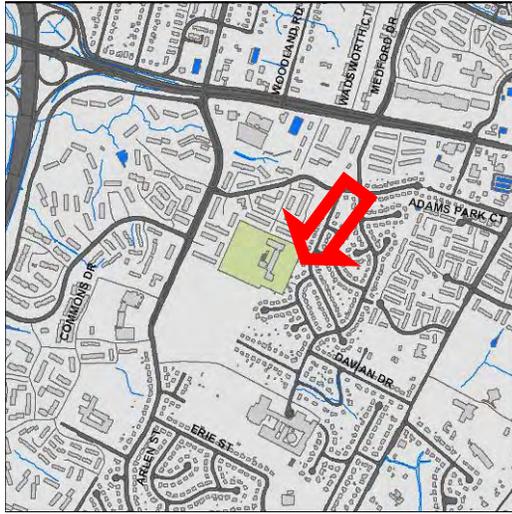


AC9539-BMP/LID



Address: 7604 Herald Street
Location: Annandale Terrace Elementary School
Land Owner: County - FCPS
PIN: 0711 01 0072C
Control Type: Water Quality
Drainage Area: 1.1 acres (AC9539A)
 0.72 acres (AC9539B)
Receiving Waters: Unknown tributary of Accotink Creek

Description: Installation of two bioretention basins for project AC9539A and three tree box filters for project AC9539B are proposed to treat the parking lot runoff from the Annandale Terrace Elementary School. Currently there are no existing stormwater management practices at the site and runoff flows directly into the storm drain system. Sediment deposition in the parking lot was observed.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: The project will provide water quality treatment for the two school parking lots during storm events. Moderate sedimentation was observed from impervious areas at the site and sediment deposition was evident in and around existing storm drain inlets. Bioretention and tree box filter retrofits will help to capture sediment and prevent it from entering the storm drain system. In addition, the location of these projects on school grounds may provide significant educational benefits. Signage can be placed to educate nearby residents on the project and the environmental benefits. It is estimated that an annual total of 223 lbs of sediment, two lbs of total nitrogen and one lb of total phosphorus would be reduced by this project.

Project Design Considerations: No environmental constraints or permitting issues are anticipated. Access to the proposed sites is excellent through the parking lot and around the building. Property ownership is public but coordination with the elementary school will be necessary for this site. Construction during the summer months would be preferred.

| Costs: | | | | |
|-------------------------------|-----------------|--------------|---|------------------|
| ITEM | QUANTITY | UNITS | UNIT COST | TOTAL |
| Bioretention Filter and Basin | 158 | SY | \$150.00 | \$23,700 |
| Tree Box Filters | 3 | EA | \$10,000.00 | \$30,000 |
| | | | Initial Project Cost | \$53,700 |
| Ancillary Items | 1 | LS | 5% of project | \$2,685 |
| Erosion and Sediment Control | 1 | LS | 10% of project | \$5,370 |
| | | | Base Construction Cost | \$61,755 |
| | | | Mobilization (5%) | \$3,088 |
| | | | Subtotal 1 | \$64,843 |
| | | | Contingency (25%) | \$16,211 |
| | | | Subtotal 2 | \$81,053 |
| | | | Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | \$36,474 |
| | | | Estimated Project Cost | \$118,000 |



Site photo: Proposed location for a tree box filter to capture and treat parking lot runoff.



Site photo: Proposed location for a bioretention area to capture and treat parking lot runoff.

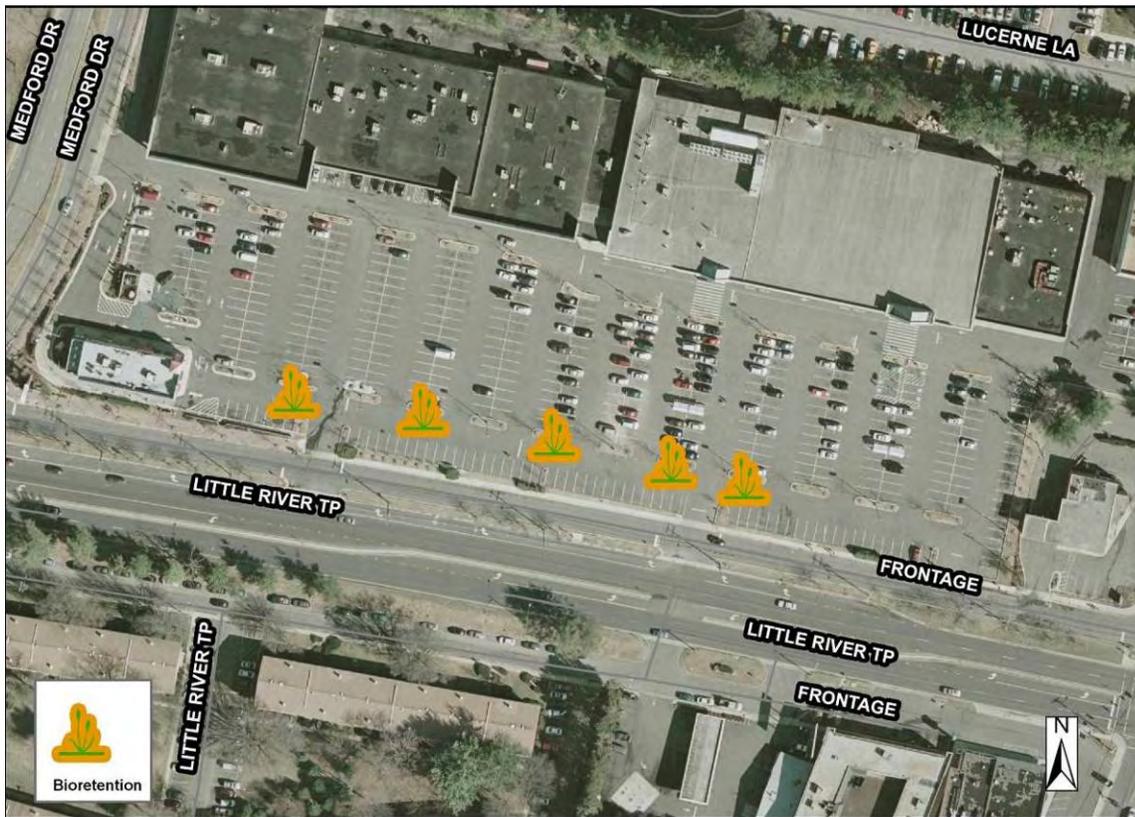
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AC9541-BMP/LID



Address: 7450 Little River Turnpike
Location: Little River Shopping Center
Land Owner: Private - Commercial
PIN: 0711 20 0006
Control Type: Water Quality
Drainage Area: 2.1 ac
Receiving Waters: Unknown tributary of Accotink Creek

Description: Bioretention filters are proposed to treat the runoff from the parking lot of the Little River Shopping Center on Little River Turnpike. The bioretention facilities would be located at the five existing landscaped islands. Underdrains for the facilities would be tied into the existing stormwater infrastructure on the site.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: Implementing bioretention facilities will provide water quality treatment for the parking lot during storm events. Bioretention facilities remove suspended solids, heavy metals, phosphorus and nitrogen and hydrocarbons from storm water runoff. These are all pollutants that are typically found in parking lot runoff. Further, bioretention facilities prevent trash and debris from entering the storm drain system and have the ability to cool down warm runoff before it enters the stream system. It is estimated that an annual total of 573 lbs of sediment, eight lbs of total nitrogen and one lb of total phosphorus would be reduced by this project.

Project Design Considerations: No environmental constraints or permitting issues are anticipated. Access to the proposed sites is excellent from the parking lot. Property ownership is private and coordination with the shopping center owner/management will be necessary for these sites. Some reduction in parking spaces can be expected with these sites during construction. Utility constraints on the site are unlikely but the location of all utilities in close proximity to the proposed locations should be confirmed.

| Costs: | | | | |
|---|-----------------|--------------|-------------------------------|------------------|
| ITEM | QUANTITY | UNITS | UNIT COST | TOTAL |
| Bioretention Filter and Basin | 303 | SY | \$150.00 | \$45,450 |
| | | | Initial Project Cost | \$45,450 |
| Ancillary Items | 1 | LS | 5% of project | \$2,273 |
| Erosion and Sediment Control | 1 | LS | 10% of project | \$4,545 |
| | | | Base Construction Cost | \$52,268 |
| | | | Mobilization (5%) | \$2,613 |
| | | | Subtotal 1 | \$54,881 |
| | | | Contingency (25%) | \$13,720 |
| | | | Subtotal 2 | \$68,601 |
| Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | | | | \$30,870 |
| | | | Estimated Project Cost | \$100,000 |



Site photo: Existing storm drain on site.



Site photo: Business complex located off Heritage Drive.

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AC9545-BMP/LID



Address: 8515 Tobin Road And 3406 Woodburn Road
Location: Eakin Park and Byzantine Church parking lot
Land Owner: County – FCPA / Private
PIN: 0591 01 0005
 0591 01 0021
Control Type Water Quality
Drainage Area AC9545A-0.22 acres
 AC9545B-1.1 acres
Receiving Waters Unknown tributary of Accotink Creek

Description: A bioretention basin is proposed for project AC9545A to treat the runoff from a parking lot in Eakin Park. The bioretention facility would be located between the parking lot and the outfield of a baseball diamond.

Bioretention basins are also proposed for project AC9545B to treat the runoff from a church parking lot located along Woodburn Road. In addition, roof drains from the church currently flow to a ditch and are causing severe erosion; a third bioretention facility is proposed to treat this rooftop runoff



Project Area Map: Conceptual plan showing potential project location

Project Benefits: Implementing the bioretention facility for project AC9545A will provide water quality treatment for this parking lot during storm events, removing pollutants such as sediment, nutrients, and hydrocarbons. This site can also provide public educational opportunities for park users and would be an excellent demonstration project.

Implementing AC9545B will provide water quality treatment for the church parking lot during storm events. Bioretention facilities remove suspended solids, heavy metals, phosphorus and nitrogen, and oil and grease from storm water runoff. Bioretention facilities can also reduce runoff and may alleviate excessive erosion and headcutting in the ditch behind the church. The project also provides public education benefits.

It is estimated that an annual total of 164 lbs of sediment, one lb of total nitrogen and one-third lb of total phosphorus would be reduced by this project.

Project Design Considerations: No environmental constraints or permitting issues are anticipated for project AC9545A. Access to the proposed sites is excellent from roads and the parking lot. Property ownership is public so coordination should not be a problem. Sewer utilities are present and should be accurately located before the project is initiated. In order to bypass the existing storm drain inlet, curb cuts and trench drains through the existing sidewalk will need to be installed on either side of the inlet to allow stormwater to flow into the practice.

There are also no environmental constraints or permitting issues anticipated for project AC9545B. Access to the proposed sites is excellent from roads and the parking lot. Property ownership is most likely private and coordination with the church management will be necessary for these sites. Utilities are present in the project area and should be accurately located during design..

| Costs: | | | | |
|---|-----------------|--------------|-------------------------------|-----------------|
| ITEM | QUANTITY | UNITS | UNIT COST | TOTAL |
| Bioretention Filter and Basin | 32 | SY | \$150.00 | \$35,700 |
| | | | Initial Project Cost | \$35,700 |
| Ancillary Items | 1 | LS | 5% of project | \$1,785 |
| Erosion and Sediment Control | 1 | LS | 10% of project | \$3,570 |
| | | | Base Construction Cost | \$41,055 |
| | | | Mobilization (5%) | \$2,053 |
| | | | Subtotal 1 | \$43,108 |
| | | | Contingency (25%) | \$10,777 |
| | | | Subtotal 2 | \$53,885 |
| Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | | | | \$24,248 |
| | | | Estimated Project Cost | \$79,000 |



Site photo: Bioretention filter project location for AC9545A.



Site photo: Bioretention facility project location for project AC9545B.



Site photo: Erosion and headcutting caused by roof drains.

AC9546-BMP/LID



Address: 9107 Horner Court
Location: Mantua Elementary School
Land Owner: County - FCPS
PIN: 0582 01 0002
Control Type: Water Quality
Drainage Area: 4.5 acres
Receiving Waters: Crook Branch

Description: Four bioretention filters have been installed on the Mantua Elementary School property. These existing facilities are not functioning as optimally as they could due to a lack of vegetative cover and unstable banks. These sites are candidates for additional amendments to bring them to demonstration quality in this public location. As part of the overall project one additional location for a bioretention filter was noted at an outfall on the southeast portion of the property.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: Existing bioretention filters at the site are providing some water quality benefit but need vegetation and soil stabilization amendments in order to function more effectively. Bioretention sites will provide greater water quality treatment for several parking lots during storm events by removing suspended solids, heavy metals, nutrients including phosphorus and nitrogen, oil and grease from storm water runoff. The project site has the potential to be a high quality demonstration project and outreach opportunity by upgrading the existing practices. It is estimated that an annual total of 483 lbs of sediment, six lbs of total nitrogen and one lb of total phosphorus would be reduced by this project.

Project Design Considerations: No environmental constraints or permitting issues are anticipated. Access to the proposed sites is excellent from existing paved surfaces. Property ownership is public .

Costs:

| ITEM | QUANTITY | UNITS | UNIT COST | TOTAL |
|---------------------------------|----------|-------|---|------------------|
| Bioretention Filter and Basin | 583 | SY | \$75.00 | \$43,725 |
| Organic Compost Soil Amendments | 146 | CY | \$40.00 | \$5,840 |
| | | | Initial Project Cost | \$49,565 |
| Ancillary Items | 1 | LS | 5% of project | \$2,478 |
| Erosion and Sediment Control | 1 | LS | 10% of project | \$4,957 |
| | | | Base Construction Cost | \$57,000 |
| | | | Mobilization (5%) | \$2,850 |
| | | | Subtotal 1 | \$59,850 |
| | | | Contingency (25%) | \$14,963 |
| | | | Subtotal 2 | \$74,813 |
| | | | Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | \$33,666 |
| | | | Estimated Project Cost | \$109,000 |

Note: Cost for bioretention facilities estimated at 50% of typical costs, since most of the project involves rehabilitation rather than full construction.



Site photo: Existing bioretention filter in need of amendments.



Site photo: Existing outfall on project site.

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AC9547-BMP/LID



Address: 9019 Little River Turnpike and Pixie Court
Location: Providence Presbyterian Church and Pixie Court
Land Owner: Private / State - VDOT
PIN: 0584 01 0001
 0584 17 0005
Control Type Water Quality
Drainage Area AC9547A-0.61 acres
 AC9547B-1.7 acres
Receiving Waters Unknown tributary of Crook Branch

Description: This project would add bioretention facilities to two separate sites; one along Little River Turnpike and the second at the Pixie Court cul-de-sac. Installing a bioretention filter with associated disconnection of downspouts is proposed to treat stormwater runoff at Providence Presbyterian Church for project AC9547A. Curb extension bioretention filters and basins are proposed for installation in the Pixie Court cul-de-sac for project AC9547B. Runoff from Pixie Court currently flows through the cul-de-sac and into a storm drain inlet. The runoff is eventually discharged to a small eroded creek. No real opportunity for stormwater retrofitting exists at the outlet of the pipe. Instead, the best opportunity is to treat the runoff before it enters the inlet with three bioretention facilities at the curb.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: For Project AC9547A at the Providence Presbyterian Church, disconnecting downspouts and implementing a bioretention facility to receive runoff from the disconnected downspouts will provide water quality treatment for a portion of the church property, removing pollutants and reducing runoff volumes. The project's location at a church may also provide educational opportunities at the site.

For project AC9547B, implementing bioretention facilities will provide water quality treatment for Pixie Court during storm events, removing pollutants such as sediment, nutrients and oils. In addition, by collecting and treating this runoff before it is discharged to the stream, erosive forces on the stream may be reduced. It is estimated that an annual total of 836 lbs of sediment, ten lbs of total nitrogen and two lbs of total phosphorus would be reduced by this project.

Project Design Considerations: No environmental constraints or permitting issues are anticipated for project AC9547A. Access to the proposed site is good, although recent construction at the church will need to be avoided and may affect placement of the facility. As the property is privately owned, cooperation with Providence Presbyterian Church will be necessary.

There are also no environmental constraints or permitting issues anticipated for project AC9547B. Access to the proposed site is excellent from Pixie Court. The area to be disturbed by construction of the bioretention facilities is in the street itself, so property ownership will not be an issue, however, consultation with the adjacent homeowners would be beneficial. Pavement cuts beyond the footprint of the facilities will be necessary to connect the underdrain to the storm drain system. Utility conflicts, including house connections for sanitary sewer, water, and gas services, are likely to be present and may constrain the design of these facilities.

Costs:

| ITEM | QUANTITY | UNITS | UNIT COST | TOTAL |
|---|----------|-------|-------------------------------|-----------------|
| Bioretention Filter and Basin | 44 | SY | \$150.00 | \$43,350 |
| | | | Initial Project Cost | \$43,350 |
| Ancillary Items | 1 | LS | 5% of project | \$2,168 |
| Erosion and Sediment Control | 1 | LS | 10% of project | \$4,335 |
| | | | Base Construction Cost | \$49,853 |
| | | | Mobilization (5%) | \$2,493 |
| | | | Subtotal 1 | \$52,345 |
| | | | Contingency (25%) | \$13,086 |
| | | | Subtotal 2 | \$65,431 |
| Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | | | | \$29,444 |
| | | | Estimated Project Cost | \$95,000 |



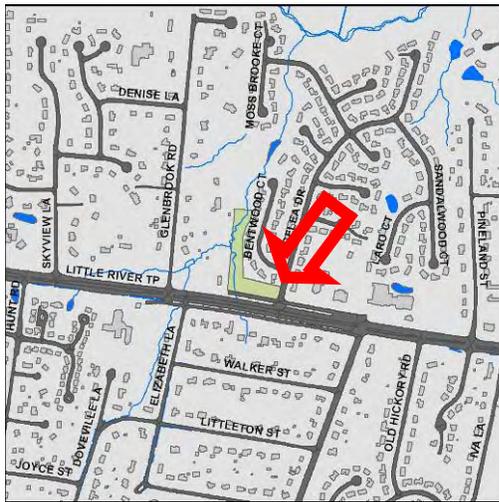
Site photo: Connected downspouts at the church for project AC9547A



Site photo: Cul-de-sac with space for curb extension at site AC9547B

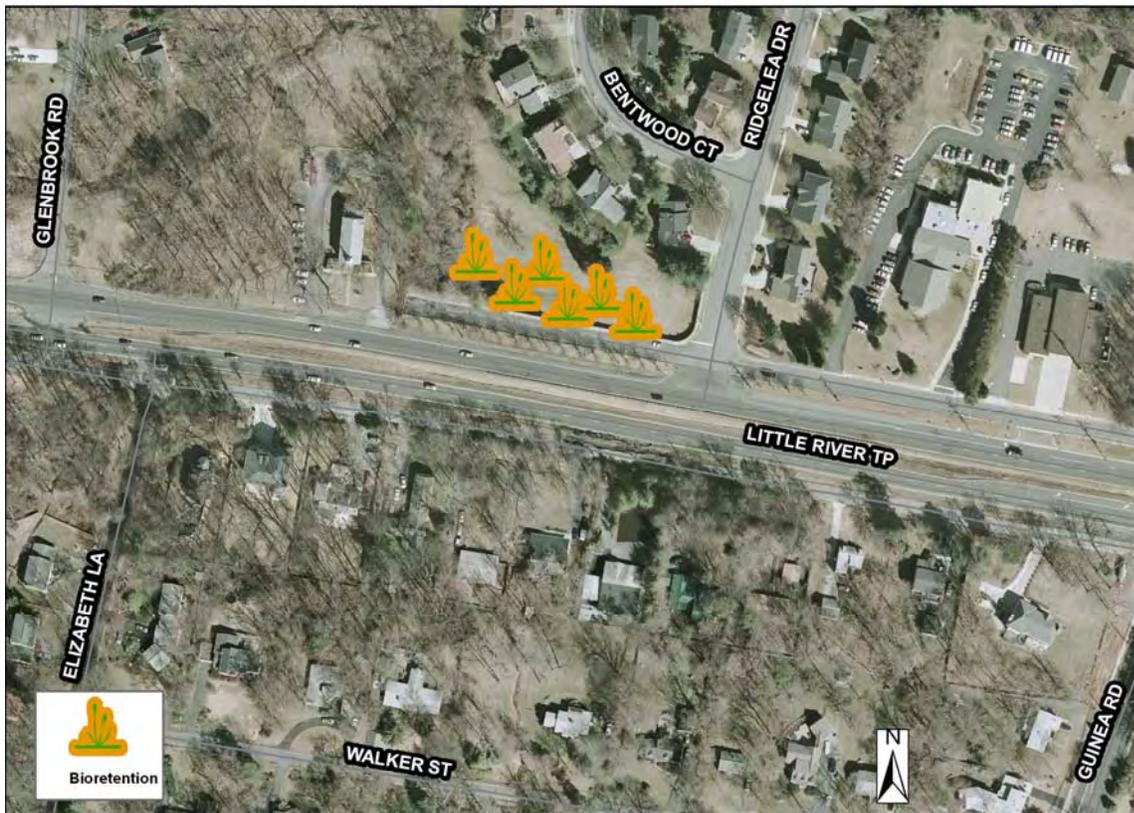
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AC9548-BMP/LID



Address: 8930 Little River Turnpike
Location: Ridgelea Hills neighborhood
Land Owner: Private
PIN: 0584 28 E
Control Type: Water Quality
Drainage Area: 28.0 acres
Receiving Waters: Unknown tributary of Crook Branch

Description: Bioretention filters are proposed to treat runoff from Little River Turnpike and the adjacent Frontage Road near Ridgelea Drive. Given the large drainage area, this project will require a flow splitter to divert water from the main channel to the proposed bioretention cells. The project will be sited in open space next to Frontage Road on property owned by a homeowner association. The drainage area currently collects stormwater from residential, commercial and roadway runoff from Little River Turnpike.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: Bioretention filters will provide water quality treatment for neighborhood, commercial sites and roadway runoff during storm events. Use of the flow splitter will create an offline bioretention system to remove pollutants including suspended solids, heavy metals, nutrients, and oil and grease. Larger flows will bypass the facilities entirely in the existing channel, reducing the chance for failure or damage. It is estimated that an annual total of 1,643 lbs of sediment, 18 lbs of total nitrogen and three lbs of total phosphorus would be reduced by this project.

Project Design Considerations: No environmental constraints or permitting issues are anticipated. Access to the proposed sites is excellent from paved surfaces. Property ownership is private through the local homeowner association and coordination with the owner / management will be necessary. Minimal tree removal at the periphery of the site may be required. Infiltration capacity of the soils should be further assessed and utilities should be identified as part of the design process.

| Costs: | | | | |
|---|-----------------|--------------|-------------------------------|------------------|
| ITEM | QUANTITY | UNITS | UNIT COST | TOTAL |
| Bioretention Filter and Basin | 1210 | SY | \$150.00 | \$181,500 |
| | | | Initial Project Cost | \$181,500 |
| Ancillary Items | 1 | LS | 5% of project | \$9,075 |
| Erosion and Sediment Control | 1 | LS | 10% of project | \$18,150 |
| | | | Base Construction Cost | \$208,725 |
| | | | Mobilization (5%) | \$10,436 |
| | | | Subtotal 1 | \$219,161 |
| | | | Contingency (25%) | \$54,790 |
| | | | Subtotal 2 | \$273,952 |
| Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | | | | \$123,278 |
| | | | Estimated Project Cost | \$398,000 |



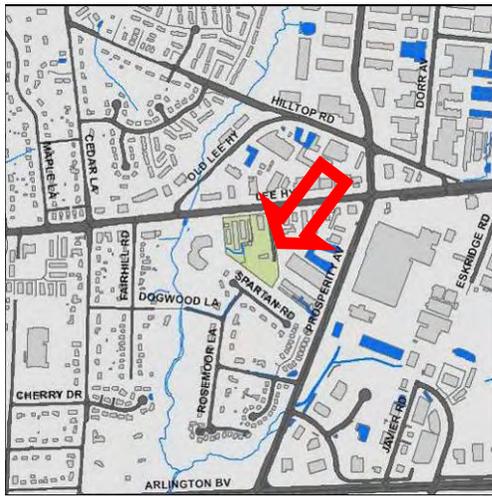
Site photo: Outfall to project area



Site photo: Project area viewed from Frontage Road.

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AC9550-BMP/LID



Address: 8505 Lee Highway
Location: Industry Lane and Lee Highway
Land Owner: Private - Industrial
PIN: 0493 01 0050A
Control Type: Water Quality
Drainage Area: AC9550A: 1.7 acres
 AC9550B: 2.1 acres
Receiving Waters: Long Branch North

Description: Multiple practices are proposed for industrial properties on Industrial Lane adjacent to Lee Highway. Installation of two tree box filters and a sand filter is proposed at site AC9550A. A vegetated swale that would replace the existing concrete swale is proposed at site AC9550B.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: Adding tree box filters and a sand filter will provide water quality treatment for site AC9550A, removing sediment, heavy metals, nutrients and oils from the site, which is a likely hotspot for these pollutants. A vegetated swale will provide significant water quality improvements over the existing concrete channel at site AC9550B. It is estimated that an annual total of 1,134 lbs of sediment, seven lbs of total nitrogen and one lb of total phosphorus would be reduced by this project.

Project Design Considerations: No environmental constraints or permitting issues are anticipated. Access to the proposed sites will be constrained, due to tight spaces on the properties. As the properties are privately owned, consultation and cooperation with the property owners will be necessary. The depth of the existing storm drain system may affect how well the sand filter and vegetated swale can be implemented.

| Costs: | | | | |
|------------------------------|-----------------|--------------|---|------------------|
| ITEM | QUANTITY | UNITS | UNIT COST | TOTAL |
| Tree Box Filters | 2 | EA | \$10,000.00 | \$20,000 |
| Sand Filter | 1634 | CF* | \$65.00 | \$106,210 |
| Vegetated Swale | 267 | SY | \$150.00 | \$40,050 |
| | | | Initial Project Cost | \$166,260 |
| Ancillary Items | 1 | LS | 5% of project | \$8,313 |
| Erosion and Sediment Control | 1 | LS | 10% of project | \$16,626 |
| | | | Base Construction Cost | \$191,199 |
| | | | Mobilization (5%) | \$9,560 |
| | | | Subtotal 1 | \$200,759 |
| | | | Contingency (25%) | \$50,190 |
| | | | Subtotal 2 | \$250,949 |
| | | | Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | \$112,927 |
| | | | Estimated Project Cost | \$364,000 |

*Note: Sand Filter line item is given based on \$65/cf of runoff treated, rather than the actual size of the project installation.



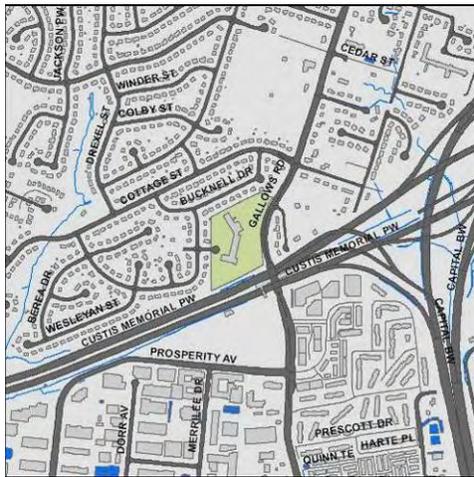
Site photo: AC9550A, near location of proposed sand filter.



Site photo: AC9550B, concrete channel to be replaced with a vegetated swale.

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AC9551-BMP/LID



Address: 80526 Galloway Road
Location: Stenwood Elementary School
Land Owner: County - FCPS
PIN: 0492 01 0012
Control Type: Water Quality
Drainage Area: 1.5 acres
Receiving Waters: Unknown tributary of Long Branch North

Description: Two bioretention filters or basins are proposed to treat the runoff from the rooftop and parking area of Stenwood Elementary School. Runoff from the parking area and rooftop is currently conveyed directly to the storm drain system. Disconnection and routing to the bioretention facilities would allow for water quality treatment before the runoff enters the stream system.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: Bioretention facilities will provide water quality treatment for the rooftop and parking area during storm events. Bioretention facilities remove sediment, trash, nutrients, and oil and grease from storm water runoff. The location of the project could provide educational opportunities for the students of Stenwood Elementary. It is estimated that an annual total of 302 lbs of sediment, three lbs of total nitrogen and one lb of total phosphorus would be reduced by this project.

Project Design Considerations: No environmental constraints or permitting issues are anticipated. Access to the proposed sites is excellent from the adjacent parking lot, although the location of the baseball diamond nearby may constrain either the design or access to the project. As the site is a school, coordination and cooperation with the school district will be necessary for these sites. In order to treat the runoff from the parking area, curb cuts will be necessary to bypass the existing catch basin. To treat runoff from the rooftop, the internal downspouts will need to be disconnected from the catch basin and directed into the bioretention facility.

| Costs: | | | | |
|---|-----------------|--------------|-------------------------------|-----------------|
| ITEM | QUANTITY | UNITS | UNIT COST | TOTAL |
| Bioretention Filter and Basin | 151 | SY | \$150.00 | \$22,650 |
| | | | Initial Project Cost | \$22,650 |
| Ancillary Items | 1 | LS | 5% of project | \$1,133 |
| Erosion and Sediment Control | 1 | LS | 10% of project | \$2,265 |
| | | | Base Construction Cost | \$26,048 |
| | | | Mobilization (5%) | \$1,302 |
| | | | Subtotal 1 | \$27,350 |
| | | | Contingency (25%) | \$6,837 |
| | | | Subtotal 2 | \$34,187 |
| Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | | | | \$15,384 |
| | | | Estimated Project Cost | \$50,000 |



Site photo: Catch basin in parking area and bioretention facility location.



Site photo: Catch basin in field that includes rooftop connections.

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AC9553-BMP/LID



Address: 3091 Nutley Sreet
Location: Pan Am Shopping Center
Land Owner: Private
PIN: 0484 01 0012F
Control Type Water Quality
Drainage Area 3.4 acres
Receiving Waters Hunters Branch

Description: A series of tree box filters and bioretention basins are proposed to treat the runoff from the Pan Am Shopping Center parking lot located along Nutley Street. The facilities will be installed adjacent to storm drain inlets at existing parking medians and along the vegetated area on the west side of the lot. An underdrain will be installed and the existing stormwater infrastructure will be used for overflow.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: These BMP/LID facilities will provide water quality treatment for this parking lot during storm events. Bioretention facilities remove suspended solids, heavy metals, phosphorus and nitrogen and oil and grease from storm water runoff. They also prevent trash and debris from entering the storm drain system and have the ability to cool down warm runoff before it enters the stream system. It is estimated that an annual total of 878 lbs of sediment, ten lbs of total nitrogen and one lb of total phosphorus would be reduced by this project.

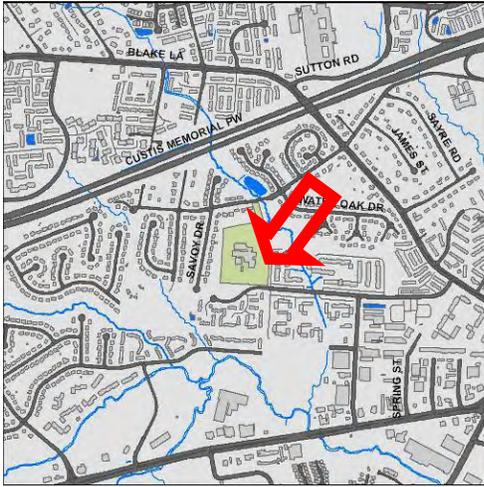
Project Design Considerations: No environmental constraints or permitting issues are anticipated. Utilities are present in the project area and should be accounted for in the project design. Access to the proposed sites is excellent from roads and the commercial parking lot. Property ownership is private and coordination with the shopping center owner/management will be necessary.

| | | | | Costs: | |
|-------------------------------|-----|----|---|------------------|--|
| Tree Box Filters | 5 | EA | \$10,000.00 | \$50,000 | |
| Bioretention Filter and Basin | 591 | SY | \$150.00 | \$88,650 | |
| | | | Initial Project Costs | \$138,650 | |
| Ancillary Items | 1 | LS | 5% of Project | \$6,933 | |
| Erosion and Sediment Control | 1 | LS | 10% of Project | \$13,865 | |
| | | | Base Construction Costs | \$159,448 | |
| | | | Mobilization (5%) | \$7,972 | |
| | | | Subtotal 1 | \$167,420 | |
| | | | Contingency (25%) | \$41,855 | |
| | | | Subtotal 2 | \$209,275 | |
| | | | Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | \$94,174 | |
| | | | Estimated Project Cost | \$304,000 | |



Site photo: Potential tree box filter location.

AC9558-BMP/LID



Address: 9819 Five Oaks Road
Location: Mosby Woods Elementary School
Land Owner: County - FCPS
PIN: 0483 01 0016
Control Type: Water Quality
Drainage Area: 2.1 acres
Receiving Waters: Unknown tributary of Accotink Creek

Description: This project proposes to install two bioretention facilities to treat a portion of the parking lot at the Mosby Woods Elementary School. Implementation would involve installing curb cuts in existing islands to allow runoff to bypass the storm drains and flow to the new bioretention facilities in the islands. The location provides excellent educational demonstration opportunities for the students.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: Implementing the proposed bioretention facilities will provide water quality treatment for the parking lot during storm events and remove sediment, heavy metal, nutrients and hydrocarbon pollutants. The location of the project at a public school will promote experiential learning opportunities for both students and the general public. It is estimated that an annual total of 285 lbs of sediment, four lbs of total nitrogen and one lb of total phosphorus would be reduced by this project.

Project Design Considerations: No environmental constraints or permitting issues are anticipated. Access to the proposed sites is excellent from roads and the school parking lot. Property ownership is public, but coordination with the school district will be necessary.

Costs:

| ITEM | QUANTITY | UNITS | UNIT COST | TOTAL |
|-------------------------------|----------|-------|---|------------------|
| Bioretention Filter and Basin | 303 | SY | \$150.00 | \$45,450 |
| | | | Initial Project Cost | \$45,450 |
| Ancillary Items | 1 | LS | 5% of project | \$2,273 |
| Erosion and Sediment Control | 1 | LS | 10% of project | \$4,545 |
| | | | Base Construction Cost | \$52,268 |
| | | | Mobilization (5%) | \$2,613 |
| | | | Subtotal 1 | \$54,881 |
| | | | Contingency (25%) | \$13,720 |
| | | | Subtotal 2 | \$68,601 |
| | | | Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | \$30,870 |
| | | | Estimated Project Cost | \$100,000 |



Site Photo: Parking lot island where bioretention facilities can be located.



Site Photo: Parking lot island where bioretention facilities can be located.

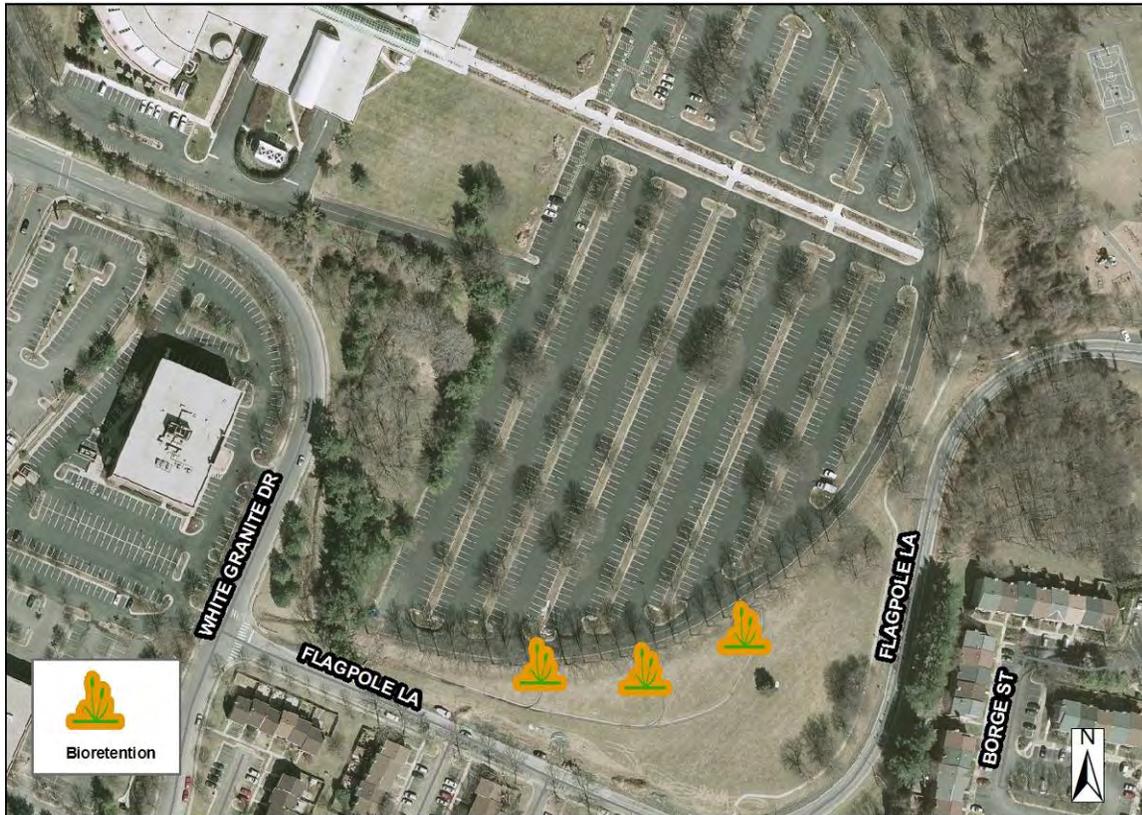
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AC9562-BMP/LID



Address: 3033 Chain Bridge Road
Location: AT&T office building
Land Owner: Private - Commercial
PIN: 0472 01 0058
Control Type Water Quality
Drainage Area 7.3 acres
Receiving Waters Unknown tributary of Accotink Creek

Description: A series of bioretention filters and basins is proposed to treat runoff from the AT&T building and parking lot on Chain Bridge Road. Currently, the parking area drains through three outfalls to a dry pond with a concrete channel located in an open grass field at the south end of the parking lot. There is sufficient space at the inflows to the pond to create bioretention facilities to pre-treat runoff for water quality and maintain the existing detention characteristics of the pond.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: Currently, runoff is treated in a dry pond that provides no significant water quality treatment. Adding bioretention facilities will improve water quality treatment for the office complex during storm events by removing sediment, heavy metals, oil and nutrients from the runoff. It is estimated that an annual total of 1,917 lbs of sediment, 21 lbs of total nitrogen and three lbs of total phosphorus would be reduced by this project.

Project Design Considerations: No environmental constraints or permitting issues are anticipated. Access to the proposed sites is excellent from adjacent roads. As the property is privately owned, coordination with the owner/management will be necessary. Construction will cause negligible impacts to the use of the property and no loss of parking is anticipated.

Costs:

| ITEM | QUANTITY | UNITS | UNIT COST | TOTAL |
|---------------------------------|----------|-------|---|------------------|
| Bioretention Filters and Basins | 999 | SY | \$150.00 | \$149,850 |
| | | | Initial Project Cost | \$149,850 |
| Ancillary Items | 1 | LS | 5% of project | \$7,493 |
| Erosion and Sediment Control | 1 | LS | 10% of project | \$14,985 |
| | | | Base Construction Cost | \$172,328 |
| | | | Mobilization (5%) | \$8,616 |
| | | | Subtotal 1 | \$180,944 |
| | | | Contingency (25%) | \$45,236 |
| | | | Subtotal 2 | \$226,180 |
| | | | Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%) | \$101,781 |
| | | | Estimated Project Cost | \$328,000 |



Site photo: One of three bioretention sites, at pond inflow as indicated.