

Appendix A
SWM Field Reconnaissance

Appendix A provides a summary of the initial evaluation of the potential Best Management Practices (BMPs) in the Declaration Run and Riverside watersheds. The primary goal of the evaluation was to identify and analyze high-priority projects in both watersheds that could be included in Harford County's Capital Improvement Program.

The URS team reviewed the geographic information system (GIS) data provided by Harford County that included property ownership, 2-foot contours, storm drains, existing stormwater management facilities, land use, and impervious cover. The team also reviewed County-provided design plans for existing stormwater management facilities because the information had not been translated into GIS data.

The URS team conducted a desktop analysis using the County GIS information and stormwater management plans to identify opportunities for BMPs. The team identified 23 locations in the Declaration Run watershed and 11 locations in the Riverside watershed as potential BMP sites.

The 34 sites were assessed during the field reconnaissance for feasibility of new or retrofit BMPs. The BMPs under consideration included Environmental Site Design, Low Impact Development, green infrastructure, and traditional structural techniques. Programmatic management strategies that could be implemented on a watershed level were also considered.

The data that were collected during the field reconnaissance consisted of:

- Location
- Potential BMP Land use in surrounding area
- Percent impervious area
- Recommendations for the site
- Benefits and constraints
- Potential conflicts with existing utilities
- Potential permits/regulatory approvals
- Any observed problems

The stormwater field reconnaissance was focused on determining whether in-field conditions were appropriate for BMPs that could obtain additional water quality treatment for stormwater runoff. Ownership of the potential sites is not a selection factor because most are privately owned.

Table A-1 lists all the potential sites assessed as a part of field reconnaissance. A description of existing conditions and the proposed projects is provided in the main report (Section 3) for all the projects where a proposed improvement was recommended. The section below provides a description of all the projects that were not selected for any potential improvement.

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Appendix A: SWM Field Reconnaissance

Table A-1: Potential Watershed Improvement Projects in the Study Watersheds

Watershed	Site ID	Location	Drainage		Proposed Project
			Area (acres)	Existing Facility	
Declaration Run	D-ES-2	End of Oregonum Court	11.3	Water quality trap	Wetland
	D-ES-3	Lirtope Court and Baneberry Drive	7.8	Water quality trap	N/A
	D-ES-4	West of Arabis Court	7.4	Water quality trap	N/A
	D-ES-5	North end of Foxglove Court	8.9	Extended detention basin	Bioretention
	D-ES-6	Germander Drive	3.4	Water quality trap	Bioretention
	D-ES-7	Germander Drive and Church Creek Road	2.8	Water quality trap	Bioswale and Bioretention Wetland and Step Pool Conveyance System
	D-ES-8	Baneberry Drive	7.8	Water quality trap	N/A
	D-ES-9	Baneberry Drive and Primrose Place	4.5	Water quality trap	N/A
	D-ES-10	Baneberry Drive and Golden Rod Court	7.2	Water quality trap	N/A
	D-ES-11	Lavender Drive	1.4	Water quality trap	N/A
	D-ES-12	End of Marigold Lane	1.8	Water quality trap	Micropool and Wetland
	D-ES-15	Procedure Way	3.3	Dry pond	Bioretention
	D-NS-1	Golden Rod Court	N/A	Directly connected downspouts	Downspout Disconnection
	D-NS-2	Marigold Lane	N/A	Wide driveways	Impervious Area Reduction
	D-NS-3	Lirtope Court	0.1	Sloped impervious roofs	Green Roofs
D-NS-4	Church Creek Road	2.1	Wide sidewalks	Green Street Bump Out	
D-NS-5	Sedum Square, Horner Lane, Downs Square, Baylis Court	N/A	Large open medians	Curb Cuts	
D-NS-6	Magness Court, Hampton Hall Court, Talbots Square	N/A	Large open medians	Curb Cuts	
D-NS-7	Foxglove Court	6.0	Foxglove Court	Step Pool Conveyance System	
D-NS-8	Dalmation Place	4.6	Outfall	Bioretention	
D-NS-9	Golden Rod Court	6.3	Traditional storm drains	Tree Box Filters	
D-NS-10	Philadelphia Road	6.2	Maryland SHA wet pond	N/A	
D-NS-11	Philadelphia Road	3.3	Maryland SHA swale	N/A	
D-NS-12	Church Creek Elementary School	0.9	Traditional storm drains	Bioretention or Tree Box Filter	
D-NS-13	Church Creek Road across Church Creek Elementary School	0.9	Impervious right-of-way	Green Street Bump Out	
D-SWM0110 (ES-1)	Church Creek Elementary School	8.2	Infiltration basin	Upgrade Infiltration Basin	
D-SWM0630	Policy Drive	0.6	Underground sand filters	N/A	

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Watershed	Site ID	Location	Drainage		Proposed Project
			Area (acres)	Existing Facility	
Riverside	R-ES-1	Halls Chance Road	130.4	Dry Pond	Dry Pond Retrofit
	R-NS-1	Belcamp Park	5.5	Traditional storm drains	Bioretention
	R-NS-2	Halls Chance Lane, Caldwell Court, Caldwell Lane, Griffith Place, Independence Square, Rigbie Hall Court, Bartley Place, Jervis Square, and Courtney Lane	N/A	Large open medians	Curb Cuts
	R-NS-3	Commercial Complex on Bata Boulevard	N/A	Open area next to parking lot	Curb Cuts
	R-NS-4	Bata Boulevard	N/A	Wet Pond	N/A
	R-NS-5	Winners Circle and Carlyle Garth	N/A	Large open areas	Tree Planting
	R-NS-6	Winners Circle	1.3	Open area with yard inlet	Rain Garden
	R-NS-7	Caldwell Court South	64.3	Grass swales	Biowale and Check Dams
	R-NS-8	Carlyle Garth	1.8	Grass swales	Biowale and Check Dams
	R-SWM0267	Water Park Drive	N/A	Stormwater management facility	N/A
	R-SWM0491	West end of Millennium Drive	4.9	Dry swales	Filter Strips
	R-SWM0624	Millennium Drive	2.8	Dry swales	N/A
	R-SWM0627	Millennium Drive	4.6	Dry swales	Filter Strips
	R-SWM0638	Water Park Drive	6.6	Sand Filter Rain garden, submerged gravel wetland and permeable pavement	N/A
	R-SWM0864	Millennium Drive	0.9		N/A
	R-SWM0865	Millennium Drive	6.6	Dry swales	N/A
R-SWM0866	Route 40	2.5	Grass swales	N/A	

A.1 DECLARATION RUN WATERSHED

Project ID: D-ES-3

Project Location: Liriope Court and Baneberry Drive

Existing Conditions: The facility was identified in existing plans as a water quality trap but because it is a large, wooded area with steep slopes, access is a project-limiting condition.

Proposed Project: No improvements are recommended for the facility because access to the site is not available.

Project ID: D-ES-4

Project Location: West of Arabis Court

Existing Conditions: The facility was identified in existing plans as a water quality trap, but because it is in a large, wooded area with steep slopes, access is a project-limiting condition.

Proposed Project: No improvements are recommended for the facility because access to the site is not available.

Project ID: D-ES-9

Project Location: Baneberry Drive and Primrose Place

Existing Conditions: The facility was identified in existing plans as a water quality trap but because it is in a large, wooded area with steep slopes, access is a project-limiting condition.

Proposed Project: No improvements are recommended for the facility because access to the site is not available.

Project ID: D-ES-10

Project Location: Baneberry Drive and Golden Rod Court

Existing Conditions: The facility was identified in existing plans as a water quality trap but because it is in a large, wooded area with steep slopes, access is a project-limiting condition.

Proposed Project: No improvements are recommended for the facility because access to the site is not available.

Project ID: D-ES-11

Project Location: End of Lavender Drive

Existing Conditions: The facility was identified in existing plans as a water quality trap but because it is in a large, wooded area with steep slopes, access is a project-limiting condition.

Proposed Project: No improvements are recommended for the facility because access to the site is not available.

Project ID: D-NS-10

Project Location: Philadelphia Road

Existing Conditions: The existing facility is a pond owned by the Maryland State Highway (MD SHA) that captures runoff from Riverside Parkway and Philadelphia Road. The facility could not be accessed during the field reconnaissance because it was fenced. Some erosion was observed at the outfall of the facility.

Proposed Project: No recommendations were proposed for this site because the pond is owned by the state and it could not be accessed.



D-NS-10: Erosion observed downstream of the outfall

Project ID: D-NS-11

Project Location: Philadelphia Road

Existing Conditions: The existing site is a channel that captures runoff from Philadelphia Road and Riverside Parkway and conveys to the stormwater management facility south of Philadelphia Road. The facility appeared to be overgrown with some trees and vegetation during the field reconnaissance. The facility is located in the MD SHA right-of-way.

Proposed Project: No recommendations are proposed at this site because it is in the MD SHA right-of-way.



D-NS-11: Existing channel along Philadelphia Road

Project ID: D-SWM0630

Project Location: Policy Drive

Existing Conditions: The existing facilities are underground sand filters that capture and treat runoff from the commercial area north of Policy Drive. The facility was designed in 2007 in accordance with the current Maryland stormwater management regulations.

Proposed Project: No improvement is recommended at this site because the facility was designed recently in accordance with the current Maryland stormwater management regulations. Regular maintenance and inspections should be continued as applicable.

A.2 RIVERSIDE WATERSHED

Project ID: R-NS-4

Project Location: Bata Boulevard and Water Park Drive

Existing Conditions: The wet pond was identified as a potential BMP opportunity based on desktop analyses. However, the County has confirmed that it is not a stormwater management facility and was installed only for aesthetic purposes.

Proposed Project: No recommendations are proposed at this time.

sediment to settle.



R-NS-4: Pond along Bata Boulevard

Project ID: R-SWM0267

Project Location: Water Park Drive

Existing Conditions: The facility was identified as a stormwater management facility based on the County GIS shapefile. However, the facility could not be located during the field reconnaissance. The County has confirmed that the facility was removed during the development along Water Park Drive.

Proposed Project: There are no recommendations for this site at this time.

Project ID: R-SWM0624

Project Location: Millennium Drive

Existing Conditions: Runoff from the parking lot and the office building on Millennium Drive is captured and treated by dry swales with filter strips that were designed in 2005 as a part of the development. No major issues were observed during the field reconnaissance.

Proposed Project: There are no recommendations for this site because the dry swale system was designed recently according to the current Maryland stormwater management regulations and because there were no issues observed at the site during field reconnaissance.



R-SWM0424: Dry swale with filter strips that capture the parking lot runoff on Millennium Drive

Project ID: R-SWM0638

Project Location: Water Park Drive

Existing Conditions: The existing facility is a sand filter that was designed in 2008 to capture runoff from the development on Water Park Drive. No problems were observed at the facility during the field reconnaissance.

Proposed Project: There are no recommendations for this site because the facility was designed recently according to the current Maryland stormwater management regulations.



R-SWM0638: Existing sand filter

Project ID: R-SWM0864

Project Location: Millennium Drive

Existing Conditions: Runoff from rooftop and parking lot of Waters Edge Corporate Campus on Millennium Drive is treated by combination of ESD practices that include a rain garden, submerged gravel wetland and permeable pavement. These practices were implemented in 2013 and appear to be functioning well. The ESD practices capture runoff from approximately 0.9 acre of which 0.6 acre is impervious.

Proposed Project: No recommendations are proposed at this site as the ESD practices were designed recently following the current Maryland stormwater management regulations.

Project ID: R-SWM0865

Project Location: Millennium Drive

Existing Conditions: Runoff from a section of parking lot and four story building is captured by a system of grass swales that drain to the inlets at the east end of the parking lot. The swale system was implemented in 2013 and capture runoff from 6.6 acres of drainage area of which 4.5 acre are impervious.

Proposed Project: No recommendations are proposed at this site as the swale system was implemented recently following the current Maryland stormwater management regulations.



R-SWM0865: Existing swale

Project ID: R-SWM0866

Project Location: Route 40

Existing Conditions: Impervious runoff from a section of Pulaski Highway is treated by grass channel located along the edge of the roadway. The grass channels convey the treated runoff to the swale to recreational pond located along Millennium Drive via swale system SWM0491. A total of 2.5 acres is treated by the grass channels of which 1.2 acres are impervious.

Proposed Project: No recommendations were proposed for the site as the swale system was designed recently following the current Maryland stormwater management regulations.

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