main area	Overseed bare areas; remove sediment from manifold system
	6772	8G		1	1		Minor corrosion within 66" CMP pipe; minor leaf debris/trash present; trickle flow observed at outfall; 2-3" of sediment in pipe; 1" of standing water	Clear sediment and debris in accordance with routine maintenance plan; continue other routine maintenance
6783	6783	8G	Underground Storage	4	4	4	Major erosion on ground above facility; collar at manhole access completely separated from standpipe due to erosion/shifting; unsafe to enter to complete inspection; minimal water/sediment observed from surface within system	Access point requires repair; erosion needs to be arrested and repaired; once access is repaired and facility is safe for entry, inspection required to verify functionality of BMP
	6784	8G		1	1		Bare areas on ground surface above BMP; manifold configuration; minimal standing water; 2" sediment; minor rust within 60" CMP pipe; connects to 6785	Overseed bare areas on ground surface
6785	6785	8G	Underground Storage	1	1	1	Bare areas on ground surface above BMP; manifold configuration; minimal standing water; 0.5-2" sediment; minor rust within 72" CMP pipe; connects to 6783	Overseed bare areas on ground surface
6793	6793	2D	Extended Detention	2	2	2	Rill erosion surrounding basin; bare areas on sideslopes; floating debris; trash/debris/sediment in inflow; inadequate groundcover; construction upstream	Remove trash/debris/sediment; stabilize bare areas; repair erosion; overseed to establish better groundcover; stabilize upstream area

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6818	6818	1D	Extended Detention	4	4	4	Appears to have recently been modified/converted from sediment basin; woody species at headwall; no established groundcover within basin; debris covering lowest trash rack on riser; significant sediment at inflows and pipes; adjacent construction; sediment at outfall	Seed to establish groundcover; clear inflows and outfall of sediment; clear debris from trash rack; remove woody vegetation around riser; stabilize contributing drainage area; remove E&S controls once construction complete
6831	6831	1D	Retention	N/A	2	2	Debris and large dead tree fallen on BMP; sediment in bottom of inflow channel; loose sediment upslope (construction underway)	Remove dead vegetation; stabilize inflow channel; establish better groundcover
6842	6842	1D	Detention	N/A	2	2	Trash/debris/sediment present; displaced riprap in inflow channel to basin (from adjacent 6846)	Repair inflow channel (outflow from 6846); continue routine maintenance
6843	6843	1D	Retention	N/A	1	1	Significant trash/debris on surface of pond and within pond buffer nearest to roadway; no forebay visible	Remove trash/debris; continue routine maintenance
6846	6846	1D	Detention	1	4	4	Presently appears to serve as temporary sediment basin; construction upslope draining to BMP; bare eroding areas along embankment; woody vegetation on downslope of dam; noticeably wet area along abutment; displaced riprap at outfall; outfall protection covered with sediment; scour at outfall; vegetation not fully established; debris on water surface; murky water; E&S measures upslope	Once construction complete, configure to intended BMP design; repair eroded areas and oversee bare areas; remove E&S controls within contributing drainage area; remove woody vegetation from embankment; remove sediment and debris from basin; clean sediment from outlet protection and repair outlet protection; investigate seepage along abutment
6851	6851	2B	Detention	1	2	2	Scour below end of apron into natural channel	Investigate scour and repair; continue routine maintenance
6900	6900	1B	Infiltration Basin	1	4	4	Originally thought to be retention basin; holding water; debris at low flow orifice of riser; erosion/bare areas on sideslopes; sediment deposited below inflow pipe; 2" sediment within inflow pipe; displaced riprap below inflow; invasives; loose sediments washing off access road	Clear riser/inflow debris and sediment; repair inflow outlet protection; stabilize access road; repair eroded areas and stabilize bare sideslopes; remove invasive species; investigate cause of standing water and repair to restore infiltration
6940	6940	2B	Tree Box Filter	1	2	2	Trash/debris at inflow and on surface; mulch displaced; could not open port to check observation wells due to sediment depth	Check observation well for water/sediment; continue routine maintenance

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6942	6942	2B	Tree Box Filter	1	2	2	Significant sediment accumulation; observation wells unable to be opened; mulch shifted and displaced	Clear trash/debris/sediment; check observation wells for standing water or sediment; replace mulch
6944	6944	2B	Tree Box Filter	1	2	2	Trash/debris at inflow and on surface; mulch displaced; could not open port to check observation wells due to sediment depth	Check observation well for water/sediment; continue routine maintenance
6946	6946	2B	Tree Box Filter	1	2	2	Trash/debris at inflow and on surface; mulch displaced; could not open port to check observation wells due to sediment depth	Check observation well for water/sediment; continue routine maintenance
6954	6954	1C	Bioretention	1	5	5	Large dead tree on embankment; woody species (dead and alive on embankment); cracks in headwall of outfall around pipe (no seepage observed); suds at outfall; 2-3' standing water; active erosion around sideslopes; murky water with sulfur odor present in basin; berm from forebay submerged; observation wells submerged and unable to access for inspection	Stabilize eroding areas; repair cracks in headwall; investigate standing water to determine cause of improper dewatering; inspect observation wells; remove dead vegetation, trash, and debris; replace vegetation that has died to due extended submerged conditions; investigate odor and cause of suds at outfall
7070	7070	8H	Tree Box Filter	1	2	2	Large amount of sediment/debris on surface and at inlet; displaced mulch; sediment too deep to open observation wells	Continue routine maintenance; open observation wells and inspect for standing water/sediment
7072	7072	8H	Tree Box Filter	1	2	2	Large amount of sediment/debris on surface and at inlet; displaced mulch; sediment too deep to open observation wells	Continue routine maintenance; open observation wells and inspect for standing water/sediment
7075	7075	8H	Tree Box Filter	1	1	1	Large amount of sediment/debris on surface and at inlet; displaced mulch	Continue routine maintenance
7077	7077	8H	Tree Box Filter	1	2	2	Large amount of sediment/debris on surface and at inlet; displaced mulch; excess concrete has sealed port to observation wells shut	Continue routine maintenance; remove excess concrete, open observation wells and inspect for standing water/sediment
7079	7079	8H	Tree Box Filter	1	2	2	Large amount of sediment/debris on surface and at inlet; displaced mulch; sediment too deep to open observation wells; soft soil around tree box and erosion present	Continue routine maintenance; open observation wells and inspect for standing water/sediment; level soil around tree box and repair erosion
7081	7081	8H	Tree Box Filter	1	1	1	Large amount of sediment/debris on surface and at inlet; displaced mulch	Continue routine maintenance

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7082	7082	8H	Bioretention	1	5	5	4" - 12" standing water in basin; observation wells not visible; bare spots and erosion surrounding basin; E&S measures still installed; inflow pipe partially submerged; sloughing along banks of facility; planted vegetation subjected to extended period of submerged conditions	Investigate to determine cause of unsatisfactory de-watering; repair blockage/issue to re-establish facility as bioretention; replace dead/stressed vegetation; overseed and stabilize bare areas; repair sloughing and areas of erosion; remove E&S measures; clear debris/trash/sediment
7104	7104	8H	Tree Box Filter	1	2	2	Large amount of sediment/debris on surface and at inlet; displaced mulch; sediment too deep to open observation wells; bare areas on surface	Continue routine maintenance; open observation wells and inspect for standing water/sediment; overseed to address bare areas in contributing drainage area
7106	7106	8H	Tree Box Filter	1	1	1	Large amount of sediment/debris on surface and at inlet; displaced mulch	Continue routine maintenance
7111	7111	8H	Tree Box Filter	1	2	2	Large amount of sediment/debris on surface and at inlet; scour below inlet opening; displaced mulch	Remove sediment/debris and replace mulch; continue routine maintenance; repair scour below inlet opening
7112	7112	8H	Tree Box Filter	1	2	2	Large amount of sediment/debris on surface and at inlet; scour below inlet opening; displaced mulch	Remove sediment/debris and replace mulch; continue routine maintenance; repair scour below inlet opening
7144	7144	1C	Retention	N/A	3	3	Trash/debris at rim of riser; no trash rack installed; no outlet protection; scour/erosion at inlet; sediment/leaf debris on concrete sideslopes	Clean debris from riser; install trash rack; repair scour at outfall; install outlet protection (permits must be considered as it drains to natural channel)
7158	7158	1C	Bioretention Filter	1	3	3	Underground component not inspected and observation wells not opened (in secure area); sediment accumulation in curb cuts; bare areas around sideslopes	Clean sediment from curb cuts; inspect underground component for deficiencies; overseed to provide adequate groundcover on sideslopes
7169	7169	8H	Underground Storage	1	2	2	Bare soil on ground surface above facility; pollen observed on water surface in system; 1-2.5' water depth in system; no odors/sheens present; 36" HDPE pipes connect to chambers; 24" RCP outfall pipe; major scour in channel below outfall - no outlet protection in place	Overseed bare areas on ground surface; design/install outlet protection to prevent further erosion and degradation of natural channel downstream (permits may be necessary)

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7196	7196	1D	Bioretention Filter	2	2	2	Sediment in riser; trash/debris on surface; bare areas on sideslopes; erosion near curb; erosion/bare areas below curb cuts	Repair eroded areas; overseed and stabilize bare areas; continue routine maintenance
7200	7200	1C	Extended Detention	1	4	4	Soft embankment soils; woody species and rill erosion on embankment; vegetative growth thick around riser; trash/debris in basin; erosion and rills on sideslopes; significant sediment at inflow pipes; poor groundcover establishment; deep sediment/trash/debris within forebay; adjacent construction underway	Repair eroded areas; overseed to establish better groundcover; remove trash/debris/sediment from basin and forebay; clear vegetation from around riser structure; investigate embankment to verify proper compaction and stability
7210	7210	1D	Extended Detention	1	1	1	Woody species volunteering near riser; trash/debris present; bare areas on slope	Continue routine maintenance - including removal of woody species; overseed bare areas
7223	7223	2C	Extended Detention	2	2	2	Erosion/bare areas surrounding basin and at bottom near outfall protection at inflow points; inadequate groundcover; adjacent road construction underway; property fence missing over outfall channel	Overseed/fertilize to establish better groundcover; repair erosion; continue routine maintenance
1006A	1006A	11J	Bioretention	N/A	2	2	Dog feces/sediment on surface; bare areas on sideslopes; vehicle ruts at top of slope; mulch depleted; bare areas on surface	Repair ruts; overseed to establish better groundcover; continue routine maintenance
1006B	1006B	10J	Bioretention	N/A	2	2	Fabric blocking upstream invert of outfall pipe; downstream end of outfall barrel is crushed; settling over culvert; sediment/debris on surface; bare areas on sideslopes; vertical bank erosion; mulch depleted; dead vegetation	Clear outfall barrel and repair/replace; investigate settling over pipe - level surface; repair erosion at inflow channel; reseed surface to establish better groundcover; replace dead vegetation and mulch
1006C	1006C	10I	Bioretention	N/A	2	2	Sediment on surface; vertical bank erosion at toe of slope (basin interior); mulch depleted; bare areas on sideslopes and surface	Remove sediment; repair eroded areas; overseed to establish better groundcover; replace mulch
1006D	1006D	11J	Bioretention	N/A	2	2	Significant undercutting/erosion approximately 5' from outfall; 2' cut and fabric exposed; outfall pipe more than 50% blocked by debris; d/s end crushed/broken/cut; historic rills have stabilized; bare areas on soil; mulch depleted	Replace mulch; overseed to establish better groundcover; clean outfall pipe/replace outfall pipe to repair damage; repair erosion/undercutting below outfall

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3022A	3022A	8H	Underground Storage	N/A	2	2	Bare soil on ground surface above facility; manhole covered by dirt and difficult to open; less than 1" of sediment in 72" perforated CMP pipe; part of manifold system; minor corrosion in system; minor trash in pipe	Overseed bare areas on ground surface; clear debris from manhole to allow for easier maintenance access
9/Hannah	9/Hannah	9H	Bioretention Filter	N/A	2	2	Trash/debris; rodent holes present; no outlet protection; deceased tree in lowest cell	Replace dead vegetation; repair rodent holes; monitor inlet pipe outlet for continued erosion; consider installation of outlet protection at end of inflow pipe; continue routine maintenance
GR2	GR2	6G	Underground Storage	N/A	1	1	Bare areas on ground surface above facility and immediate around manhole; 0.5-1" of sediment with 66" perforated CMP pipe; manifold configuration; minor corrosion/trash/debris within pipe	Overseed bare areas and continue routine maintenance
GR3	GR3	6G	Underground Storage	N/A	1	1	Bare areas on ground surface above facility and immediate around manhole; 0.5-1" of sediment with 60" perforated CMP pipe; manifold configuration; minor corrosion/trash/debris within pipe	Overseed bare areas and continue routine maintenance
GS1	GS1	7G	Underground Storage	N/A	3	3	Minor corrosion and damage to standpipe in access ports; 1-2" water; 1.5-6" sediment; sulfur odor present; bare/saturated soil present - vehicular tracks observed on surface; pooled water in ruts on surface; 60" perforated PVC in manifold configuration	Restrict vehicular loads on surface above BMP; repair ruts and erosion; overseed bare areas; clear trash/debris/sediment from system; repair damage to standpipes in access ports; investigate cause of sulfur smell within system
HC1	HC1	8H	Cistern	N/A	1	1	Pollen on surface	Continue routine maintenance
HC2	HC2	8H	Cistern	N/A	1	1	Pollen on surface	Continue routine maintenance
HR1	HR1	8H	Green Roof (Extensive)	N/A	1	1	Weeds, erosive pit on surface	Remove weeds, fill pit with topsoil
HR2	HR2	8H	Green Roof (Extensive)	N/A	1	1	Weeds, vegetation sparse in some areas	Remove weeds, monitor vegetation
HR3	HR3	8H	Green Roof (Extensive)	N/A	1	1	Weeds, vegetation sparse in some areas	Remove weeds, monitor vegetation
HR4	HR4	8H	Green Roof (Extensive)	N/A	1	1	Weeds	Remove weeds
NAR1	NAR1	1C	Green Roof (Intensive)	N/A	2	2	Moss heavily present	Control moss growth; establish better grass cover; continue routine maintenance
NAR2	NAR2	1C	Green Roof (Extensive)	N/A	1	1	No issues observed	Continue routine maintenance
PP1	PP1	6H	Porous Cement	N/A	2	2	Trash/debris/sediment and minor stains on lot surface; appears newly constructed; car parking over top of access port, so vault could not be properly observed for O&M at time of inspection	Clean road sediments, trash, and debris from parking lot; conduct O&M inspection of vault when possible to verify no functionality issues

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PP2	PP2	6H	Porous Cement	N/A	2	2	Trash/debris/sediment and minor stains on lot surface; appears newly constructed; access port in center of primary travel lane; so vault could not be properly observed for O&M at time of inspection	Clean road sediments, trash, and debris from parking lot; conduct O&M inspection of vault when possible and with proper traffic control measures in place to verify no functionality issues
TB1	TB1	8H	Tree Box Filter	N/A	2	2	Deep leaf/sediment debris on surface; observation wells inaccessible to inspect; curb inlet from roadway full of sediment/debris; mulch displaced	Remove sediment/debris; replace mulch; review observation wells for subsurface issues
TB2	TB2	8H	Tree Box Filter	N/A	2	2	Deep leaf/sediment debris on surface; observation wells inaccessible to inspect; curb inlet from roadway full of sediment/debris; mulch displaced	Remove sediment/debris; replace mulch; review observation wells for subsurface issues
TB3	TB3	8H	Tree Box Filter	N/A	2	2	Deep leaf/sediment debris on surface; observation wells inaccessible to inspect; curb inlet from roadway full of sediment/debris; mulch displaced	Remove sediment/debris; replace mulch; review observation wells for subsurface issues
TB4	TB4	8H	Tree Box Filter	N/A	2	2	Deep leaf/sediment debris on surface; observation wells inaccessible to inspect; curb inlet from roadway full of sediment/debris; mulch displaced	Remove sediment/debris; replace mulch; review observation wells for subsurface issues
WT1	WT1	9H	Bioretention	N/A	2	2	Trash/debris; flow from curb cut beginning to channelize; some dead grass; debris in observation wells	Overseed to establish better groundcover; repair erosive channel; continue routine maintenance
WT2	WT2	9H	Bioretention	N/A	2	2	Trash/debris; minor erosion in basin bottom; minor erosion/bare areas along sideslopes	Overseed to establish better groundcover; repair eroded areas; repair 3" pit in bottom; continue routine maintenance