

5.3 Project Fact Sheets

Project fact sheets for the 70 top ranked 10-year projects are provided in this section. Each fact sheet includes the following information:

- Project number
- Project location map and address
- Land owner
- Parcel ID numbers
- Stormwater control type
- Drainage area
- Receiving waters
- Project description
- Project area map showing proposed projects
- Project benefits
- Project design considerations
- Project costs

Fact sheets are organized by WMA with Sugarland Run WMAs listed before Horsepen Creek WMAs and each WMA listed alphabetically.

1. Sugarland Run Watershed, Folly Lick Branch WMA
2. Sugarland Run Watershed, Headwaters WMA
3. Sugarland Run Watershed, Lower WMA
4. Sugarland Run Watershed, Lower Middle WMA
5. Sugarland Run Watershed, Upper WMA
6. Sugarland Run Watershed, Upper Middle WMA
7. Horsepen Creek Watershed, Cedar Run WMA
8. Horsepen Creek Watershed, Frying Pan Branch WMA
9. Horsepen Creek Watershed, Lower Middle WMA
10. Horsepen Creek Watershed, Merrybrook Run WMA
11. Horsepen Creek Watershed, Middle WMA
12. Horsepen Creek Watershed, Upper WMA

5.3.1 Sugarland Run Watershed, Folly Lick Branch W MA Fact Sheets

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SU9117 Stormwater Pond Retrofit



Address: 12537 Misty Water Drive & 12573 Rock Ridge Road
Location: Dranesville Road & Hiddenbrook Drive
Land Owner: County
PIN: 0102-14-B, 0102-14-H
Control Type: Quality/Quantity
Drainage Area: 73 acres
Receiving Waters: Folly Lick Branch

Description: Improve existing dry pond (0827DP) to extended detention dry basin and existing dry ponds (0637DP and 0934DP) to single enhanced extended detention dry basin with marsh areas. Remove trickle ditches, install forebay and install/retrofit outlet structure.



Project Area Map

Project Benefits: This project will improve water quality in downstream waterbodies by removing an estimated five tons/yr of total suspended solids, 68 lbs/yr of nitrogen, and 13 lbs/yr of phosphorus. The retrofitted basin will reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat. Removal of the trickle ditch will slow stormwater velocities, and the installation of the forebay will enhance sediment deposition at the inlet of the basin.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. These basins are existing County facilities. 0934DP and 0827DP are located on storm drainage easements. A storm drainage easement may be necessary for 0637DP. They are all located adjacent to a Colonial Gas easement. Accessibility is excellent from Hiddenbrook Drive, Rock Ridge Road, or the gas easement. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	446	\$40.00	\$17,840.00
Plantings	AC	1.07	\$25,000.00	\$26,750.00
Clear and Grub	AC	0.81	\$8,500.00	\$6,885.00
Grading and Excavation	CY	3820	\$35.00	\$133,700.00
Embankment	CY	45	\$50.00	\$2,250.00
Outflow Pipe	LF	50	\$125.00	\$6,250.00
RipRap Stabilization	SY	22	\$100.00	\$2,200.00
Structural BMP and Incidentals (Med)	LS	2	\$15,000.00	\$30,000.00
			Initial Project Costs	\$225,875.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$11,293.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$22,587.50
			Base Construction Costs	\$259,756.25
			<i>Mobilization (5%)</i>	\$12,987.81
			Subtotal 1	\$272,744.06
			<i>Contingency (25%)</i>	\$68,186.02
			Subtotal 2	\$340,930.08
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$153,418.54
			Total Costs	\$494,348.61
			Estimated Project Costs	\$500,000.00

SU9123 Stormwater Pond Retrofit



Address:	12538 Philmont Drive
Location:	Near Philmont Drive & Judd Court
Land Owner:	County
PIN:	0102-16-C4
Control Type	Quality/Quantity
Drainage Area	60 acres
Receiving Waters	Folly Lick Branch

Description: Improve existing regional dry pond S-04 (1440DP) to enhanced extended detention dry basin with marsh areas. Remove concrete trickle ditch and retrofit outlet structure.



Retrofit to Enhanced ED Basin

Project Area Map

Project Benefits: An estimated one ton/yr of total suspended solids, 75 lbs/yr of nitrogen, and 10 lbs/yr of phosphorus will be removed. This project will also generally improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Projects in RPAs may require exemptions or waivers. This is an existing county facility. A storm drainage easement may be necessary. Accessibility is excellent from Philmont Drive. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	158	\$40.00	\$6,320.00
Plantings	AC	0.79	\$25,000.00	\$19,750.00
Grading and Excavation	CY	2535	\$35.00	\$88,725.00
Embankment	CY	200	\$50.00	\$10,000.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
			Initial Project Costs	\$138,395.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$6,919.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$13,839.50
			Base Construction Costs	\$159,154.25
			<i>Mobilization (5%)</i>	\$7,957.71
			Subtotal 1	\$167,111.96
			<i>Contingency (25%)</i>	\$41,777.99
			Subtotal 2	\$208,889.95
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$94,000.48
			Total Costs	\$302,890.43
			Estimated Project Costs	\$310,000.00

SU9201 New Stormwater Pond, Stream Restoration



Address: 12628 Fantasia Drive
Location: Folly Lick stream corridor between Fantasia Drive & Monroe Street
Land Owner: County/Private
PIN: 0102-02-0001, 0102-02-0001B, 0102-02-0001C, 0102-02-0001D, 0102-02-0002A, 0102-02-0003B, 0102-04-D, 0104-02-0001B
Control Type: Quality/Quantity
Drainage Area: 1400 acres
Receiving Waters: Folly Lick Branch

Description: The community around Fantasia Drive does not have existing stormwater controls and significant stream erosion is occurring downstream. Construct an extended detention dry pond, improve the outfall and repair stream erosion impacts.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. The streambank restoration will stabilize the streambanks, reduce sediment and nutrient loadings, and improve water quality.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. A storm drainage easement may be necessary. Accessibility may be difficult due to the surrounding woodland and residential properties. Access can be taken from Fantasia Drive and a nearby storm drainage easement. Tree impacts are expected. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	26	\$40.00	\$1,040.00
Plantings	AC	0.41	\$25,000.00	\$10,250.00
Grading and Excavation	CY	478	\$35.00	\$16,730.00
Access Road	SY	111	\$25.00	\$2,775.00
Access Road Gate	EA	1	\$2,500.00	\$2,500.00
Structural BMP and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
New Storm Pipe (Low)	LF	20	\$100.00	\$2,000.00
Embankment	CY	11	\$50.00	\$550.00
RipRap Stabilization	SY	34	\$100.00	\$3,400.00
Construct New Channel	LF	1300	\$200.00	\$260,000.00
Additional Cost (first 500LF)	LF	500	\$200.00	\$100,000.00
Clear and Grub (Stream)	AC	0.25	\$10,000.00	\$2,500.00
Initial Project Costs				\$411,745.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$20,587.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$41,174.50
Base Construction Costs				\$473,506.75
<i>Mobilization (5%)</i>				\$23,675.34
Subtotal 1				\$497,182.09
<i>Contingency (25%)</i>				\$124,295.52
Subtotal 2				\$621,477.61
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$279,664.92
Total Costs				\$901,142.53
Estimated Project Costs				\$910,000.00

SU9204 Stream Restoration



Address: 1270 Old Heights Road
Location: Herndon Centennial Park golf course
Land Owner: Local
PIN: 0103-02-0014, 0103-02-0016, 0103-02-0018, 0104-02-0009
Control Type: Quality/Quantity
Drainage Area: 73 acres
Receiving Waters: Folly Lick Branch

Description: The streams in the golf course have been straightened and lack sufficient buffer. Create meander and add structures to channel to slow flow. Install riparian buffer planting as allowed by height restrictions. Stabilize right bank at lower extent of reach.



Project Area Map

Project Benefits: This project will stabilize streambanks, reduce sediment and nutrient loadings, and improve water quality. Riparian buffer restoration will provide for additional evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. A storm drainage easement may be necessary. Accessibility is good from golf course paths, Herndon Parkway, and Crestview Drive. Tree impacts are anticipated. There are no significant construction issues anticipated. Riparian buffer plantings must be designed according to height restrictions.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	1844	\$40.00	\$73,760.00
Plantings	AC	4.57	\$25,000.00	\$114,250.00
Construct New Channel	LF	3335	\$200.00	\$667,000.00
			Initial Project Costs	\$855,010.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$42,750.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$85,501.00
			Base Construction Costs	\$983,261.50
			<i>Mobilization (5%)</i>	\$49,163.08
			Subtotal 1	\$1,032,424.58
			<i>Contingency (25%)</i>	\$258,106.14
			Subtotal 2	\$1,290,530.72
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$580,738.82
			Total Costs	\$1,871,269.54
			Estimated Project Costs	\$1,880,000.00

SU9511 BMP/LID



Address:	661 Dulles Park Court
Location:	Dulles Park Court & Alabama Drive
Land Owner:	Private
PIN:	0161-02-0011B
Control Type	Quality
Drainage Area	8.7 acres
Receiving Waters	Folly Lick Branch

Description: This community does not have existing stormwater controls. Install seven rain gardens around existing storm sewer inlets and within existing swale.



Project Area Map

Project Benefits: An estimated 18 lbs/yr of nitrogen and two lbs/yr of phosphorus will be removed. This project will also reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration and evapotranspiration, and provide for wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Storm drainage easements may be necessary. Accessibility is excellent from Dulles Park Court and adjacent parking lots. No significant tree impacts or construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Bioretention Filters & Basin	SY	395	\$150.00	\$59,250.00
Organic Compost Soil Amendment	CY	33	\$40.00	\$1,320.00
Plantings	AC	0.08	\$25,000.00	\$2,000.00
Initial Project Costs				\$62,570.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,128.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$6,257.00
Base Construction Costs				\$71,955.50
<i>Mobilization (5%)</i>				\$3,597.78
Subtotal 1				\$75,553.28
<i>Contingency (25%)</i>				\$18,888.32
Subtotal 2				\$94,441.59
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$42,498.72
Total Costs				\$136,940.31
Estimated Project Costs				\$140,000.00

5.3.2 Sugarland Run Watershed, Headwaters W MA Fact Sheets

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SU9149 New Stormwater Pond, Stream Restoration, Pond Retrofit



Address: 12652 Thunder Chase Drive
Location: Polo Fields Subdivision
Land Owner: State/County/Private
PIN: 0164-092B-A, 0164-092C-A, 0164-09-A, 0164-09-B, 0164-09-C, 0164-09-D
Control Type: Quality/Quantity
Drainage Area: 118 acres
Receiving Waters: Sugarland Run

Description: Headwaters of Sugarland Run race through a network of concrete channels at high flows. Remove concrete channel and replace with a natural stream channel; include cross vanes for energy dissipation and stormwater controls at each incoming tributary.



Project Area Map

Project Benefits: An estimated one ton/yr of total suspended solids, 81 lbs/yr of nitrogen, and 11 lbs/yr of phosphorus will be removed. This project will also reduce stormwater peak flows, generally reduce sediment and nutrient loadings, improve water quality, promote infiltration, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Storm drainage easements may be necessary. Accessibility is good from Sunrise Valley Drive, Roark Court, Bayard Drive, Darius Lane, Thunder Chase Drive, and an adjacent walking path. Tree impacts are expected. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	133	\$40.00	\$5,320.00
Plantings	AC	0.32	\$25,000.00	\$8,000.00
Clear and Grub	AC	0.37	\$8,500.00	\$3,145.00
Grading and Excavation	CY	2791	\$35.00	\$97,685.00
Access Road	SY	890	\$25.00	\$22,250.00
Access Road Gate	EA	4	\$2,500.00	\$10,000.00
Structural BMP and Incidentals (Low)	LS	7	\$10,000.00	\$70,000.00
New Storm Pipe (Low)	LF	130	\$100.00	\$13,000.00
Embankment	CY	93	\$50.00	\$4,650.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Construct New Channel	LF	2700	\$200.00	\$540,000.00
Additional Cost (first 500LF)	LF	500	\$200.00	\$100,000.00
Initial Project Costs				\$877,650.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$43,882.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$87,765.00
Base Construction Costs				\$1,009,297.50
<i>Mobilization (5%)</i>				\$50,464.88
Subtotal 1				\$1,059,762.38
<i>Contingency (25%)</i>				\$264,940.59
Subtotal 2				\$1,324,702.97
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$596,116.34
Total Costs				\$1,920,819.30
Estimated Project Costs				\$1,930,000.00

SU9150 New Stormwater Pond



Address:	12210 Nutmeg Lane
Location:	Near Nutmeg Lane cul-de-sac
Land Owner:	Private
PIN:	0173-04080099, 0261-10-0010, 0261-10-0011
Control Type	Quality/Quantity
Drainage Area	13 acres
Receiving Waters	Sugarland Run

Description: This area does not have existing stormwater controls. Install new extended detention dry basin behind apartments and school. Capture drainage from outfall and drainage channel.



 New Extended Detention Basin

Project Area Map

Project Benefits: An estimated one ton/yr of total suspended solids, 16 lbs/yr of nitrogen, and three lbs/yr of phosphorus will be removed. This project will also reduce peak stormwater flows for storms up to a 10-year event, provide for evapotranspiration and improve wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. A storm drainage easement may be necessary. Accessibility may be difficult due to the surrounding woodland. Access can be taken from Laurel Glade Court and Nutmeg Lane. Tree impacts are expected. The basin must be deep enough to intercept piped storm sewers.

Costs:

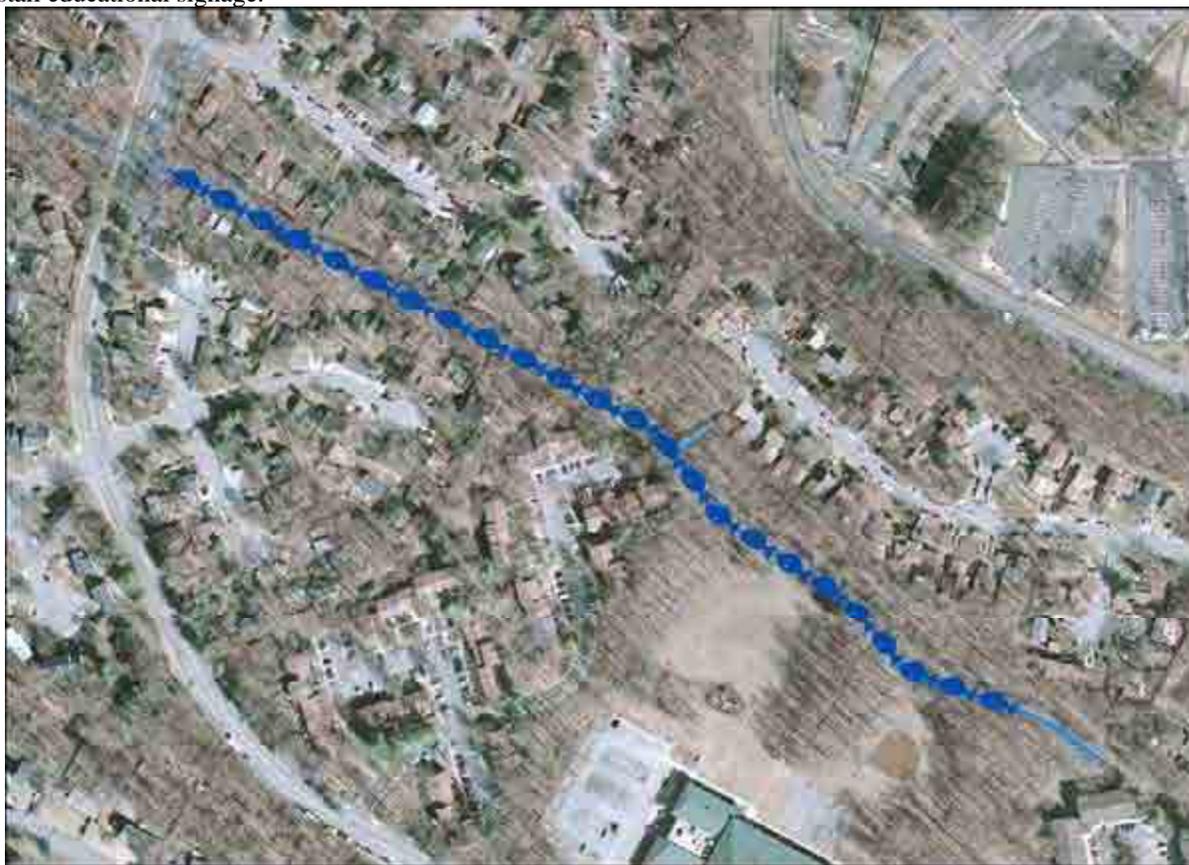
<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	56	\$40.00	\$2,240.00
Plantings	AC	0.28	\$25,000.00	\$7,000.00
Clear and Grub	AC	0.28	\$8,500.00	\$2,380.00
Grading and Excavation	CY	1340	\$35.00	\$46,900.00
Access Road	SY	111	\$25.00	\$2,775.00
Access Road Gate	EA	1	\$2,500.00	\$2,500.00
Embankment	CY	500	\$50.00	\$25,000.00
Structural BMP and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
New Storm Pipe (Med)	LF	30	\$200.00	\$6,000.00
Initial Project Costs				\$109,795.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$5,489.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$10,979.50
Base Construction Costs				\$126,264.25
<i>Mobilization (5%)</i>				\$6,313.21
Subtotal 1				\$132,577.46
<i>Contingency (25%)</i>				\$33,144.37
Subtotal 2				\$165,721.83
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$74,574.82
Total Costs				\$240,296.65
Estimated Project Costs				\$250,000.00

SU9208 Stream Restoration



Address: 12300 Glade Drive
Location: Near Sanibel Drive & Tigers Eye Court culs-de-sac
Land Owner: Private
PIN: 0173-04070010, 0173-04070097, 0173-04080030, 0173-04080099, 0173-04130006A, 0173-04130007A, 0173-04130008, 0173-04130009, 0173-04130044A, 0261-10-0011, 0261-10120099
Control Type Quality
Drainage Area 80 acres
Receiving Waters Sugarland Run

Description: The stream channel is a steep concrete channel with no energy dissipation. Restore naturalized stream channel with step pool features, restore/repair two foot bridges, install energy dissipation to incoming storm drain and install educational signage.



Project Area Map

Project Benefits: This project will stabilize streambanks, reduce sediment and nutrient loadings, improve water quality, reduce stormwater peak flows, promote infiltration, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Accessibility may be difficult due to woodland cover and residential dwellings. Access can be taken from Glade Drive, Sanibel Drive, Nutmeg Lane, and the adjacent walking path. Tree impacts are expected. There are no significant construction issues anticipated. New stormwater pond project SU9150 is directly upstream of this project and should be constructed prior to, and may be coordinated with, stream restoration project SU9208.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Plantings	AC	0.2	\$25,000.00	\$5,000.00
Clear and Grub	AC	0.41	\$8,500.00	\$3,485.00
Grading and Excavation	CY	1500	\$35.00	\$52,500.00
RipRap Stabilization	SY	111	\$100.00	\$11,100.00
Construct New Channel	LF	1800	\$200.00	\$360,000.00
Additional Cost (first 500LF)	LF	500	\$200.00	\$100,000.00
Initial Project Costs				\$532,085.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$26,604.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$53,208.50
Base Construction Costs				\$611,897.75
<i>Mobilization (5%)</i>				\$30,594.89
Subtotal 1				\$642,492.64
<i>Contingency (25%)</i>				\$160,623.16
Subtotal 2				\$803,115.80
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$361,402.11
Total Costs				\$1,164,517.91
Estimated Project Costs				\$1,170,000.00

SU9209 Stream Restoration



Address:	2287 Dosinia Court
Location:	Pinecrest Road & Glade Drive
Land Owner:	State/Private
PIN:	0261-114B-B
Control Type	Quality
Drainage Area	7 acres
Receiving Waters	Sugarland Run

Description: This stream is eroding below the outfall and also creating overland drainage channels due to lack of energy dissipating structures and vegetation. Repair head cuts, install check dams/energy dissipation, vegetate understory and remove invasive plants.



 Stream Restoration

Project Area Map

Project Benefits: This project will stabilize streambanks, reduce sediment and nutrient loadings, and improve overall water quality.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Part of this project is located within a right-of-way. Accessibility may be difficult due to woodland cover and residential dwellings. Access can be taken from Glade Drive and Lofty Heights Place. Tree impacts are expected. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Plantings	AC	0.09	\$25,000.00	\$2,250.00
Clear and Grub	AC	0.09	\$8,500.00	\$765.00
Grading and Excavation	CY	28	\$35.00	\$980.00
RipRap Stabilization	SY	56	\$100.00	\$5,600.00
Construct New Channel	LF	300	\$200.00	\$60,000.00
Additional Cost (first 500LF)	LF	300	\$200.00	\$60,000.00
Initial Project Costs				\$129,595.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$6,479.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$12,959.50
Base Construction Costs				\$149,034.25
<i>Mobilization (5%)</i>				\$7,451.71
Subtotal 1				\$156,485.96
<i>Contingency (25%)</i>				\$39,121.49
Subtotal 2				\$195,607.45
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$88,023.35
Total Costs				\$283,630.81
Estimated Project Costs				\$290,000.00

SU9210 Stream Restoration



Address: 2410 Ivywood Road
Location: Fox Mill Road & Keele Drive
Land Owner: Private
PIN: 0252-04-0078, 0252-04-0079,
 0252-04-0080, 0252-04-0081,
 0252-04-0082, 0252-04-0083,
 0252-04-0084, 0252-04-0086,
 0252-04-0087, 0252-04-B
Control Type Quality
Drainage Area 45 acres
Receiving Waters Sugarland Run

Description: The streambanks in this stream are eroding and the concrete channel provides no energy dissipation. Break up concrete channel and add rock for energy dissipation, re-plant riparian understory and educate homeowners about proper yard waste disposal.



Project Area Map

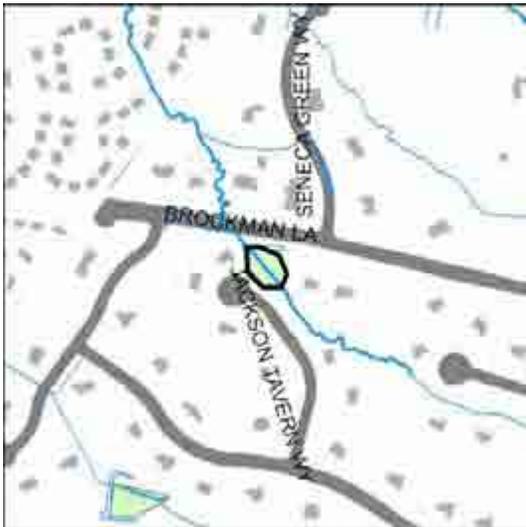
Project Benefits: This project will stabilize streambanks, reduce sediment and nutrient loadings, and improve water quality. Riparian buffer restoration will provide for additional evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Accessibility may be difficult due to woodland cover and residential dwellings. Access can be taken from Fox Mill Road, Ivywood Road, and Rosedown Drive. Tree impacts are expected. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	50	\$40.00	\$2,000.00
Plantings	AC	0.25	\$25,000.00	\$6,250.00
Grading and Excavation	CY	730	\$35.00	\$25,550.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Clear and Grub (Stream)	AC	0.1	\$10,000.00	\$1,000.00
Initial Project Costs				\$35,900.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$1,795.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$3,590.00
Base Construction Costs				\$41,285.00
<i>Mobilization (5%)</i>				\$2,064.25
Subtotal 1				\$43,349.25
<i>Contingency (25%)</i>				\$10,837.31
Subtotal 2				\$54,186.56
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$24,383.95
Total Costs				\$78,570.52
Estimated Project Costs				\$80,000.00

SU9100 Stormwater Pond Retrofit



Address:	501 Jackson Tavern Way
Location:	Jackson Tavern Way cul-de-sac
Land Owner:	County
PIN:	0024-09-0025A
Control Type	Quality/Quantity
Drainage Area	53 acres
Receiving Waters	Sugarland Run

Description: The Great Falls West basin provides only water quantity control. Improve existing dry pond (1445DP) to enhanced extended detention dry basin with marsh areas, including installation of outlet structure and clearing of blocked culvert pipe.



Project Area Map

Project Benefits: An estimated one ton/yr of total suspended solids, 33 lbs/yr of nitrogen, and six lbs/yr of phosphorus will be removed. This project will also generally improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Projects in RPAs may require exemptions or waivers. This is an existing County facility located within a storm drainage easement. Accessibility is excellent from Jackson Tavern Lane. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	109	\$40.00	\$4,360.00
Plantings	AC	0.27	\$25,000.00	\$6,750.00
Clear and Grub	AC	0.17	\$8,500.00	\$1,445.00
Grading and Excavation	CY	1305	\$35.00	\$45,675.00
Embankment	CY	15	\$50.00	\$750.00
Outflow Pipe	LF	30	\$125.00	\$3,750.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
			Initial Project Costs	\$73,830.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,691.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$7,383.00
			Base Construction Costs	\$84,904.50
			<i>Mobilization (5%)</i>	\$4,245.23
			Subtotal 1	\$89,149.73
			<i>Contingency (25%)</i>	\$22,287.43
			Subtotal 2	\$111,437.16
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$50,146.72
			Total Costs	\$161,583.88
			Estimated Project Costs	\$170,000.00

5.3.3 Sugarland Run Watershed, Lower W MA Fact Sheets

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SU9101 Stormwater Pond Retrofit



Address: 11639 Great Falls Way
Location: Near Great Falls Way & Jackson Tavern Way
Land Owner: County
PIN: 0024-09-0032, 0024-09-0033, 0024-09-0038
Control Type: Quality/Quantity
Drainage Area: 50 acres
Receiving Waters: Sugarland Run

Description: The Great Falls West basins provide only water quantity control. Improve existing dry ponds (1447DP and 1446DP) to enhanced extended detention dry basin with marsh areas, remove trickle ditches, install outlet structures and increase spillway elevation.



Project Area Map

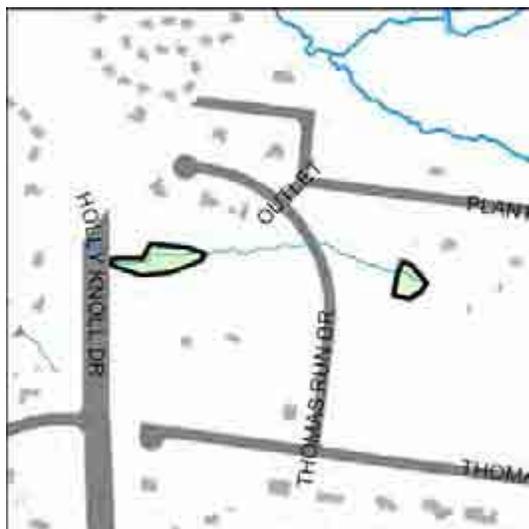
Project Benefits: This project will reduce sediment and nutrient loadings pollutions, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. These basins are existing County facilities located on private parcels. 1446DP is located within a storm drainage easement. A drainage easement may be necessary for 1447DP, which is located near an access easement. Accessibility may be difficult, as they are located on private residential properties. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	269	\$40.00	\$10,760.00
Plantings	AC	0.66	\$25,000.00	\$16,500.00
Clear and Grub	AC	0.43	\$8,500.00	\$3,655.00
Grading and Excavation	CY	3222	\$35.00	\$112,770.00
Embankment	CY	20	\$50.00	\$1,000.00
Outflow Pipe	LF	40	\$125.00	\$5,000.00
RipRap Stabilization	SY	15	\$100.00	\$1,500.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$176,185.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$8,809.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$17,618.50
Base Construction Costs				\$202,612.75
<i>Mobilization (5%)</i>				\$10,130.64
Subtotal 1				\$212,743.39
<i>Contingency (25%)</i>				\$53,185.85
Subtotal 2				\$265,929.23
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$119,668.16
Total Costs				\$385,597.39
Estimated Project Costs				\$390,000.00

SU9103 Stormwater Pond Retrofit



Address:	812 Thomas Run Drive
Location:	Thomas Run Drive
Land Owner:	County/Private
PIN:	0061-01-0012A, 0061-10-A
Control Type	Quality/Quantity
Drainage Area	73 acres
Receiving Waters	Sugarland Run

Description: This area has few stormwater controls. Improve existing dry pond (no StormNet ID) to an enhanced extended detention dry basin with marsh areas, remove trickle ditch and install a micro-pool. Drain existing farm pond to create wetland.



Project Area Map

Project Benefits: An estimated two tons/yr of total suspended solids, 71 lbs/yr of nitrogen, and 14 lbs/yr of phosphorus will be removed. This project will also generally improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. SU9103A is located within a storm drainage easement, restrictive planting easement, and Fairfax water easement, and is adjacent to an access easement. A storm drainage easement may be necessary for SU9103B. Accessibility is excellent via the access easement from Thomas Run Drive and the private driveway from Plantation Drive. No tree impacts or significant construction issues are anticipated.

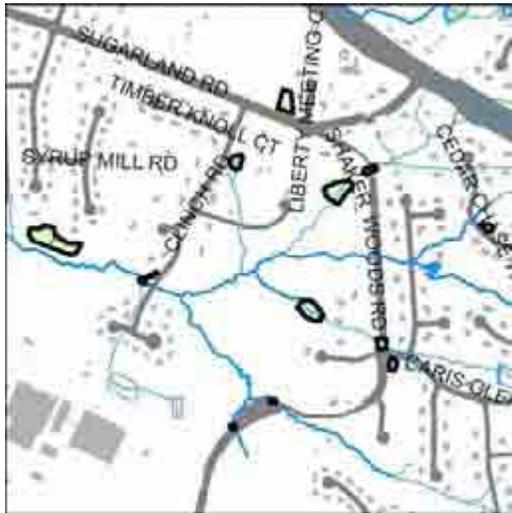
Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	297	\$40.00	\$11,880.00
Plantings	AC	0.74	\$25,000.00	\$18,500.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	1281	\$35.00	\$44,835.00
Embankment	CY	15	\$50.00	\$750.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	8	\$100.00	\$800.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
			Initial Project Costs	\$94,690.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,734.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$9,469.00
			Base Construction Costs	\$108,893.50
			<i>Mobilization (5%)</i>	\$5,444.68
			Subtotal 1	\$114,338.18
			<i>Contingency (25%)</i>	\$28,584.54
			Subtotal 2	\$142,922.72
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$64,315.22
			Total Costs	\$207,237.94
			Estimated Project Costs	\$210,000.00

5.3.4 Sugarland Run Watershed, Lower Middle W MA Fact Sheets

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SU9007 Regional Pond Alternative Suite



Address:
Location: Between Leesburg Pike, Fairfax County Parkway & Wiehle Avenue
Land Owner: State/County/Private
PIN: 0063-18-0001, 0064-01-0072, 0064-01-0073, 0064-14-A, 0111-09-0039, 0111-09-A, 0111-09-B, 0111-12-A, 0112-01-0001, 0112-11-A, 0112-18-D
Control Type: Quality/Quantity
Drainage Area: 281 acres
Receiving Waters: Offuts Branch

Description: Subbasins SU-FF-0002, 0003 and 0004 have minimal stormwater controls. A combination of twelve basin retrofits, wetlands, culvert retrofits and a new basin will provide stormwater controls for nearly two-thirds of the subbasins' 457 acres. Subprojects A and H involve converting an existing non-stormwater pond to a stormwater wetland. A new stormwater wetland will be constructed for SU9007B and three existing dry basins will be retrofitted to extended detention basins for subprojects I, K and L. Larger projects are discussed below.



Project Area Map

Project Benefits: This project will improve water quality in downstream waterbodies by removing an estimated nine tons/yr of total suspended solids, 77 lbs/yr of nitrogen, and 16 lbs/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat. Culvert retrofits will reduce local roadway flooding.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. This project includes multiple existing County facilities. Storm drainage easements may be necessary. Accessibility is ranges from excellent to difficult. Tree impacts are expected. No significant construction issues are anticipated.

Overall Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	190	\$50.00	\$9,500.00
Bioretention Filters & Basin	SY	70	\$150.00	\$10,500.00
Organic Compost Soil Amendment	CY	350	\$40.00	\$14,000.00
Plantings	AC	0.85	\$25,000.00	\$21,250.00
Clear and Grub	AC	0.74	\$8,500.00	\$6,290.00
Grading and Excavation	CY	3020	\$35.00	\$105,700.00
Earthen Berm	CY	10	\$35.00	\$350.00
Access Road	SY	405	\$25.00	\$10,125.00
Access Road Gate	EA	2	\$2,500.00	\$5,000.00
Structural BMP and Incidentals (Low)	LS	6	\$10,000.00	\$60,000.00
New Storm Pipe (Low)	LF	180	\$100.00	\$18,000.00
Embankment	CY	250	\$50.00	\$12,500.00
Outflow Pipe	LF	140	\$125.00	\$17,500.00
RipRap Stabilization	SY	200	\$100.00	\$20,000.00
Structural BMP Retrofit and Incidentals (Low)	LS	2	\$10,000.00	\$20,000.00
			Initial Project Costs	\$330,715.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$16,535.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$33,071.50
			Base Construction Costs	\$380,322.25
			<i>Mobilization (5%)</i>	\$19,016.11
			Subtotal 1	\$399,338.36
			<i>Contingency (25%)</i>	\$99,834.59
			Subtotal 2	\$499,172.95
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$224,627.83
			Total Costs	\$723,800.78
			Estimated Project Costs	\$730,000.00

SU9007C

Description: Install new in-line constructed wetland near nature trail. Replace gravel bed with vegetated swale to direct runoff towards new constructed wetlands. Educate adjacent homeowners regarding best practices and appropriate stormwater management.



Project Area Map

SU9007C Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	80	\$50.00	\$4,000.00
Bioretention Filters & Basin	SY	70	\$150.00	\$10,500.00
Organic Compost Soil Amendment	CY	113	\$40.00	\$4,520.00
Plantings	AC	0.28	\$25,000.00	\$7,000.00
Clear and Grub	AC	0.02	\$8,500.00	\$170.00
Grading and Excavation	CY	1245	\$35.00	\$43,575.00
Access Road	SY	180	\$25.00	\$4,500.00
Access Road Gate	EA	1	\$2,500.00	\$2,500.00
Structural BMP and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
New Storm Pipe (Low)	LF	25	\$100.00	\$2,500.00
Embankment	CY	40	\$50.00	\$2,000.00
Initial Project Costs				\$91,265.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,563.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$9,126.50
Base Construction Costs				\$104,954.75
<i>Mobilization (5%)</i>				\$5,247.74
Subtotal 1				\$110,202.49
<i>Contingency (25%)</i>				\$27,550.62
Subtotal 2				\$137,753.11
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$61,988.90
Total Costs				\$199,742.01
Estimated Project Costs				\$200,000.00

SU9007D

Description: Construct new extended detention dry basin in low area to intercept storm drains.



Project Area Map

SU9007D Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	40	\$40.00	\$1,600.00
Plantings	AC	0.10	\$25,000.00	\$2,500.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	390	\$35.00	\$13,650.00
Access Road	SY	225	\$25.00	\$5,625.00
Access Road Gate	EA	1	\$2,500.00	\$2,500.00
Structural BMP and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
New Storm Pipe (Low)	LF	30	\$100.00	\$3,000.00
Embankment	CY	25	\$50.00	\$1,250.00
Initial Project Costs				\$40,550.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,027.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$4,055.00
Base Construction Costs				\$46,632.50
<i>Mobilization (5%)</i>				\$2,331.63
Subtotal 1				\$48,964.13
<i>Contingency (25%)</i>				\$12,241.03
Subtotal 2				\$61,205.16
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$27,542.32
Total Costs				\$88,747.48
Estimated Project Costs				\$89,000.00

SU9007E

Description: Roadway culvert is undersized and filling with sediment. Remove sediment blocking culvert, replace culvert with adequately sized culvert, and raise road bed as necessary. Construct micropool with wetland vegetation upstream of culvert to settle sediment loads and prevent clogging of culverts.



Project Area Map

SU9007E Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	40	\$40.00	\$1,600.00
Plantings	AC	0.10	\$25,000.00	\$2,500.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	410	\$35.00	\$14,350.00
Access Road	SY	400	\$25.00	\$10,000.00
New Storm Pipe (Low)	LF	40	\$100.00	\$4,000.00
Embankment	CY	110	\$50.00	\$5,500.00
Earthen Berm	CY	5	\$35.00	\$175.00
RipRap Stabilization	SY	65	\$100.00	\$6,500.00
Initial Project Costs				\$45,050.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,252.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$4,505
Base Construction Costs				\$51,807.50
<i>Mobilization (5%)</i>				\$2,590.38
Subtotal 1				\$54,397.88
<i>Contingency (25%)</i>				\$13,599.47
Subtotal 2				\$67,997.34
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$30,598.80
Total Costs				\$98,596.15
Estimated Project Costs				\$99,000.00

SU9007F

Description: Roadway culvert is undersized and has been damaged by debris from large flows. Replace damaged culvert with appropriately sized culvert and raise road bed. Construct a plunge pool and plant with wetland vegetation downstream of culvert.



Project Area Map

SU9007F Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	20	\$40.00	\$800.00
Plantings	AC	0.05	\$25,000.00	\$1,250.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	410	\$35.00	\$14,350.00
Access Road	SY	400	\$25.00	\$10,000.00
New Storm Pipe (Low)	LF	40	\$100.00	\$4,000.00
Embankment	CY	110	\$50.00	\$5,500.00
Earthen Berm	CY	3	\$35.00	\$105.00
RipRap Stabilization	SY	65	\$100.00	\$6,500.00
Initial Project Costs				\$42,930.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,146.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$4,293.00
Base Construction Costs				\$49,369.50
<i>Mobilization (5%)</i>				\$2,468.48
Subtotal 1				\$51,837.98
<i>Contingency (25%)</i>				\$12,959.49
Subtotal 2				\$64,797.47
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$29,158.86
Total Costs				\$93,956.33
Estimated Project Costs				\$94,000.00

SU9007G

Description: Roadway culvert is undersized and filling with sediment. Remove sediment blocking culvert and stabilize eroded stream banks. Replace culvert with adequately sized culvert, and raise road bed as necessary.



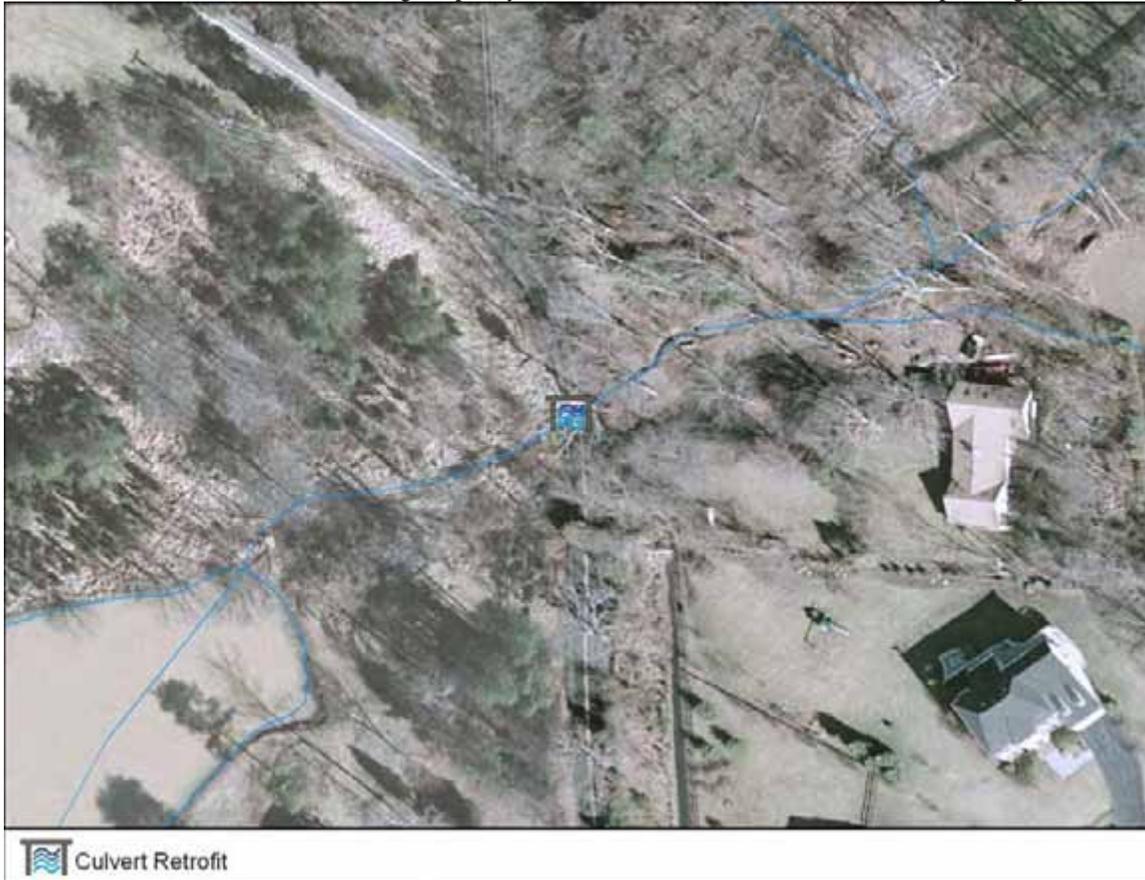
Project Area Map

SU9007G Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	20	\$40.00	\$800.00
Plantings	AC	0.05	\$25,000.00	\$1,250.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	370	\$35.00	\$12,950.00
Access Road	SY	400	\$25.00	\$10,000.00
New Storm Pipe (Low)	LF	40	\$100.00	\$4,000.00
Embankment	CY	110	\$50.00	\$5,500.00
Earthen Berm	CY	3	\$35.00	\$105.00
RipRap Stabilization	SY	65	\$100.00	\$6,500.00
			Initial Project Costs	\$41,530.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,076.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$4,153.00
			Base Construction Costs	\$47,759.50
			<i>Mobilization (5%)</i>	\$2,387.98
			Subtotal 1	\$50,147.48
			<i>Contingency (25%)</i>	\$12,536.87
			Subtotal 2	\$62,684.34
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$28,207.95
			Total Costs	\$90,892.30
			Estimated Project Costs	\$91,000.00

SU9007K

Description: Improve dry pond 0727DP to extended detention dry basin. Raise elevation of embankments and retrofit outlet structure for additional storage capacity. Naturalize basin bottom with wetland plantings.

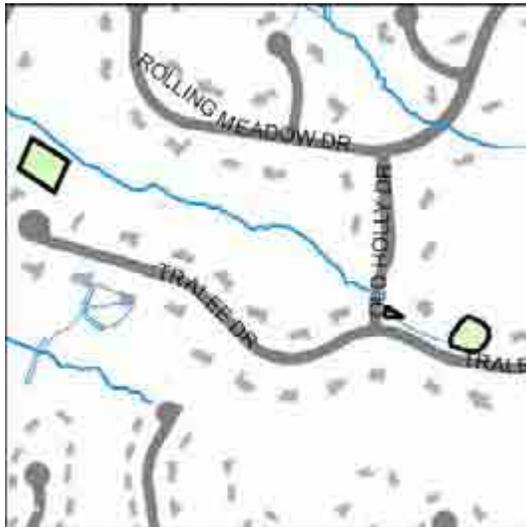


Project Area Map

SU9007K Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	20	\$40.00	\$1,600.00
Plantings	AC	0.10	\$25,000.00	\$2,500.00
Clear and Grub	AC	0.10	\$8,500.00	\$850.00
Grading and Excavation	CY	370	\$35.00	\$12,950.00
Access Road	SY	400	\$25.00	\$10,000.00
New Storm Pipe (Low)	LF	50	\$100.00	\$5,000.00
Embankment	CY	120	\$50.00	\$6,000.00
RipRap Stabilization	SY	75	\$100.00	\$7,500.00
Initial Project Costs				\$46,400.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,320.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$4,640.00
Base Construction Costs				\$53,360.00
<i>Mobilization (5%)</i>				\$2,668.00
Subtotal 1				\$56,028.00
<i>Contingency (25%)</i>				\$14,007.00
Subtotal 2				\$70,035.00
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$31,515.75
Total Costs				\$101,550.75
Estimated Project Costs				\$102,000.00

SU9106 Stormwater Pond Retrofit, BMP/LID



Address: 11558 and 11538 Tralee Drive
Location: Near Tralee Drive & Old Holly Drive
Land Owner: County
PIN: 0064-13-0006, 0064-13020020, 0064-1302-A1, 0064-13-A2
Control Type: Quality/Quantity
Drainage Area: 33
Receiving Waters: Sugarland Run

Description: Improve existing dry ponds (1382DP and 1454DP) to extended detention dry basins by removing trickle ditches, retrofitting outlet structures, and naturalizing. Install a rain garden around an existing inlet.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings to downstream waterbodies, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. The rain garden will reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Projects in RPAs may require exemptions or waivers. These basins are existing County facilities. Storm drainage easements may be necessary. Accessibility is excellent from Tralee Drive. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Bioretention Filters & Basin	SY	222	\$150.00	\$33,300.00
Organic Compost Soil Amendment	CY	237	\$40.00	\$9,480.00
Plantings	AC	0.86	\$25,000.00	\$21,500.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	2622	\$35.00	\$91,770.00
Embankment	CY	20	\$50.00	\$1,000.00
Outflow Pipe	LF	30	\$125.00	\$3,750.00
RipRap Stabilization	SY	15	\$100.00	\$1,500.00
Structural BMP Retrofit and Incidentals (Low)	LS	2	\$10,000.00	\$20,000.00
Initial Project Costs				\$182,725.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$9,136.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$18,272.50
Base Construction Costs				\$210,133.75
<i>Mobilization (5%)</i>				\$10,506.69
Subtotal 1				\$220,640.44
<i>Contingency (25%)</i>				\$55,160.11
Subtotal 2				\$275,800.55
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$124,110.25
Total Costs				\$399,910.79
Estimated Project Costs				\$400,000.00

SU9108 Stormwater Pond Retrofit



Address: 1100 and 1108 Dranesville Road
Location: Dranesville Road & Woodson Drive
Land Owner: County/Private
PIN: 0063-01-0011, 0063-01-0011A
Control Type: Quality/Quantity
Drainage Area: 6 acres
Receiving Waters: Sugarland Run

Description: This area does not have existing stormwater treatment. Improve Bowl America dry pond to extended detention dry basin and Sugarland Hill dry pond (0570DP) to enhanced extended detention dry basin with marsh areas, retrofit outlet structures and add signs.



Project Area Map

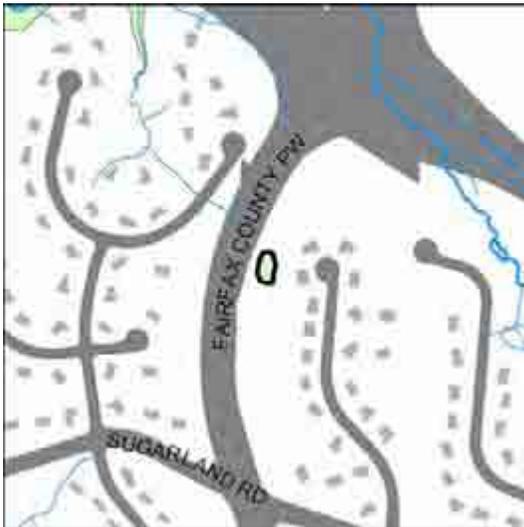
Project Benefits: This project will reduce sediment and nutrient loadings to downstream waterbodies, improve water quality, reduce peak stormwater flows for storms up to a 10- year event, and provide for evapotranspiration and wildlife habitat. By adding educational signs, the general public will be provided with important information on how the basins are protecting water quality in the County.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. SU9108B is an existing County facility, and is partially located on an access easement. Storm drainage easements may be necessary. Accessibility is excellent from Dranesville Road and adjacent parking lots. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	120	\$40.00	\$4,800.00
Plantings	AC	0.45	\$25,000.00	\$11,250.00
Clear and Grub	AC	0.15	\$8,500.00	\$1,275.00
Grading and Excavation	CY	1439	\$35.00	\$50,365.00
Embankment	CY	20	\$50.00	\$1,000.00
Outflow Pipe	LF	40	\$125.00	\$5,000.00
RipRap Stabilization	SY	15	\$100.00	\$1,500.00
Structural BMP Retrofit and Incidentals (Low)	LS	2	\$10,000.00	\$20,000.00
			Initial Project Costs	\$95,190.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,759.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$9,519.00
			Base Construction Costs	\$109,468.50
			<i>Mobilization (5%)</i>	\$5,473.43
			Subtotal 1	\$114,941.93
			<i>Contingency (25%)</i>	\$28,735.48
			Subtotal 2	\$143,677.41
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$64,654.83
			Total Costs	\$208,332.24
			Estimated Project Costs	\$210,000.00

SU9110 Stormwater Pond Retrofit



Address:	1062 Methven Court
Location:	Methven Court cul-de-sac
Land Owner:	County
PIN:	0063-14-A
Control Type	Quality/Quantity
Drainage Area	8 acres
Receiving Waters	Sugarland Run

Description: Enlarge and retrofit Laing at Sugarland existing dry pond (no Storm Net ID) to extended detention dry basin, including removal of concrete trickle ditch and installation of new outlet structure.



Retrofit to ED Basin

Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings to downstream waterbodies, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. Removal of the trickle ditch will slow stormwater runoff velocities, and a new outlet structure will allow for a more controlled rate of discharge from the basin.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. This basin is located within a storm drainage easement. Accessibility is excellent via the storm drainage easement Methven Court. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	40	\$40.00	\$1,600.00
Plantings	AC	0.15	\$25,000.00	\$3,750.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	944	\$35.00	\$33,040.00
Embankment	CY	100	\$50.00	\$5,000.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	8	\$100.00	\$800.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
			Initial Project Costs	\$57,115.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,855.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$5,711.50
			Base Construction Costs	\$65,682.25
			<i>Mobilization (5%)</i>	\$3,284.11
			Subtotal 1	\$68,966.36
			<i>Contingency (25%)</i>	\$17,241.59
			Subtotal 2	\$86,207.95
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$38,793.58
			Total Costs	\$125,001.53
			Estimated Project Costs	\$130,000.00

5.3.5 Sugarland Run Watershed, Upper W MA Fact Sheets

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SU9139 Stormwater Pond Retrofit



Address: 1748 Stuart Pointe Lane
Location: Towns at Stuart Pointe
Subdivision, Stuart Pointe Lane
Land Owner: County
PIN: 0171-24-A
Control Type: Quality/Quantity
Drainage Area: 3 acres
Receiving Waters: Sugarland Run

Description: Improve Towns at Stuart Pointe dry pond (1456 DP) to enhanced extended detention with marsh areas. Remove concrete trickle ditch and install an outlet structure.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings pollutions, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. This basin is an existing County facility, and is located within a storm drainage easement. Accessibility is excellent from Stuart Pointe Lane. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	31	\$40.00	\$1,240.00
Plantings	AC	0.08	\$25,000.00	\$2,000.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	367	\$35.00	\$12,845.00
Embankment	CY	11	\$50.00	\$550.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	8	\$100.00	\$800.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Initial Project Costs				\$30,360.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$1,518.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$3,036.00
Base Construction Costs				\$34,914.00
<i>Mobilization (5%)</i>				\$1,745.70
Subtotal 1				\$36,659.70
<i>Contingency (25%)</i>				\$9,164.93
Subtotal 2				\$45,824.63
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$20,621.08
Total Costs				\$66,445.71
Estimated Project Costs				\$70,000.00

SU9141 Stormwater Pond Retrofit



Address: 525 Grove Street
Location: Substation near Grove Street & Grant Street
Land Owner: Private
PIN: 0162-02-0190E
Control Type: Quality/Quantity
Drainage Area: 13 acres
Receiving Waters: Sugarland Run

Description: This area does not have existing stormwater treatment. Improve dry pond (no StormNet ID) to extended detention basin. Raise and retrofit outlet structure and naturalize with native plantings.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loading pollutions, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. A storm drainage easement may be necessary. Accessibility is excellent from the parking lot off of Grove Street and the adjacent access easement. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	14	\$40.00	\$560.00
Plantings	AC	0.05	\$25,000.00	\$1,250.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	167	\$35.00	\$5,845.00
Embankment	CY	200	\$50.00	\$10,000.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	8	\$100.00	\$800.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Initial Project Costs				\$31,380.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$1,569.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$3,138.00
Base Construction Costs				\$36,087.00
<i>Mobilization (5%)</i>				\$1,804.35
Subtotal 1				\$37,891.35
<i>Contingency (25%)</i>				\$9,472.84
Subtotal 2				\$47,364.19
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$21,313.88
Total Costs				\$68,678.07
Estimated Project Costs				\$70,000.00

SU9143 Stormwater Pond Retrofit



Address: 347 Elden Street
Location: Near Grove Street & Herndon Parkway
Land Owner: Private
PIN: 0171-02-0027, 0171-02-0028, 0171-02-0029
Control Type: Quality/Quantity
Drainage Area: 3 acres
Receiving Waters: Sugarland Run

Description: This area does not have existing stormwater treatment. Improve two existing dry ponds (no StormNet IDs) to enhanced extended detention dry basins. Regrade basins and Install new outlet structures.



Project Area Map

Project Benefits: This project will generally improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Storm drainage easements may be necessary. Accessibility is excellent from Grove Street and nearby parking lots. No tree impacts or significant construction issues are anticipated. These basins are landscaped with herbaceous vegetation.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	63	\$40.00	\$2,520.00
Plantings	AC	0.23	\$25,000.00	\$5,750.00
Clear and Grub	AC	0.1	\$8,500.00	\$850.00
Grading and Excavation	CY	756	\$35.00	\$26,460.00
Embankment	CY	20	\$50.00	\$1,000.00
Outflow Pipe	LF	40	\$125.00	\$5,000.00
RipRap Stabilization	SY	15	\$100.00	\$1,500.00
Structural BMP Retrofit and Incidentals (Low)	LS	2	\$10,000.00	\$20,000.00
Initial Project Costs				\$63,080.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,154.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$6,308.00
Base Construction Costs				\$72,542.00
<i>Mobilization (5%)</i>				\$3,627.10
Subtotal 1				\$76,169.10
<i>Contingency (25%)</i>				\$19,042.28
Subtotal 2				\$95,211.38
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$42,845.12
Total Costs				\$138,056.49
Estimated Project Costs				\$140,000.00

SU9146 Stormwater Pond Retrofit, New Stormwater Pond



Address: 550 Van Buren Street & 491 Spring Street
Location: Next to St. Timothy's Episcopal Church, Spring Street
Land Owner: County/Private
PIN: 0162-02-0156A, 0162-36-A
Control Type Quality/Quantity
Drainage Area 35.2 acres
Receiving Waters Sugarland Run

Description: The residential and institutional area along Van Buren Street has inadequate existing stormwater control. Construct new extended detention dry pond and improve the existing dry pond by removing concrete trickle ditch and planting wetland vegetation.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. SU9146A is located within a storm drainage easement and landscape easement. It is adjacent to a private water easement. A storm drainage easement may be necessary for SU0146B. Accessibility is excellent from Spring Street and nearby parking lots. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	97	\$40.00	\$3,880.00
Plantings	AC	0.24	\$25,000.00	\$6,000.00
Clear and Grub	AC	0.14	\$8,500.00	\$1,190.00
Grading and Excavation	CY	692	\$35.00	\$24,220.00
Access Road	SY	111	\$25.00	\$2,775.00
Access Road Gate	EA	1	\$2,500.00	\$2,500.00
Structural BMP and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
New Storm Pipe (Low)	LF	30	\$100.00	\$3,000.00
Embankment	CY	15	\$50.00	\$750.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Initial Project Costs				\$55,415.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,770.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$5,541.50
Base Construction Costs				\$63,727.25
<i>Mobilization (5%)</i>				\$3,186.36
Subtotal 1				\$66,913.61
<i>Contingency (25%)</i>				\$16,728.40
Subtotal 2				\$83,642.02
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$37,638.91
Total Costs				\$121,280.92
Estimated Project Costs				\$130,000.00

SU9147 Stormwater Pond Retrofit



Address:	2003 Edmund Halley Drive
Location:	Near Edmund Halley Drive & Sunrise Valley Drive
Land Owner:	County
PIN:	0173-08-0002A
Control Type	Quality/Quantity
Drainage Area	11 acres
Receiving Waters	Sugarland Run

Description: This property does not have existing stormwater treatment. Improve dry pond (DP0372) to enhanced extended detention basin with marsh areas, daylight inlet pipes, remove concrete trickle ditch and install new outlet structure.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. This basin is an existing County facility. A storm drainage easement may be necessary. Accessibility is excellent from adjacent parking areas off of Edmund Halley Drive. No tree impacts are expected. The basin must be deep enough to daylight piped storm sewers.

Costs:

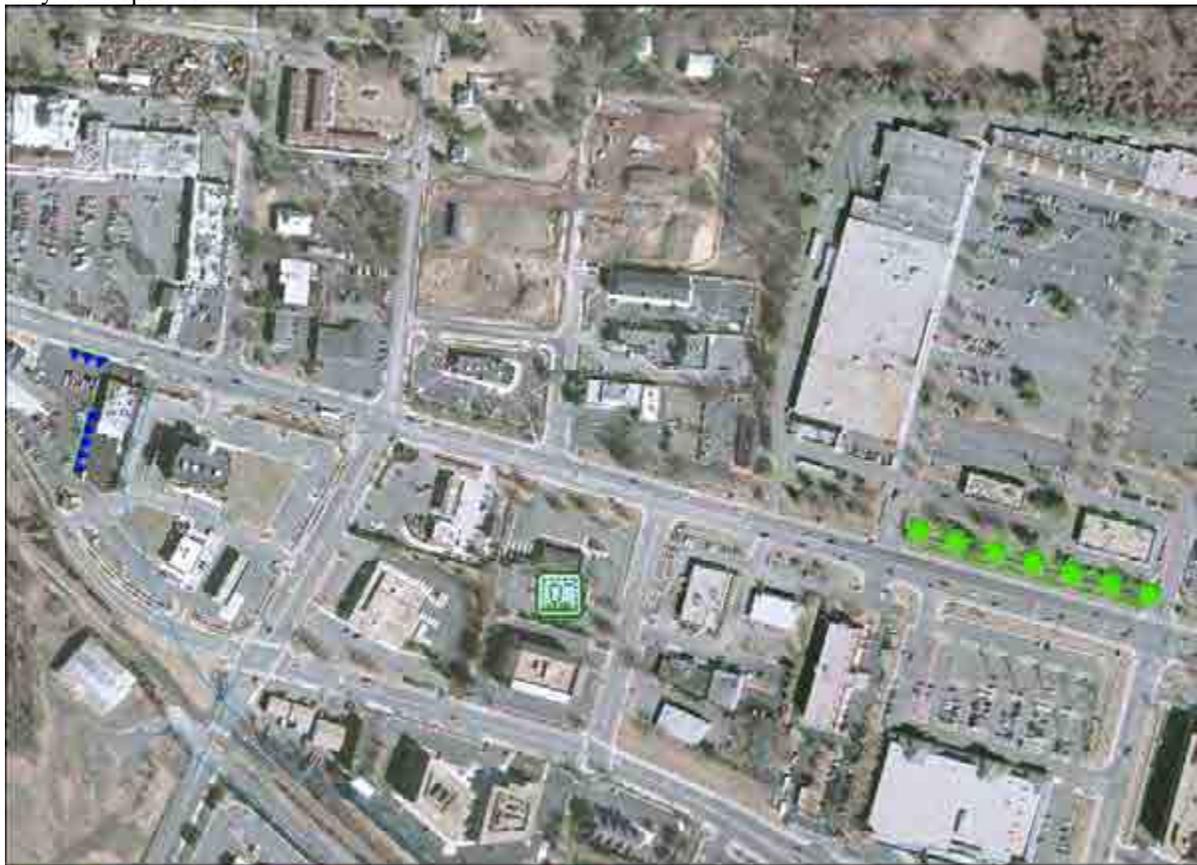
<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	100	\$40.00	\$4,000.00
Plantings	AC	0.25	\$25,000.00	\$6,250.00
Grading and Excavation	CY	796	\$35.00	\$27,860.00
Embankment	CY	200	\$50.00	\$10,000.00
Outflow Pipe	LF	30	\$125.00	\$3,750.00
RipRap Stabilization	SY	8	\$100.00	\$800.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Initial Project Costs				\$62,660.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,133.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$6,266.00
Base Construction Costs				\$72,059.00
<i>Mobilization (5%)</i>				\$3,602.95
Subtotal 1				\$75,661.95
<i>Contingency (25%)</i>				\$18,915.49
Subtotal 2				\$94,577.44
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$42,559.85
Total Costs				\$137,137.28
Estimated Project Costs				\$140,000.00

SU9505 BMP/LID



Address: 448-464, 501, and 681 Elden Street
Location: Near Elden Street & Van Buren Street
Land Owner: Private
PIN: 0162-02-0198, 0162-02-0203A, 0162-24-B, 0162-24-G
Control Type: Quality/Quantity
Drainage Area: 1 acres
Receiving Waters: Sugarland Run

Description: The commercial areas along Elden Street have no stormwater management controls and high impervious coverage and pollutant runoff. Install rain gardens, infiltration trenches and vegetated swales within the already developed commercial area.



www Infiltration Trench Vegetated Swale Rain Garden

Project Area Map

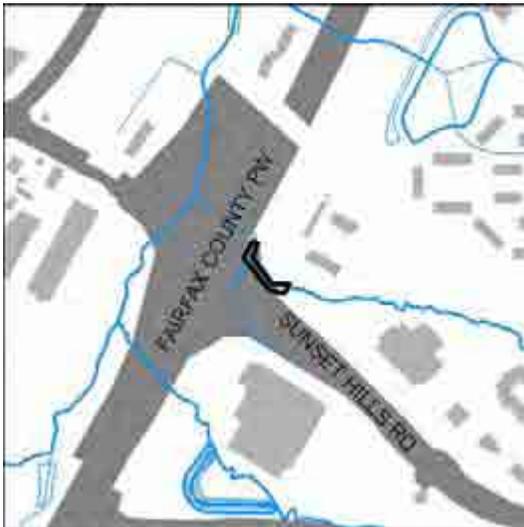
Project Benefits: An estimated two tons/yr of total suspended solids, 51 lbs/yr of nitrogen, and eight lbs/yr of phosphorus will be removed. This project will also generally reduce sediment and nutrient loadings, improve water quality, reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration and evapotranspiration, and provide for wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. A storm drainage easement may be necessary. Accessibility is excellent from Elden Street and adjacent parking lots. No significant tree impacts or construction issues are anticipated. Stormwater pond retrofit project SU9141 is located nearby to the south. Coordination and sequencing of these two projects should be considered.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	750	\$50.00	\$37,500.00
Percolation/Infiltration Trench	SY	139	\$75.00	\$10,425.00
Bioretention Filters & Basin	SY	700	\$150.00	\$105,000.00
Organic Compost Soil Amendment	CY	164	\$40.00	\$6,560.00
Plantings	AC	0.41	\$25,000.00	\$10,250.00
Grading and Excavation	CY	20	\$35.00	\$700.00
Initial Project Costs				\$170,435.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$8,521.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$17,043.50
Base Construction Costs				\$196,000.25
<i>Mobilization (5%)</i>				\$9,800.01
Subtotal 1				\$205,800.26
<i>Contingency (25%)</i>				\$51,450.07
Subtotal 2				\$257,250.33
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$115,762.65
Total Costs				\$373,012.98
Estimated Project Costs				\$380,000.00

SU9514 New Stormwater Pond



Address:	12250 Sunset Hills Road
Location:	Sunset Hills Road & Fairfax County Parkway
Land Owner:	State/County
PIN:	0173-01-0002A
Control Type	Quality
Drainage Area	94 acres
Receiving Waters	Sugarland Run

Description: Some of this area has stormwater treatment, but provides only water quantity control. Remove trapezoidal ditch and replace with natural stream channel with cross-vanes to dissipate energy. Construct new pocket wetland at upstream end of channel.



Project Area Map

Project Benefits: An estimated seven tons/yr of total suspended solids, 111 lbs/yr of nitrogen, and 22 lbs/yr of phosphorus will be removed. This project will also reduce stormwater peak flows, reduce sediment and nutrient loadings, improve water quality, and provide for evaporation, evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. WP0318 is an existing County facility. Part of this project is located within a right-of-way, Fairfax water easement, and Colonial gas easement. A storm drainage easement may be necessary. Accessibility is excellent from Sunset Hills Road, an access easement, and adjacent parking lots. No significant tree impacts or construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	23	\$40.00	\$920.00
Plantings	AC	0.17	\$25,000.00	\$4,250.00
Clear and Grub	AC	0.14	\$8,500.00	\$1,190.00
Grading and Excavation	CY	111	\$35.00	\$3,885.00
Construct New Channel	LF	300	\$200.00	\$60,000.00
Additional Cost (first 500LF)	LF	300	\$200.00	\$60,000.00
Initial Project Costs				\$130,245.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$6,512.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$13,024.50
Base Construction Costs				\$149,781.75
<i>Mobilization (5%)</i>				\$7,489.09
Subtotal 1				\$157,270.84
<i>Contingency (25%)</i>				\$39,317.71
Subtotal 2				\$196,588.55
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$88,464.85
Total Costs				\$285,053.39
Estimated Project Costs				\$290,000.00

5.3.6 Sugarland Run Watershed, Upper Middle W MA Fact Sheets

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SU9002 Regional Pond Alternative Suite



Address: 11583 Southington Lane (central)
Location: Near Wheile Avenue, between Pellow Circle Terrace & Reston Avenue
Land Owner: County/Private
PIN: 0112-05-0136, 0112-05-D, 0112-05-O, 0112-06-C
Control Type: Quality/Quantity
Drainage Area: 62.8 acres
Receiving Waters: Rosiers Branch

Description: Improve existing dry pond (0337DP) to an enhanced extended detention dry basin with marsh area (SU9002C). Install new enhanced extended detention dry pond (SU9002A). Install new rain garden with educational signage (SU9002B). Repair eroded streambanks and culvert and install micro-pool (SU9002D). Larger projects are discussed below.



Project Area Map

Project Benefits: An estimated two tons/yr of total suspended solids, 51 lbs/yr of nitrogen, and 10 lbs/yr of phosphorus will be removed. This project will also generally improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. In addition, the rain garden will reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration and evapotranspiration, and provide for wildlife habitat. The project will furthermore stabilize streambanks and provide educational opportunities for the community.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. Parts of this project are located in storm drainage easements or Colonial gas easements. Additional storm drainage easements may be necessary. Accessibility is excellent from Wiehle Avenue or Deer Forest Road. Tree impacts are expected. No significant construction issues are anticipated.

Overall Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	1167	\$50.00	\$58,350.00
Bioretention Filters & Basin	SY	109	\$150.00	\$16,350.00
Organic Compost Soil Amendment	CY	439	\$40.00	\$17,560.00
Plantings	AC	0.93	\$25,000.00	\$23,250.00
Clear and Grub	AC	0.55	\$8,500.00	\$4,675.00
Grading and Excavation	CY	5071	\$35.00	\$177,485.00
Earthen Berm	CY	300	\$35.00	\$10,500.00
Access Road	SY	225	\$25.00	\$5,625.00
Access Road Gate	EA	1	\$2,500.00	\$2,500.00
Structural BMP and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
New Storm Pipe (Low)	LF	65	\$100.00	\$6,500.00
Embankment	CY	400	\$50.00	\$20,000.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	20	\$100.00	\$2,000.00
Construct New Channel	LF	50	\$200.00	\$10,000.00
Additional Cost (first 500LF)	LF	50	\$200.00	\$10,000.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$392,295.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$19,614.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$39,229.50
Base Construction Costs				\$451,139.25
<i>Mobilization (5%)</i>				\$22,556.96
Subtotal 1				\$473,696.21
<i>Contingency (25%)</i>				\$118,424.05
Subtotal 2				\$592,120.27
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$266,454.12
Total Costs				\$858,574.39
Estimated Project Costs				\$860,000.00

SU9002A

Description: Construct a new enhanced extended detention dry pond in low area adjacent to gas easement to intercept storm drains from Caris Glenne subdivision.



Project Area Map

SU9002A Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	81	\$40.00	\$3,240.00
Plantings	AC	0.30	\$25,000.00	\$7,500.00
Clear and Grub	AC	0.27	\$8,500.00	\$2,295.00
Grading and Excavation	CY	1950	\$35.00	\$68,250.00
Access Road	SY	225	\$25.00	\$5,625.00
Access Road Gate	EA	1	\$2,500.00	\$2,500.00
Structural BMP and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
New Storm Pipe (Low)	LF	65	\$100.00	\$6,500.00
Embankment	CY	200	\$50.00	\$10,000.00
Initial Project Costs				\$115,910.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$5,795.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$11,591.00
Base Construction Costs				\$133,296.50
<i>Mobilization (5%)</i>				\$6,664.83
Subtotal 1				\$139,961.33
<i>Contingency (25%)</i>				\$34,990.33
Subtotal 2				\$174,951.66
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$78,728.25
Total Costs				\$253,679.90
Estimated Project Costs				\$254,000.00

SU9002C

Description: Improve existing dry pond (0337DP) to an enhanced extended detention dry basin with marsh area. Remove concrete channels leading to basin, install vegetated swales with check dams and improve outfalls with rip rap aprons.



Project Area Map

SU9002C Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	1167	\$50.00	\$58,350.00
Organic Compost Soil Amendment	CY	340	\$40.00	\$13,600.00
Plantings	AC	0.57	\$25,000.00	\$14,250.00
Clear and Grub	AC	0.24	\$8,500.00	\$2,040.00
Grading and Excavation	CY	2921	\$35.00	\$102,235.00
Embankment	CY	200	\$50.00	\$10,000.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	20	\$100.00	\$2,000.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
			Initial Project Costs	\$219,975.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$10,998.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$21,997.50
			Base Construction Costs	\$252,971.25
			<i>Mobilization (5%)</i>	\$12,648.56
			Subtotal 1	\$265,619.81
			<i>Contingency (25%)</i>	\$66,404.95
			Subtotal 2	\$332,024.77
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>			<i>Relocation and Permits (45%)</i>	\$149,411.14
			Total Costs	\$481,435.91
			Estimated Project Costs	\$482,000.00

SU9002D

Description: Repair and stabilize eroded stream banks and culvert under walking path. Construct micropool upstream of culvert and include educational signage.



Project Area Map

SU9002D Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	9	\$40.00	\$360.00
Plantings	AC	0.04	\$25,000.00	\$1,000.00
Clear and Grub	AC	0.04	\$8,500.00	\$340.00
Grading and Excavation	CY	200	\$35.00	\$7,000.00
Earthen Berm	CY	300	\$35.00	\$10,500.00
Construct New Channel	LF	50	\$200.00	\$10,000.00
Additional Cost (first 500LF)	LF	50	\$200.00	\$10,000.00
Initial Project Costs				\$39,200.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$1,960.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$3,920.00
Base Construction Costs				\$45,080.00
<i>Mobilization (5%)</i>				\$2,254.00
Subtotal 1				\$47,334.00
<i>Contingency (25%)</i>				\$11,833.50
Subtotal 2				\$59,167.50
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$26,625.38
Total Costs				\$85,792.88
Estimated Project Costs				\$86,000.00

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SU9120 Stormwater Pond Retrofit



Address: 12147 Eddyspark Drive and 1416 Kingsvale Circle
Location: Near Eddyspark Drive & Kingsvale Circle
Land Owner: County/Private
PIN: 0111-04-J, 0111-04-P
Control Type: Quality/Quantity
Drainage Area: 57 acres
Receiving Waters: Sugarland Run

Description: Existing dry ponds(0434DP and 0845DP) provide only water quantity control. Improve them to enhanced extended detention dry basins with marsh areas, remove the trickle ditches, and install outlet structures.



Project Area Map

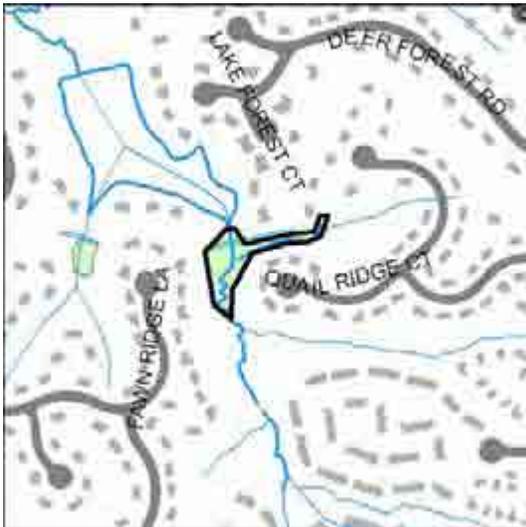
Project Benefits: This project will improve water quality in downstream waterbodies by removing an estimated 12 tons/yr of total suspended solids, 69 lbs/yr of nitrogen, and 16 lbs/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat. Removal of the trickle ditches will reduce stormwater velocities and new outlet structures will help to control the rate of stormwater discharge.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. These basins are existing County facilities located within storm drainage easements. The 0434DP storm drainage easement may have to be enlarged. Accessibility is excellent from Eddyspark Drive and Kingsvale Circle. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	890	\$50.00	\$44,500.00
Organic Compost Soil Amendment	CY	281	\$40.00	\$11,240.00
Plantings	AC	0.69	\$25,000.00	\$17,250.00
Clear and Grub	AC	0.1	\$8,500.00	\$850.00
Grading and Excavation	CY	2770	\$35.00	\$96,950.00
Embankment	CY	19	\$50.00	\$950.00
Outflow Pipe	LF	70	\$125.00	\$8,750.00
RipRap Stabilization	SY	19	\$100.00	\$1,900.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$207,390.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$10,369.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$20,739.00
Base Construction Costs				\$238,498.50
<i>Mobilization (5%)</i>				\$11,924.93
Subtotal 1				\$250,423.43
<i>Contingency (25%)</i>				\$62,605.86
Subtotal 2				\$313,029.28
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$140,863.18
Total Costs				\$453,892.46
Estimated Project Costs				\$460,000.00

SU9129 Stormwater Pond Retrofit



Address: 11600 Quail Ridge Court
Location: Near Quail Ridge Court cul-de-sac
Land Owner: County/Private
PIN: 0113-01-0003, 0114-07-A
Control Type: Quality
Drainage Area: 117 acres
Receiving Waters: Rosiers Branch

Description: Some of this area has no existing stormwater treatment. Improve dry pond (0336DP) by installing micro-pool with wetland vegetation above outlet structure. Vegetate with floodplain vegetation and remove concrete channel upstream.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings pollutions, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. This basin is an existing County facility. A small part of this project is located on a storm drainage easement, which may have to be enlarged. Accessibility is good from an adjacent Colonial Gas easement from Quail Ridge Court. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	440	\$50.00	\$22,000.00
Organic Compost Soil Amendment	CY	282	\$40.00	\$11,280.00
Plantings	AC	1.05	\$25,000.00	\$26,250.00
Clear and Grub	AC	0.1	\$8,500.00	\$850.00
Grading and Excavation	CY	163	\$35.00	\$5,705.00
Structural BMP and Incidentals (High)	LS	1	\$20,000.00	\$20,000.00
Initial Project Costs				\$86,085.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,304.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$8,608.50
Base Construction Costs				\$98,997.75
<i>Mobilization (5%)</i>				\$4,949.89
Subtotal 1				\$103,947.64
<i>Contingency (25%)</i>				\$25,986.91
Subtotal 2				\$129,934.55
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$58,470.55
Total Costs				\$188,405.09
Estimated Project Costs				\$190,000.00

SU9130 New Stormwater Pond



Address:	702 Jenny Ann Court
Location:	Near Jenny Ann Court cul-de-sac
Land Owner:	Private
PIN:	0104-02-0057E, 0104-17-0044, 0104-17-0045, 0104-17-0046, 0104-17-0047, 0104-17-0048, 0104-17-0049, 0104-17-0050
Control Type	Quality/Quantity
Drainage Area	80 acres
Receiving Waters	Sugarland Run

Description: This area does not have existing stormwater controls. Install new extended detention dry basin and install vegetated swale behind homes to direct runoff to new facility.



Project Area Map

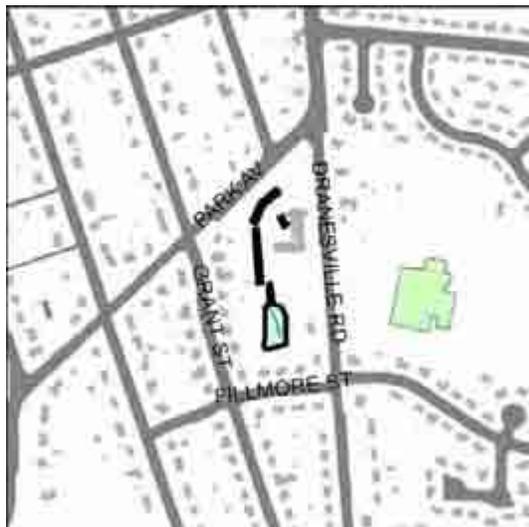
Project Benefits: An estimated six tons/yr of total suspended solids, 124 lbs/yr of nitrogen, and 23 lbs/yr of phosphorus will be removed. This project will also generally improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. The vegetated swale will promote additional infiltration, evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Storm drainage easements may be necessary. Accessibility may be difficult due to treeline along Herndon Parkway and surrounding residential dwellings. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	300	\$50.00	\$15,000.00
Organic Compost Soil Amendment	CY	28	\$40.00	\$1,120.00
Plantings	AC	0.07	\$25,000.00	\$1,750.00
Clear and Grub	AC	0.13	\$8,500.00	\$1,105.00
Grading and Excavation	CY	622	\$35.00	\$21,770.00
Access Road	SY	222	\$25.00	\$5,550.00
Access Road Gate	EA	1	\$2,500.00	\$2,500.00
Embankment	CY	8	\$50.00	\$400.00
Structural BMP and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
New Storm Pipe (Med)	LF	20	\$200.00	\$4,000.00
Initial Project Costs				\$68,195.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,409.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$6,819.50
Base Construction Costs				\$78,424.25
<i>Mobilization (5%)</i>				\$3,921.21
Subtotal 1				\$82,345.46
<i>Contingency (25%)</i>				\$20,586.37
Subtotal 2				\$102,931.83
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$46,319.32
Total Costs				\$149,251.15
Estimated Project Costs				\$150,000.00

SU9135 Stormwater Pond Retrofit, BMP/LID



Address:	651 Dranesville Road
Location:	Trinity Presbyterian Church
Land Owner:	County/Private
PIN:	0104-07-A2
Control Type	Quality/Quantity
Drainage Area	10.2 acres
Receiving Waters	Sugarland Run

Description: Existing dry pond (no StormNet ID) has no stormwater treatment. Improve basin to enhanced extended detention dry basin with marsh areas. Remove concrete trickle ditch, retrofit outlet structure, and install rain garden and infiltration trenches.



Project Area Map

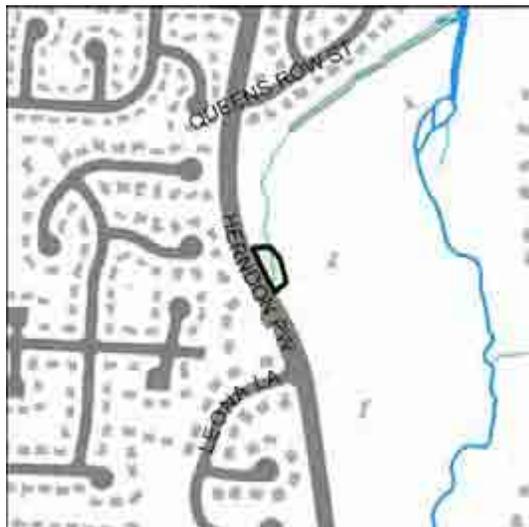
Project Benefits: An estimated one ton/yr of total suspended solids, 25 lbs/yr of nitrogen, and five lbs/yr of phosphorus will be removed. This project will also generally improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. Additionally, the rain garden and infiltration trenches will reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration and evapotranspiration, and provide for wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. A storm drainage easement may be necessary. Accessibility is excellent from Trinity Presbyterian Church parking lot. No tree impacts or significant construction issues are anticipated.

Costs:

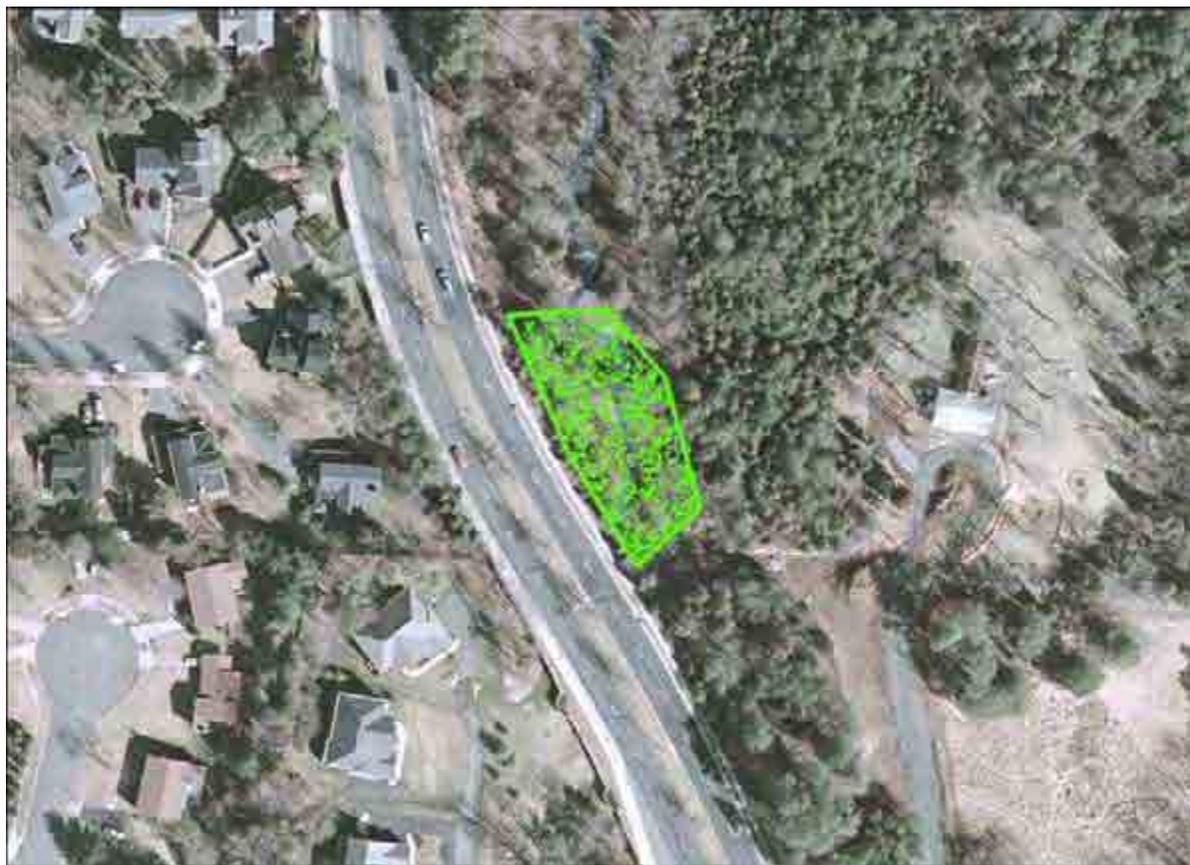
<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	178	\$50.00	\$8,900.00
Percolation/Infiltration Trench	SY	939	\$75.00	\$70,425.00
Bioretention Filters & Basin	SY	84	\$150.00	\$12,600.00
Organic Compost Soil Amendment	CY	169	\$40.00	\$6,760.00
Plantings	AC	0.42	\$25,000.00	\$10,500.00
Grading and Excavation	CY	556	\$35.00	\$19,460.00
Embankment	CY	10	\$50.00	\$500.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	8	\$100.00	\$800.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Initial Project Costs				\$142,445.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$7,122.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$14,244.50
Base Construction Costs				\$163,811.75
<i>Mobilization (5%)</i>				\$8,190.59
Subtotal 1				\$172,002.34
<i>Contingency (25%)</i>				\$43,000.58
Subtotal 2				\$215,002.92
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$96,751.31
Total Costs				\$311,754.24
Estimated Project Costs				\$320,000.00

SU9136 New Stormwater Pond



Address:	215 Herndon Parkway
Location:	Runnymede Park
Land Owner:	State/Local
PIN:	0113-02-0004C
Control Type	Quality/Quantity
Drainage Area	161 acres
Receiving Waters	Sugarland Run

Description: Runnymede Park has no existing stormwater controls. Install a new extended detention dry basin by Herndon Parkway.



 New Extended Detention Basin

Project Area Map

Project Benefits: An estimated three tons/yr of total suspended solids, 51 lbs/yr of nitrogen, and nine lbs/yr of phosphorus will be removed. This project will also generally improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. A storm drainage easement may be necessary. Accessibility is excellent from Herndon Parkway. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	105	\$40.00	\$4,200.00
Plantings	AC	0.13	\$25,000.00	\$3,250.00
Clear and Grub	AC	0.26	\$8,500.00	\$2,210.00
Grading and Excavation	CY	1250	\$35.00	\$43,750.00
Access Road	SY	333	\$25.00	\$8,325.00
Access Road Gate	EA	1	\$2,500.00	\$2,500.00
Embankment	CY	22	\$50.00	\$1,100.00
Structural BMP and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
New Storm Pipe (Med)	LF	30	\$200.00	\$6,000.00
Initial Project Costs				\$86,335.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,316.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$8,633.50
Base Construction Costs				\$99,285.25
<i>Mobilization (5%)</i>				\$4,964.26
Subtotal 1				\$104,249.51
<i>Contingency (25%)</i>				\$26,062.38
Subtotal 2				\$130,311.89
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$58,640.35
Total Costs				\$188,952.24
Estimated Project Costs				\$190,000.00

SU9144 New Stormwater Pond, BMP/LID



Address: (nearest) 1778 Fountain Drive
Location: Bowman Towne Drive & Fountain Drive
Land Owner: County/Private
PIN: 0171-01-0014B, 0171-01-0014D, 0171-01-0014E, 0171-01-0014F
Control Type: Quality/Quantity
Drainage Area: 31 acres
Receiving Waters: Sugarland Run

Description: Some of this area does not have existing stormwater treatment. Install three new extended detention dry basins. Daylight stormwater runoff from storm sewers into basin. Install rain garden around existing depressed inlet.



Project Area Map

Project Benefits: An estimated 23 tons/yr of total suspended solids, 480 lbs/yr of nitrogen, and 106 lbs/yr of phosphorus will be removed. This project will also generally improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. The rain garden will promote additional infiltration, evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Storm drainage easements may be necessary. Accessibility is excellent from Town Center Parkway, Fountain Drive, and parking lots off of Bowman Towne Drive. Tree impacts are expected. The basins must be deep enough to intercept piped storm sewers.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	110	\$40.00	\$4,400.00
Plantings	AC	0.21	\$25,000.00	\$5,250.00
Clear and Grub	AC	0.15	\$8,500.00	\$1,275.00
Grading and Excavation	CY	867	\$35.00	\$30,345.00
Access Road	SY	220	\$25.00	\$5,500.00
Access Road Gate	EA	1	\$2,500.00	\$2,500.00
Structural BMP and Incidentals (Low)	LS	3	\$10,000.00	\$30,000.00
New Storm Pipe (Low)	LF	60	\$100.00	\$6,000.00
Embankment	CY	22	\$50.00	\$1,100.00
RipRap Stabilization	SY	30	\$100.00	\$3,000.00
Initial Project Costs				\$89,370.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,468.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$8,937.00
Base Construction Costs				\$102,775.50
<i>Mobilization (5%)</i>				\$5,138.78
Subtotal 1				\$107,914.28
<i>Contingency (25%)</i>				\$26,978.57
Subtotal 2				\$134,892.84
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$60,701.78
Total Costs				\$195,594.62
Estimated Project Costs				\$200,000.00

SU9203 Stream Restoration



Address:	417 Queens Row Street
Location:	Hunters Creek HOA & Runnymede Park
Land Owner:	Local/Private
PIN:	0113-02-0004C, 0113-04-C
Control Type	Quality/Quantity
Drainage Area	224 acres
Receiving Waters	Sugarland Run

Description: Remove concrete channel and use concrete and rock as toe protection. Install a v-notch weir upstream of the culvert to help develop a floodplain. Remove multiflora rose obstruction, repair stream banks and restore riparian buffer.



 Stream Restoration

Project Area Map

Project Benefits: This project will stabilize streambanks, reduce sediment and nutrient loadings, and improve water quality.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. A storm drainage easement may be necessary. Accessibility is good from the Hunters Creek HOA parking lot and the walking trail. Tree impacts are expected. There are no significant construction issues anticipated.

Costs:

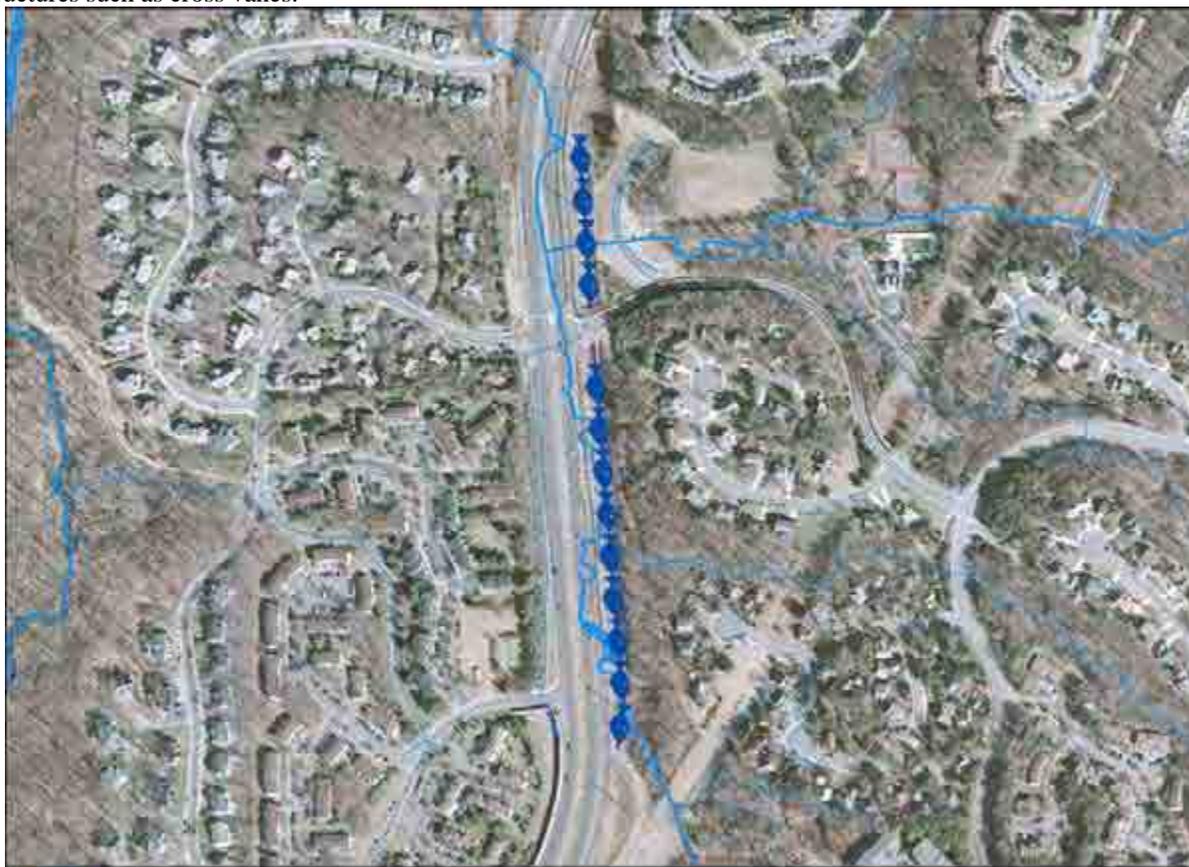
<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Percolation/Infiltration Trench	SY	333	\$75.00	\$24,975.00
Plantings	AC	0.07	\$25,000.00	\$1,750.00
Clear and Grub	AC	0.02	\$8,500.00	\$170.00
Grading and Excavation	CY	52	\$35.00	\$1,820.00
Earthen Berm	CY	11	\$35.00	\$385.00
Construct New Channel	LF	600	\$200.00	\$120,000.00
Additional Cost (first 500LF)	LF	500	\$200.00	\$100,000.00
Initial Project Costs				\$249,100.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$12,455.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$24,910.00
Base Construction Costs				\$286,465.00
<i>Mobilization (5%)</i>				\$14,323.25
Subtotal 1				\$300,788.25
<i>Contingency (25%)</i>				\$75,197.06
Subtotal 2				\$375,985.31
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$169,193.39
Total Costs				\$545,178.70
Estimated Project Costs				\$550,000.00

SU9205 Stream Restoration



Address:	11950 Walnut Branch Road
Location:	Fairfax County Parkway & Walnut Branch Road
Land Owner:	State/Private
PIN:	0113-08-0007
Control Type	Quality/Quantity
Drainage Area	520 acres
Receiving Waters	Sugarland Run

Description: A straightened stream channel increases the velocity of stormwater flows. Install step pools to account for increased slope of straightened stream, improve habitat with native riparian vegetation and add in-stream structures such as cross vanes.



 Stream Restoration

Project Area Map

Project Benefits: This project will stabilize streambanks, reduce sediment and nutrient loadings, and improve water quality. Riparian buffer restoration will provide for additional evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. The project is located within a Dominion electric easement and adjacent to a storm drainage easement, which may need to be enlarged. Accessibility is excellent from Fairfax County Parkway and Walnut Branch Road. No tree impacts are expected. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	556	\$40.00	\$22,240.00
Plantings	AC	2.76	\$25,000.00	\$69,000.00
Construct New Channel	LF	890	\$200.00	\$178,000.00
Additional Cost (first 500LF)	LF	500	\$200.00	\$100,000.00
			Initial Project Costs	\$369,240.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$18,462.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$36,924.00
			Base Construction Costs	\$424,626.00
			<i>Mobilization (5%)</i>	\$21,231.30
			Subtotal 1	\$445,857.30
			<i>Contingency (25%)</i>	\$111,464.33
			Subtotal 2	\$557,321.63
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$250,794.73
			Total Costs	\$808,116.36
			Estimated Project Costs	\$810,000.00

SU9500 BMP/LID



Address:	700 Bennett Street
Location:	Herndon High School
Land Owner:	County
PIN:	0102-01-0006A
Control Type	Quality
Drainage Area	2 acres
Receiving Waters	Sugarland Run

Description: Herndon High School does not have existing stormwater controls. Install green roof on portion of roof if possible, install rain gardens in interior courtyards and direct roof leaders to them, and implement education programs.



Project Area Map

Project Benefits: An estimated 10 tons/yr of total suspended solids, 40 lbs/yr of nitrogen, and 11 lbs/yr of phosphorus will be removed. The green roof will reduce stormwater peak flows, insulate the building, increase the life of the roof, and provide for evapotranspiration and wildlife habitat. The rain gardens will reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration and evapotranspiration, and provide for wildlife habitat. This project will also provide additional educational opportunities for the community.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Accessibility is excellent from Bennett Street and adjacent parking lots. No significant tree impacts or construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Bioretention Filters & Basin	SY	578	\$150.00	\$86,700.00
Organic Compost Soil Amendment	CY	48	\$40.00	\$1,920.00
Plantings	AC	0.12	\$25,000.00	\$3,000.00
Vegetated Roof (No Struct. Mod.)	SY	1300	\$225.00	\$292,500.00
			Initial Project Costs	\$384,120.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$19,206.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$38,412.00
			Base Construction Costs	\$441,738.00
			<i>Mobilization (5%)</i>	\$22,086.90
			Subtotal 1	\$463,824.90
			<i>Contingency (25%)</i>	\$115,956.23
			Subtotal 2	\$579,781.13
			<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>	\$260,901.51
			Total Costs	\$840,682.63
			Estimated Project Costs	\$850,000.00

SU9502 BMP/LID



Address:	630 Dranesville Road
Location:	Herndon Elementary School
Land Owner:	County
PIN:	0104-02-0066A
Control Type	Quality/Quantity
Drainage Area	2 acres
Receiving Waters	Sugarland Run

Description: Herndon Elementary School does not have existing stormwater controls. Install green roof and initiate educational program.



Project Area Map

Project Benefits: This project will reduce stormwater peak flows, insulate the building, increase the life of the roof, and provide for evapotranspiration and wildlife habitat. This project will also provide additional educational opportunities for the community.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Accessibility is excellent from Dranesville Road and adjacent parking lots. No significant tree impacts or construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Roof (Struct Mod. Req)	SY	560	\$450.00	\$252,000.00
Initial Project Costs				\$252,000.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$12,600.00
<i>Ancillary Items: 5% of project cost</i>				\$12,600.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$25,200.00
Base Construction Costs				\$302,400.00
<i>Mobilization (5%)</i>				\$15,120.00
Subtotal 1				\$317,520.00
<i>Contingency (25%)</i>				\$79,380.00
Subtotal 2				\$396,900.00
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$178,605.00
Total Costs				\$575,505.00
Estimated Project Costs				\$580,000.00

SU9504 New Stormwater Pond, BMP/LID



Address:	1635 Reston Parkway
Location:	Reston North Park
Land Owner:	County
PIN:	0171-09-0002
Control Type	Quality/Quantity
Drainage Area	9 acres
Receiving Waters	Sugarland Run

Description: The Reston North Park does not have existing stormwater controls. Install new infiltration basin in upper baseball field, daylight storm sewers to basin, vegetate and naturalize existing swales, and install educational signage.



Project Area Map

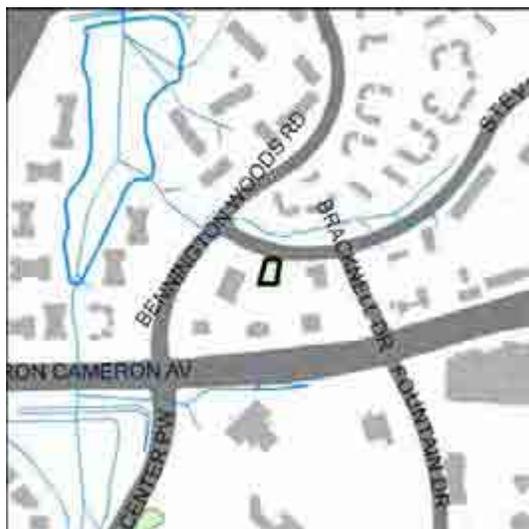
Project Benefits: An estimated nine lbs/yr of nitrogen will be removed. This project will also generally reduce sediment and nutrient loadings, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, promote infiltration, and provide for evapotranspiration and wildlife habitat. This project will also provide educational opportunities for the community.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Accessibility is excellent from Stevenage Road and nearby parking lots. No tree impacts are expected. The basin must be deep enough to intercept piped storm sewers.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	87	\$40.00	\$3,480.00
Plantings	AC	0.21	\$25,000.00	\$5,250.00
Grading and Excavation	CY	585	\$35.00	\$20,475.00
Structural BMP and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Outflow Pipe	LF	125	\$125.00	\$15,625.00
RipRap Stabilization	SY	8	\$100.00	\$800.00
Initial Project Costs				\$55,630.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,781.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$5,563.00
Base Construction Costs				\$63,974.50
<i>Mobilization (5%)</i>				\$3,198.73
Subtotal 1				\$67,173.23
<i>Contingency (25%)</i>				\$16,793.31
Subtotal 2				\$83,966.53
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$37,784.94
Total Costs				\$121,751.47
Estimated Project Costs				\$130,000.00

SU9509 BMP/LID



Address:	11958 Killingsworth Avenue
Location:	Trader Joe's
Land Owner:	County/Private
PIN:	0171-07-0004C5
Control Type	Quality
Drainage Area	4 acres
Receiving Waters	Sugarland Run

Description: Install a new rain garden in the central island of the Trader Joe's parking lot and investigate headcuts in the adjacent stream.



Project Area Map

Project Benefits: this project will reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration and evapotranspiration, and provide for wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Part of the project is located within a storm drainage easement, which may need to be enlarged. Accessibility is excellent from Stevenage Road and adjacent parking lots. Tree impacts are expected. The rain garden must be deep enough to intercept piped storm sewers.

Costs:

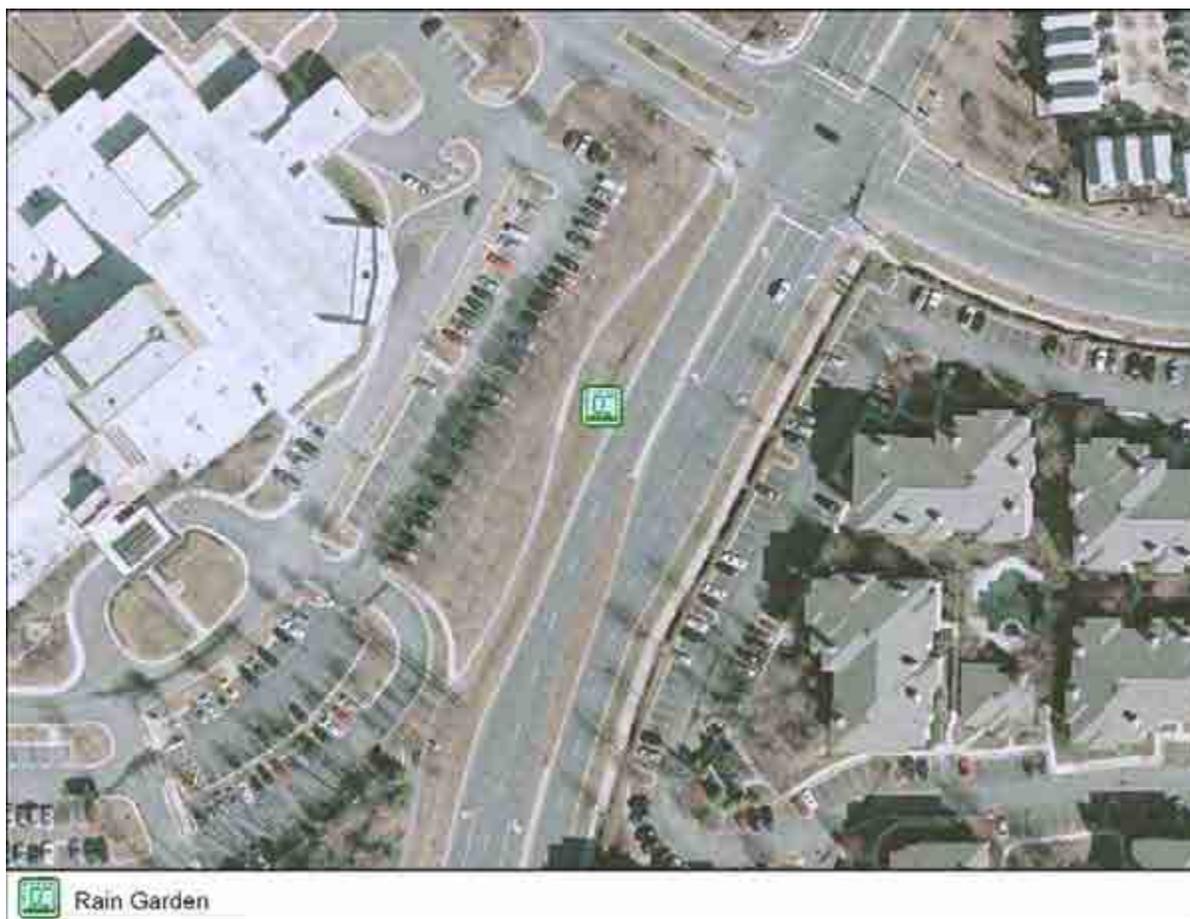
<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Bioretention Filters & Basin	SY	806	\$150.00	\$120,900.00
Organic Compost Soil Amendment	CY	67	\$40.00	\$2,680.00
Plantings	AC	0.17	\$25,000.00	\$4,250.00
Clear and Grub	AC	0.02	\$8,500.00	\$170.00
Construct New Channel	LF	50	\$200.00	\$10,000.00
Additional Cost (first 500LF)	LF	50	\$200.00	\$10,000.00
Initial Project Costs				\$148,000.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$7,400.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$14,800.00
Base Construction Costs				\$170,200.00
<i>Mobilization (5%)</i>				\$8,510.00
Subtotal 1				\$178,710.00
<i>Contingency (25%)</i>				\$44,677.50
Subtotal 2				\$223,387.50
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$100,524.38
Total Costs				\$323,911.88
Estimated Project Costs				\$330,000.00

SU9512 BMP/LID



Address:	1850 Town Center Drive
Location:	Reston Hospital
Land Owner:	Private
PIN:	0171-01-0015B
Control Type	Quality
Drainage Area	4 acres
Receiving Waters	Sugarland Run

Description: The majority of Reston Hospital does not have existing stormwater controls. Install bioretention area along walking path with vegetated swales to direct parking lot drainage into bioretention. Install educational signage.



Project Area Map

Project Benefits: An estimated 23 tons/yr of total suspended solids, 480 lbs/yr of nitrogen, and 106 lbs/yr of phosphorus will be removed. This project will also reduce stormwater peak flows for small storm events, generally reduce sediment and nutrient loadings, improve water quality, reduce stormwater runoff volumes by promoting infiltration and evapotranspiration, and provide for wildlife habitat. This project will also provide educational opportunities for the community.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Part of this project is located within a Dominion electric easement. A storm drainage easement may be necessary. Accessibility is excellent from Town Center Parkway and nearby parking lots. No significant tree impacts or construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	375	\$50.00	\$18,750.00
Bioretention Filters & Basin	SY	436	\$150.00	\$65,400.00
Organic Compost Soil Amendment	CY	68	\$40.00	\$2,720.00
Plantings	AC	0.17	\$25,000.00	\$4,250.00
Initial Project Costs				\$91,120.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,556.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$9,112.00
Base Construction Costs				\$104,788.00
<i>Mobilization (5%)</i>				\$5,239.40
Subtotal 1				\$110,027.40
<i>Contingency (25%)</i>				\$27,506.85
Subtotal 2				\$137,534.25
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$61,890.41
Total Costs				\$199,424.66
Estimated Project Costs				\$200,000.00

5.3.7 Horsepen Creek Watershed, Cedar Run W MA Fact Sheets

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HC9007 Regional Pond Alternative Suite



Address: (nearest) 2969 Mother Well Court
Location: Between Ladybank Lane & Mother Well Court
Land Owner: County/Private
PIN: 0253-04-L, 0253-04-P, 0253-04-Q, 0351-02-E, 0351-02-K
Control Type: Quality/Quantity
Drainage Area: 68 acres
Receiving Waters: Cedar Run

Description: HC-CR-0002 does not have any existing stormwater controls. Construct a new in-line enhanced extended detention basin (modified scope of RP H-07) and various energy dissipation and stream and habitat restoration projects throughout the subwatershed. Remove concrete channel (HC9007B) and improve drainage channels (HC9007B and HC9007C) with energy dissipation, minor regrading and buffer restoration. Construct rain garden (HC9907F) to intercept overland drainage along the gas easement. Larger projects are discussed below.



Project Area Map

Project Benefits: This project will improve water quality in downstream waterbodies by removing an estimated nine tons/yr of total suspended solids, 238 lbs/yr of nitrogen, and 33 lbs/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat. Streambank stabilization projects will help to reduce erosion and will improve both terrestrial and aquatic habitats. Rain gardens will reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. Part of the project is located on an AT&T easement. A storm drainage easement may be necessary. Accessibility is good from Ladybank Lane, though not always close by. Tree impacts are expected. There are no significant construction issues anticipated.

Overall Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Bioretention Filters & Basin	SY	81	\$150.00	\$12,150.00
Organic Compost Soil Amendment	CY	473	\$40.00	\$18,920.00
Plantings	AC	3.1	\$25,000.00	\$77,500.00
Clear and Grub	AC	0.17	\$8,500.00	\$1,445.00
Grading and Excavation	CY	1726	\$35.00	\$60,410.00
Embankment	CY	25	\$50.00	\$1,250.00
RipRap Stabilization	SY	258	\$100.00	\$25,800.00
Construct New Channel	LF	390	\$200.00	\$78,000.00
Additional Cost (first 500LF)	LF	390	\$200.00	\$78,000.00
Structural BMP and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
New Storm Pipe (Med)	LF	30	\$200.00	\$6,000.00
Initial Project Costs				\$374,475.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$18,723.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$37,447.50
Base Construction Costs				\$430,646.25
<i>Mobilization (5%)</i>				\$21,532.31
Subtotal 1				\$452,178.56
<i>Contingency (25%)</i>				\$113,044.64
Subtotal 2				\$565,223.20
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$254,350.44
Total Costs				\$819,573.64
Estimated Project Costs				\$820,000.00

HC9007A

Description: A debris jam is located in the stream corridor with 4-5 foot eroded stream banks. The debris jam should be removed and eroded banks stabilized with boulder toes and sturdy vegetation.



Project Area Map

HC9007A Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Construct New Channel	LF	300	\$200.00	\$60,000.00
Additional Cost	LF	300	\$200.00	\$60,000.00
Initial Project Costs				\$120,000.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$6,000.00
<i>Ancillary Items: 5% of project cost</i>				\$6,000.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$12,000.00
Base Construction Costs				\$144,000.00
<i>Mobilization (5%)</i>				\$7,200.00
Subtotal 1				\$151,200.00
<i>Contingency (25%)</i>				\$37,800.00
Subtotal 2				\$189,000.00
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$85,050.00
Total Costs				\$274,050.00
Estimated Project Costs				\$275,000.00

HC9007D

Description: Energy dissipation is needed below outfall where erosive flows are damaging the stream channel. Place riprap and rock below the outfall to dissipate the erosive flows, remove nuisance species and re-vegetate all damaged and eroded areas with quality riparian vegetation.



Project Area Map

HC9007D Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	400	\$40.00	\$16,000.00
Plantings	AC	2.77	\$25,000.00	\$69,250.00
RipRap Stabilization	SY	22	\$100.00	\$22,000.00
Initial Project Costs				\$87,450.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,372.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$8,745.00
Base Construction Costs				\$100,567.50
<i>Mobilization (5%)</i>				\$5,028.38
Subtotal 1				\$105,595.88
<i>Contingency (25%)</i>				\$26,398.97
Subtotal 2				\$131,994.84
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$59,397.68
Total Costs				\$191,392.52
Estimated Project Costs				\$192,000.00

HC9007E

Description: Construct new in-line enhanced extended detention dry basin at proposed location of Regional Pond H-07 to address lack of stormwater management in subwatershed. Incorporate natural meandering stream channel and forebay with gabion weir in design of new basin.



Project Area Map

HC9007E Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	66	\$40.00	\$2,640.00
Plantings	AC	0.33	\$25,000.00	\$8,250.00
Clear and Grub	AC	0.17	\$8,500.00	\$1,445.00
Grading and Excavation	CY	1511	\$35.00	\$52,885.00
Embankment	CY	25	\$50.00	\$1,250.00
Structural BMP and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
New Storm Pipe (Med)	LF	30	\$200.00	\$6,000.00
Initial Project Costs				\$87,470.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,373.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$8,747.00
Base Construction Costs				\$100,590.50
<i>Mobilization (5%)</i>				\$5,029.53
Subtotal 1				\$105,620.03
<i>Contingency (25%)</i>				\$26,405.01
Subtotal 2				\$132,025.03
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$59,411.26
Total Costs				\$191,436.30
Estimated Project Costs				\$192,000.00

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HC9013 Regional Pond Alternative Suite



Address:
Location: Between Franklin Farm Road, West Ox Road & Ashburton Avenue
Land Owner: County/Private
PIN: 0351-0411-D, 0352-05-B, 0352-0807-A, 0352-0811-B, 0352-0813-A, 0352-08-A, 0352-08-I, 0352-08-O1, 0352-14-A1, 0352-17-B, 0352-17-C
Control Type: Quality/Quantity
Drainage Area: 291 acres
Receiving Waters: Cedar Run

Description: Subbasins HC-CR-0004 and 0005 have minimal stormwater controls. A combination of eighteen basin retrofits, wetlands, BMPs and outfall improvements will provide stormwater controls for more than two-thirds of the subbasins' 421 acres. Subprojects B and M include expanding existing natural wetlands. Suprojects I and N involve constructing new stormwater wetlands and SU9013J is the retrofit of an existing dry pond to an extended detention basin. The concrete swale at SU9013Q will be replaced with a vegetated swale and improved riparian buffer. These projects will provide improved stormwater controls, water quality and habitat. Larger projects are described below.



Project Area Map

Project Benefits: Through a combination of basin retrofits, wetlands, new BMPs and drainage improvements, this project will reduce sediment and nutrient loadings, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, reduce stormwater runoff volumes, stabilize waterways, promote infiltration, and provide for evapotranspiration and wildlife habitat. The size of this project will also provide an educational opportunity for the community.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. Parts of the project are located in Transco gas and storm drainage easements. Additional storm drainage easements may be necessary. Accessibility is generally good, though some areas are surrounded by residential properties. Tree impacts are expected. There are no significant construction issues anticipated.

Overall Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	150	\$50.00	\$7,500.00
Bioretention Filters & Basin	SY	440	\$150.00	\$66,000.00
Organic Compost Soil Amendment	CY	1045	\$40.00	\$41,800.00
Plantings	AC	3.39	\$25,000.00	\$84,750.00
Clear and Grub	AC	2.19	\$8,500.00	\$18,615.00
Grading and Excavation	CY	10973	\$35.00	\$384,055.00
Embankment	CY	35	\$50.00	\$1,750.00
Outflow Pipe	LF	90	\$125.00	\$11,250.00
RipRap Stabilization	SY	64	\$100.00	\$6,400.00
Construct New Channel	LF	1045	\$200.00	\$209,000.00
Additional Cost (first 500LF)	LF	500	\$200.00	\$100,000.00
Structural BMP Retrofit and Incidentals (Low)	LS	3	\$10,000.00	\$30,000.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$976,120.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$48,806.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$97,612.00
Base Construction Costs				\$1,122,538.00
<i>Mobilization (5%)</i>				\$56,126.90
Subtotal 1				\$1,178,664.90
<i>Contingency (25%)</i>				\$294,666.23
Subtotal 2				\$1,473,331.13
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$662,999.01
Total Costs				\$2,136,330.13
Estimated Project Costs				\$2,140,000.00

HC9013A

Description: Install new rain garden around existing inlet



Project Area Map

HC9013A Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Bioretention Filters & Basin	SY	440	\$150.00	\$66,000.00
Organic Compost Soil Amendment	CY	35	\$40.00	\$1,400.00
Initial Project Costs				\$67,400
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$3,370.00
<i>Ancillary Items: 5% of project cost</i>				\$3,370.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$6,740.00
Base Construction Costs				\$80,880.00
<i>Mobilization (5%)</i>				\$4,044.00
Subtotal 1				\$84,924.00
<i>Contingency (25%)</i>				\$21,231.00
Subtotal 2				\$106,155.00
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$47,769.75
Total Costs				\$153,924.75
Estimated Project Costs				\$154,000.00

HC9007C, HC9007E, HC9007O

Description: Remove concrete channels and restore natural stream channels. Create shallow marsh areas and new natural wetlands between channels and plant with wetland plantings.



Project Area Map

HC9013C, HC9013E, HC9013O Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	191	\$40.00	\$7,640.00.00
Plantings	AC	0.62	\$25,000.00	\$15,500.00
Grading and Excavation	CY	340	\$35.00	\$11,900.00
Earthen Berm	CY	24	\$35.00	\$840.00
RipRap Stabilization	SY	50	\$100.00	\$5,000.00
			Initial Project Costs	\$40,880
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,044.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$4,088.00
			Base Construction Costs	\$47,012.00
			<i>Mobilization (5%)</i>	\$2,350.60
			Subtotal 1	\$49,362.60
			<i>Contingency (25%)</i>	\$12,340.65
			Subtotal 2	\$61,703.25
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$27,766.46
			Total Costs	\$89,469.71
			Estimated Project Costs	\$90,000.00

HC9013D & HC9013P

Description: Add rock to drainage channels for energy dissipation of erosive flows.



Project Area Map

HC9013D & HC9013P Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Construct New Channel	LF	460	\$200.00	\$92,000.00
Additional Cost (first 500LF)	LF	50	\$200.00	\$10,000.00
Initial Project Costs				\$102,000.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$5,100.00
<i>Ancillary Items: 5% of project cost</i>				\$5,100.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$10,200.00
Base Construction Costs				\$122,400.00
<i>Mobilization (5%)</i>				\$6,120.00
Subtotal 1				\$128,520.00
<i>Contingency (25%)</i>				\$32,130.00
Subtotal 2				\$160,650.00
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$72,292.50
Total Costs				\$232,942.50
Estimated Project Costs				\$233,000.00

HC9013F

Description: Retrofit dry pond 0116DP to extended detention dry pond, install new outlet structure and allow basin to naturalize.



Project Area Map

HC9013F Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	70	\$40.00	\$2,800.00
Plantings	AC	0.18	\$25,000.00	\$4,500.00
Clear and Grub	AC	0.18	\$8,500.00	\$1,530.00
Grading and Excavation	CY	850	\$35.00	\$29,750.00
Embankment	CY	10	\$50.00	\$500.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	15	\$100.00	\$1,500.00
Structural BMP Retrofit (Low)	LS	1	\$10,000.00	\$10,000.00
			Initial Project Costs	\$53,080.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,654.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$5,308.00
			Base Construction Costs	\$61,042.00
			<i>Mobilization (5%)</i>	\$3,052.10
			Subtotal 1	\$64,094.10
			<i>Contingency (25%)</i>	\$16,023.53
			Subtotal 2	\$80,117.63
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$36,052.93
			Total Costs	\$116,170.56
			Estimated Project Costs	\$117,000.00

HC9013G

Description: Retrofit an existing non-stormwater wet pond to a stormwater wet pond. Draw down water level, install appropriate outlet structure and plant emergent vegetation



Project Area Map

HC9013G Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	160	\$40.00	\$6,400.00
Plantings	AC	0.49	\$25,000.00	\$12,250.00
Clear and Grub	AC	0.97	\$8,500.00	\$8,245.00
Grading and Excavation	CY	4700	\$35.00	\$164,500.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
Structural BMP Retrofit (Low)	LS	1	\$10,000.00	\$10,000.00
			Initial Project Costs	\$203,895.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$10,194.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$20,389.50
			Base Construction Costs	\$234,479.25
			<i>Mobilization (5%)</i>	\$11,723.96
			Subtotal 1	\$246,203.21
			<i>Contingency (25%)</i>	\$61,550.80
			Subtotal 2	\$307,754.02
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$138,489.31
			Total Costs	\$446,243.32
			Estimated Project Costs	\$447,000.00

HC9013H & HC9013R

Description: Construct two new constructed wetlands and restore riparian buffers. Add rocks to channel for energy dissipation.



Project Area Map

HC9013H & HC9013R Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	25	\$40.00	\$1,000.00
Plantings	AC	0.12	\$25,000.00	\$3,000.00
Construct New Channel	LF	145	\$200.00	\$29,000.00
Additional Cost (first 500LF)	LF	100	\$200.00	\$20,000.00
			Initial Project Costs	\$53,000.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,650.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$5,300.00
			Base Construction Costs	\$60,950.00
			<i>Mobilization (5%)</i>	\$3,047.50
			Subtotal 1	\$63,997.50
			<i>Contingency (25%)</i>	\$15,999.38
			Subtotal 2	\$79,996.88
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$35,998.59
			Total Costs	\$115,995.47
			Estimated Project Costs	\$116,000.00

HC9013K

Description: Retrofit existing non-stormwater wet pond to a stormwater wet pond. Draw down water level, install appropriate outlet structure and plant emergent vegetation along shorelines.



Project Area Map

HC9013K Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	360	\$40.00	\$14,400.00
Plantings	AC	0.99	\$25,000.00	\$24,750.00
Clear and Grub	AC	0.99	\$8,500.00	\$8,415.00
Grading and Excavation	CY	4768	\$35.00	\$166,880.00
Embankment	CY	15	\$50.00	\$750.00
Outflow Pipe	LF	30	\$125.00	\$3,750.00
RipRap Stabilization	SY	15	\$100.00	\$1,500.00
Structural BMP Retrofit (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$235,445
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$11,772.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$23,544.50
Base Construction Costs				\$270,761.75
<i>Mobilization (5%)</i>				\$13,538.09
Subtotal 1				\$284,299.84
<i>Contingency (25%)</i>				\$71,074.96
Subtotal 2				\$355,374.80
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$159,918.66
Total Costs				\$515,293.46
Estimated Project Costs				\$516,000.00

HC9013L

Description: Install a new constructed wetland at pipe outfall; add rocks to channel and vegetation to banks.



Project Area Map

HC9013L Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	10	\$40.00	\$400.00
Plantings	AC	0.05	\$25,000.00	\$1,250.00
Construct New Channel	LF	125	\$200.00	\$25,000.00
Additional Cost (first 500LF)	LF	100	\$200.00	\$20,000.00
			Initial Project Costs	\$46,650.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,332.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$4,665.00
			Base Construction Costs	\$53,647.50
			<i>Mobilization (5%)</i>	\$2,682.38
			Subtotal 1	\$56,329.88
			<i>Contingency (25%)</i>	\$14,082.47
			Subtotal 2	\$70,412.34
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$31,685.55
			Total Costs	\$102,097.90
			Estimated Project Costs	\$103,000.00

5.3.8 Horsepen Creek Watershed, Frying Pan Branch W MA Fact Sheets

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HC9106 Stormwater Pond Retrofit



Address: 2554 Centreville Road
Location: Frying Pan Road & Centreville Road
Land Owner: State/County
PIN: 0242-01-0008, 0251-01-0002A
Control Type: Quality/Quantity
Drainage Area: 67 acres
Receiving Waters: Frying Pan Branch

Description: The current outlet structure for dry pond 1288DP is a large five foot culvert. The pond will be improved by adding a box weir to the culvert with a low flow orifice, regrading the bottom of the pond for more capacity and replanting with native vegetation.



Project Area Map

Project Benefits: This detention basin retrofit project will reduce sediment and nutrient loadings, improve water quality in downstream waterbodies, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. This project will also increase the storage capacity of the existing pond, and the improved outlet structure will allow for a more controlled stormwater discharge to enhance the performance of the basin.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. This is an existing County facility. Parts of the project are located on a conservation easement, sanitary sewer easement, and utility right-of-way. Part of the project is located on a storm drainage easement, this may need to be enlarged. Accessibility is excellent from Centreville Road and Frying Pan Road and there is an access easement. Tree impacts are expected. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	173	\$40.00	\$6,920.00
Plantings	AC	0.74	\$25,000.00	\$18,500.00
Clear and Grub	AC	0.37	\$8,500.00	\$3,145.00
Grading and Excavation	CY	2500	\$35.00	\$87,500.00
Embankment	CY	20	\$50.00	\$1,000.00
Outflow Pipe	LF	30	\$125.00	\$3,750.00
RipRap Stabilization	SY	15	\$100.00	\$1,500.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$137,315.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$6,865.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$13,731.50
Base Construction Costs				\$157,912.25
<i>Mobilization (5%)</i>				\$7,895.61
Subtotal 1				\$165,807.86
<i>Contingency (25%)</i>				\$41,451.97
Subtotal 2				\$207,259.83
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$93,266.92
Total Costs				\$300,526.75
Estimated Project Costs				\$310,000.00

HC9109 Stormwater Pond Retrofit



Address: 2486 Masons Ferry Drive
Location: Between Coppermine Road, Thomas Jefferson Drive & Masons Ferry Drive
Land Owner: County
PIN: 0163-01-0037A
Control Type: Quality/Quantity
Drainage Area: 39 acres
Receiving Waters: Frying Pan Branch

Description: Existing dry pond (0406DP) will be improved to an enhanced extended dry detention basin by removing the concrete trickle ditch, creating a forebay at each inlet, installing marsh areas and by retrofitting the outlet structure for extended detention.



Project Area Map

Project Benefits: This detention basin retrofit project will help to reduce sediment and nutrient loadings, improve water quality in downstream waterbodies, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. Removal of the trickle ditch will help to reduce stormwater velocities and may allow for some infiltration.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. This is an existing County facility. A storm drainage easement may be necessary. Accessibility is excellent from Masons Ferry Drive. No tree impacts are anticipated. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	158	\$40.00	\$6,320.00
Plantings	AC	0.78	\$25,000.00	\$19,500.00
Grading and Excavation	CY	3789	\$35.00	\$132,615.00
Embankment	CY	11	\$50.00	\$550.00
Outflow Pipe	LF	30	\$125.00	\$3,750.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$178,835.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$8,941.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$17,883.50
Base Construction Costs				\$205,660.25
<i>Mobilization (5%)</i>				\$10,283.01
Subtotal 1				\$215,943.26
<i>Contingency (25%)</i>				\$53,985.82
Subtotal 2				\$269,929.08
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$121,468.09
Total Costs				\$391,397.16
Estimated Project Costs				\$400,000.00

HC9114 Stormwater Pond Retrofit



Address: 2350 Woodland Pond Lane
Location: Fox Mill Road & Cabin Creek Road
Land Owner: County
PIN: 0163-01-0025D1
Control Type: Quality/Quantity
Drainage Area: 68 acres
Receiving Waters: Frying Pan Branch

Description: Existing dry pond (1416DP) will be improved to an enhanced extended dry detention basin by installing a forebay north of the walking path, regrading the basin bottom with a meander and marsh areas, and installing an outlet structure.



Project Area Map

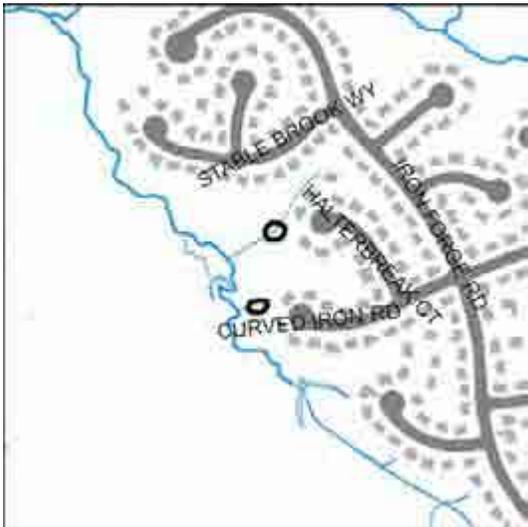
Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality in downstream waterbodies, reduce peak stormwater flows for storms up to a 10-year event, provide for evaporation and evapotranspiration, and improve wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Part of the project is located on or adjacent to a sanitary sewer easement, a storm drainage easement and restrictive planting easement. A storm drainage easement may be necessary. Accessibility is excellent from Fox Mill Road, Sunrise Valley Drive, and adjacent parking lots. No tree impacts are anticipated. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	359	\$40.00	\$14,360.00
Plantings	AC	1.78	\$25,000.00	\$44,500.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	2150	\$35.00	\$75,250.00
Embankment	CY	20	\$50.00	\$1,000.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
			Initial Project Costs	\$154,135.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$7,706.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$15,413.50
			Base Construction Costs	\$177,255.25
			<i>Mobilization (5%)</i>	\$8,862.76
			Subtotal 1	\$186,118.01
			<i>Contingency (25%)</i>	\$46,529.50
			Subtotal 2	\$232,647.52
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$104,691.38
			Total Costs	\$337,338.90
			Estimated Project Costs	\$340,000.00

HC9116 New Stormwater Pond



Address: 13136 Curved Iron Road
Location: Near Halterbreak Court & Curved Iron Road culs-de sac
Land Owner: County
PIN: 0251-14-F, 0251-14-G
Control Type: Quality
Drainage Area: 16 acres
Receiving Waters: Frying Pan Branch

Description: Sycamore Ridge area does not have existing stormwater controls. The drainage channels show signs of erosion. Construct new pocket wetlands at outfalls to slow stormwater and increase nutrient uptake. Repair drainage channels with rock and vegetation.



Project Area Map

Project Benefits: This project will improve water quality by removing an estimated one ton/yr of total suspended solids, 31 lbs/yr of nitrogen, and six lbs/yr of phosphorus. The pocket wetlands will reduce stormwater peak flows, reduce sediment and nutrient loadings, and provide for evaporation, evapotranspiration and wildlife habitat. Stabilization of the drainage channels will reduce sediment loadings.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. Storm drainage easements may be necessary. Accessibility is excellent from Curved Iron Road and Halterbreak Court culs-de-sac. Tree impacts are anticipated. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	85	\$40.00	\$3,400.00
Plantings	AC	0.21	\$25,000.00	\$5,250.00
Clear and Grub	AC	0.21	\$8,500.00	\$1,785.00
Grading and Excavation	CY	200	\$35.00	\$7,000.00
Construct New Channel	LF	200	\$200.00	\$40,000.00
Additional Cost (first 500LF)	LF	200	\$200.00	\$40,000.00
Initial Project Costs				\$97,435.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,871.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$9,743.50
Base Construction Costs				\$112,050.25
<i>Mobilization (5%)</i>				\$5,602.51
Subtotal 1				\$117,652.76
<i>Contingency (25%)</i>				\$29,413.19
Subtotal 2				\$147,065.95
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$66,179.68
Total Costs				\$213,245.63
Estimated Project Costs				\$220,000.00

HC9119 Stormwater Pond Retrofit



Address: 2322 Colts Brook Drive
Location: Colts Brook Drive & Fox Mill Road
Land Owner: County
PIN: 0164-091B-A
Control Type: Quality/Quantity
Drainage Area: 35 acres
Receiving Waters: Frying Pan Branch

Description: Existing dry pond (0610DP) provides only water quantity control. Improve basin to an enhanced extended detention dry basin, disconnect three upstream outfalls, install two small forebays and an outlet structure.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. Removing the concrete trickle ditches will help to slow stormwater velocities and possibly promote infiltration. A small park area with educational signage can be integrated along the walking path.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. This is an existing County facility and is located within a storm drainage easement, which may need to be enlarged. Accessibility is excellent from Colts Brook Drive or Fox Mill Road. There are no tree impacts or significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	316	\$40.00	\$12,640.00
Plantings	AC	1.57	\$25,000.00	\$39,250.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	3790	\$35.00	\$132,650.00
Embankment	CY	12	\$50.00	\$600.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$204,165.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$10,208.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$20,416.50
Base Construction Costs				\$234,789.75
<i>Mobilization (5%)</i>				\$11,739.49
Subtotal 1				\$246,529.24
<i>Contingency (25%)</i>				\$61,632.31
Subtotal 2				\$308,161.55
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$138,672.70
Total Costs				\$446,834.24
Estimated Project Costs				\$450,000.00

HC9127 Stormwater Pond Retrofit



Address: 2641 Meadow Hall Drive
Location: Near Meadow Hall Drive & New Carson Drive
Land Owner: County
PIN: 0251-05-B, 0251-12-B
Control Type: Quality/Quantity
Drainage Area: 19 acres
Receiving Waters: Frying Pan Branch

Description: Existing dry ponds (0563DP and 0631DP) provide only water quantity control. Improve basins to enhanced extended dry detention basins with marsh areas including the removal of a concrete trickle ditch and the installation of outlet structures.



Project Area Map

Project Benefits: This project will improve water quality by removing an estimated one ton/yr of total suspended solids, 25 lbs/yr of nitrogen, and four lbs/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat. By removing the concrete trickle ditches and naturalizing stream channels, stormwater velocities will be reduced.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. 0563DP is an existing County facility located within a storm drainage easement. A storm drainage easement may be necessary for 0631DP, which is located next to a Colonial Gas easement. Accessibility to 0563DP is excellent from Meadow Hall Drive. Accessibility to 0631DP is excellent via the gas easement from either Monterey Estates Drive or New Austin Court. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	235	\$40.00	\$9,400.00
Plantings	AC	1.16	\$25,000.00	\$29,000.00
Clear and Grub	AC	0.1	\$8,500.00	\$850.00
Grading and Excavation	CY	200	\$35.00	\$7,000.00
Embankment	CY	15	\$50.00	\$750.00
Outflow Pipe	LF	40	\$125.00	\$5,000.00
RipRap Stabilization	SY	22	\$100.00	\$2,200.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$79,200.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,960.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$7,920.00
Base Construction Costs				\$91,080.00
<i>Mobilization (5%)</i>				\$4,554.00
Subtotal 1				\$95,634.00
<i>Contingency (25%)</i>				\$23,908.50
Subtotal 2				\$119,542.50
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$53,794.13
Total Costs				\$173,336.63
Estimated Project Costs				\$180,000.00

HC9503 BMP/LID



Address:	2717 West Ox Road
Location:	Frying Pan Park/Kidwell Farm
Land Owner:	County
PIN:	0251-01-0009
Control Type	Quality
Drainage Area	9 acres
Receiving Waters	Frying Pan Branch

Description: Frying Pan Park/Kidwell Farm does not have existing stormwater controls. Install vegetated swale along east side of horse ring to intercept overland flow from parking lot and divert to new bioretention area.



Project Area Map

Project Benefits: This project will reduce stormwater peak flows, reduce sediment and nutrient loadings, improve water quality, promote infiltration, and provide for evapotranspiration and wildlife habitat. In addition, the new bioretention area will reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration and evapotranspiration, and provide for wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. This project is located in a County park. A storm drainage easement may be necessary. Accessibility is excellent from the parking lot off of West Ox Road. No tree impacts or significant construction issues are anticipated.

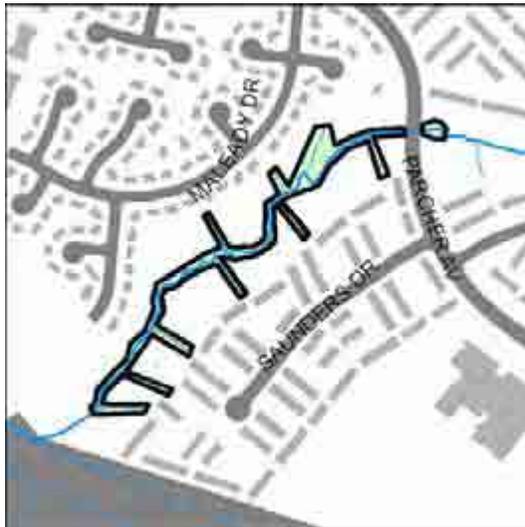
Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	478	\$50.00	\$23,900.00
Organic Compost Soil Amendment	CY	101	\$40.00	\$4,040.00
Plantings	AC	0.5	\$25,000.00	\$12,500.00
Initial Project Costs				\$40,440.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,022.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$4,044.00
Base Construction Costs				\$46,506.00
<i>Mobilization (5%)</i>				\$2,325.30
Subtotal 1				\$48,831.30
<i>Contingency (25%)</i>				\$12,207.83
Subtotal 2				\$61,039.13
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$27,467.61
Total Costs				\$88,506.73
Estimated Project Costs				\$90,000.00

5.3.9 Horsepen Creek Watershed, Lower Middle W MA Fact Sheets

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HC9200 Stream Restoration, Culvert Retrofit



Address: 13351 Parcher Avenue
Location: Near Parcher Avenue & Monaghan Drive, next to the Reflection Lake pool
Land Owner: County/Private
PIN: 0161-08-C, 0161-08-G, 0161-08-H, 0161-13-K, 0161-14-N
Control Type: Quality
Drainage Area: 265 acres
Receiving Waters: Horsepen Run

Description: This area does not have stormwater controls. Retrofit culvert with micro pool above Parcher Ave., regrade and stabilize streambanks, vegetate stone drainage channels and install check dams, restore buffer, install educational signage and install new pond.



Project Area Map

Project Benefits: This new pond will reduce sediment and nutrient loadings, improve water quality in downstream waterbodies, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat. Stabilizing streambanks will reduce sediment loading and improve wildlife habitat. Restoring the riparian buffer will help to slow down stormwater velocities, improve water quality, reduce stream temperatures and improve wildlife habitat. Installing check dams will reduce stormwater peak flows, improve water quality and promote infiltration.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. WPO219 is an existing County facility. A storm drainage easement may be necessary. Accessibility is good from Parcher Avenue, Maleady Drive, Farougi Court, Apgar Place, and nearby parking lots (though not always close by). Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	240	\$40.00	\$9,600.00
Plantings	AC	1.35	\$25,000.00	\$33,750.00
Clear and Grub	AC	0.16	\$8,500.00	\$1,360.00
Grading and Excavation	CY	978	\$35.00	\$34,230.00
Earthen Berm	CY	50	\$35.00	\$1,750.00
Construct New Channel	LF	1975	\$200.00	\$395,000.00
Clear and Grub (Stream)	AC	0.91	\$10,000.00	\$9,100.00
Initial Project Costs				\$484,790.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$24,239.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$48,479.00
Base Construction Costs				\$557,508.50
<i>Mobilization (5%)</i>				\$27,875.43
Subtotal 1				\$585,383.93
<i>Contingency (25%)</i>				\$146,345.98
Subtotal 2				\$731,729.91
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$329,278.46
Total Costs				\$1,061,008.36
Estimated Project Costs				\$1,070,000.00

5.3.10 Horsepen Creek Watershed, Merrybrook Run W MA Fact Sheets

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HC9107 New Stormwater Pond



Address:	900 Palmer Drive
Location:	Palmer Drive & Dogwood Court
Land Owner:	Local
PIN:	0161-19-D1
Control Type	Quality/Quantity
Drainage Area	32 acres
Receiving Waters	Merrybrook Run

Description: The community around Arkansas Ave. and Palmer Dr. does not have existing stormwater controls. Construct new enhanced extended detention dry basin with marsh areas to collect stormwater runoff conveyed in storm sewers and swale outlet to stream channel.



 New Enhanced ED Basin

Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality in downstream waterbodies, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. A storm drainage easement may be necessary. Accessibility is excellent from Palmer Drive. No tree impacts are expected. The basin must be deep enough to intercept piped storm sewers.

Costs:

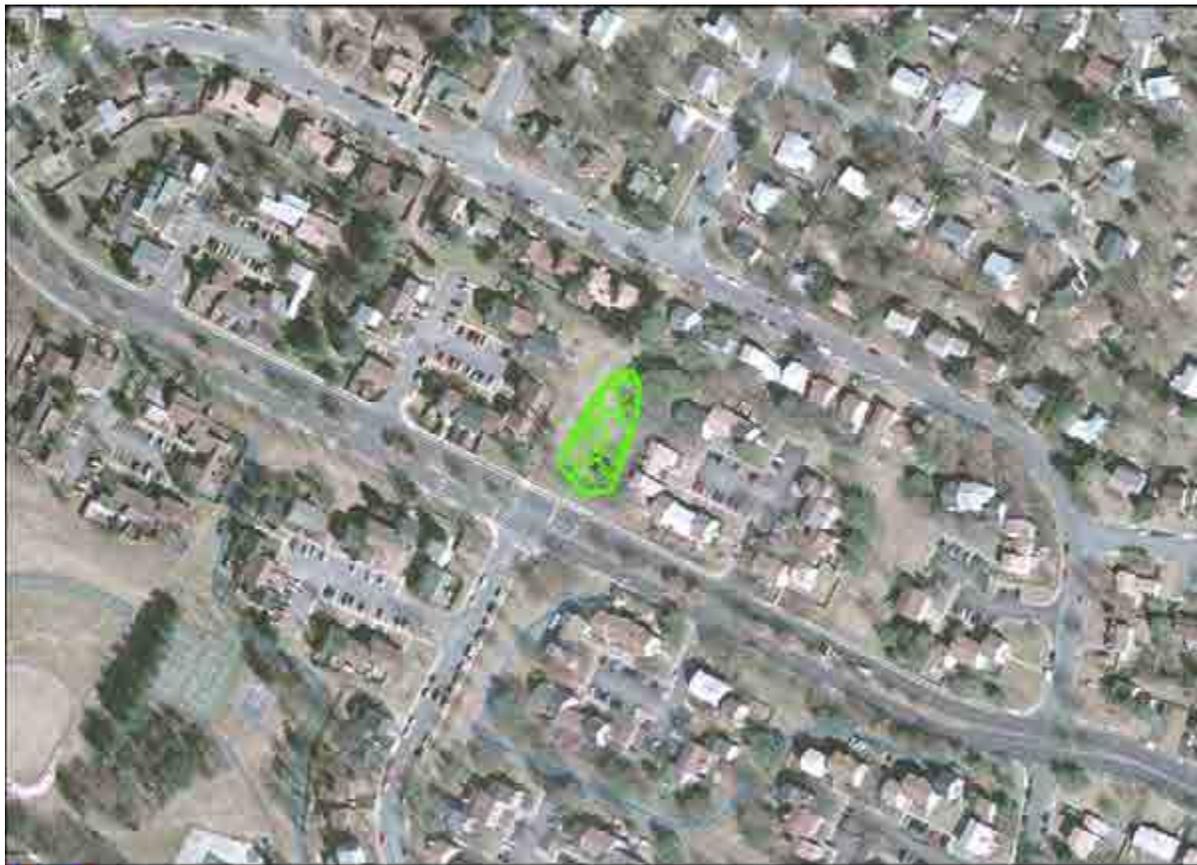
<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	65	\$40.00	\$2,600.00
Plantings	AC	0.16	\$25,000.00	\$4,000.00
Grading and Excavation	CY	1500	\$35.00	\$52,500.00
Embankment	CY	300	\$50.00	\$15,000.00
Structural BMP and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
New Storm Pipe (Med)	LF	30	\$200.00	\$6,000.00
Initial Project Costs				\$95,100.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,755.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$9,510.00
Base Construction Costs				\$109,365.00
<i>Mobilization (5%)</i>				\$5,468.25
Subtotal 1				\$114,833.25
<i>Contingency (25%)</i>				\$28,708.31
Subtotal 2				\$143,541.56
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$64,593.70
Total Costs				\$208,135.27
Estimated Project Costs				\$210,000.00

HC9110 New Stormwater Pond



Address:	409 Maple Court
Location:	Herndon Parkway & Campbell Way
Land Owner:	Private
PIN:	0162-21-C
Control Type	Quality/Quantity
Drainage Area	10 acres
Receiving Waters	Merrybrook Run

Description: The community around Palmer Drive does not have existing stormwater controls. Daylight piped storm sewers and construct new enhanced extended detention dry basin below new outfall.



 New Extended Detention Basin

Project Area Map

Project Benefits: This project will help to improve water quality by removing an estimated seven lbs/yr of nitrogen and two lbs/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. A storm drainage easement may be necessary. Accessibility is excellent from Herndon Parkway. No tree impacts are anticipated. The basin must be deep enough to allow day-lighting of piped storm sewers.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	60	\$40.00	\$2,400.00
Plantings	AC	0.28	\$25,000.00	\$7,000.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	1344	\$35.00	\$47,040.00
Access Road	SY	110	\$25.00	\$2,750.00
Structural BMP and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
New Storm Pipe (Low)	LF	25	\$100.00	\$2,500.00
Embankment	CY	8	\$50.00	\$400.00
Initial Project Costs				\$72,515.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,625.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$7,251.50
Base Construction Costs				\$83,392.25
<i>Mobilization (5%)</i>				\$4,169.61
Subtotal 1				\$87,561.86
<i>Contingency (25%)</i>				\$21,890.47
Subtotal 2				\$109,452.33
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$49,253.55
Total Costs				\$158,705.88
Estimated Project Costs				\$160,000.00

5.3.11 Horsepen Creek Watershed, Middle W MA Fact Sheets

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HC9102 New Stormwater Pond



Address:	13650 Legacy Circle
Location:	Legacy Circle & Sunrise Valley Drive
Land Owner:	Private
PIN:	0154-01-0022D3, 0154-01-0022E
Control Type	Quality/Quantity
Drainage Area	40 acres
Receiving Waters	Horsepen Run

Description: An existing swale with wetland vegetation is a prime location for a new enhanced extended detention dry pond with minimal grading required for low marsh areas and berm along tennis courts.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality in downstream waterbodies, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. A storm drainage easement may be necessary. Accessibility is excellent from Sunrise Valley Drive and adjacent parking lots. It is unlikely that this project will cause tree impacts. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	57	\$40.00	\$2,280.00
Plantings	AC	0.28	\$25,000.00	\$7,000.00
Clear and Grub	AC	0.1	\$8,500.00	\$850.00
Grading and Excavation	CY	456	\$35.00	\$15,960.00
Earthen Berm	CY	59	\$35.00	\$2,065.00
Access Road	SY	100	\$25.00	\$2,500.00
Structural BMP and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
New Storm Pipe (Med)	LF	100	\$200.00	\$20,000.00
Initial Project Costs				\$65,655.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,282.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$6,565.50
Base Construction Costs				\$75,503.25
<i>Mobilization (5%)</i>				\$3,775.16
Subtotal 1				\$79,278.41
<i>Contingency (25%)</i>				\$19,819.60
Subtotal 2				\$99,098.02
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$44,594.11
Total Costs				\$143,692.12
Estimated Project Costs				\$150,000.00

HC9500 BMP/LID



Address: 13665 Stratford Glen Place
Location: Wellesley Subdivision, Stratford Glen Place
Land Owner: Private
PIN: 0154-03-C
Control Type: Quality
Drainage Area: 9 acres
Receiving Waters: Horsepen Run

Description: Install rain garden at the entrance of Sutters Mill Drive with curb cuts in the existing curbing. Regrade and vegetate existing basin bottom. Cut existing outlet pipe and fit with a raised yard drain outlet structure.



Project Area Map

Project Benefits: This project will reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration and evapotranspiration, and provide for wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. This project is partially located on a Dominion Electric easement. A storm drainage easement may be necessary. Accessibility is excellent from River Birch Road, Stratford Glen Place, Saint Johns Wood Place. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Bioretention Filters & Basin	SY	511	\$150.00	\$76,650.00
Organic Compost Soil Amendment	CY	142	\$40.00	\$5,680.00
Plantings	AC	0.25	\$25,000.00	\$6,250.00
Clear and Grub	AC	0.1	\$8,500.00	\$850.00
Grading and Excavation	CY	200	\$35.00	\$7,000.00
Embankment	CY	8	\$50.00	\$400.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Initial Project Costs				\$110,430.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$5,521.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$11,043.00
Base Construction Costs				\$126,994.50
<i>Mobilization (5%)</i>				\$6,349.73
Subtotal 1				\$133,344.23
<i>Contingency (25%)</i>				\$33,336.06
Subtotal 2				\$166,680.28
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$75,006.13
Total Costs				\$241,686.41
Estimated Project Costs				\$250,000.00

5.3.12 Horsepen Creek Watershed, Upper W MA Fact Sheets

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HC9118 Stormwater Pond Retrofit



Address: 2714 Floris Lane
Location: Between Floris Lane & Merricourt Lane culs-de-sac
Land Owner: County/Private
PIN: 0251-04-0008B, 0251-16-B
Control Type: Quality/Quantity
Drainage Area: 27 acres
Receiving Waters: Horsepen Run

Description: Existing dry basins (0803DP and unnamed dry basin) provide only water quantity control. The basins will be improved to enhanced extended dry detention basins by retrofitting existing or installing new outlet structures and planting native vegetation.



Project Area Map

Project Benefits: These detention basin retrofit projects will improve water quality by removing an estimated one ton/yr of total suspended solids, 19 lbs/yr of nitrogen, and four lbs/yr of phosphorus. Additionally, these projects will reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. These basins are existing County facilities. Storm drainage easements may be necessary. Accessibility is excellent from Merricourt Lane and Floris Lane. No tree impacts are anticipated. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	70	\$40.00	\$2,800.00
Plantings	AC	0.34	\$25,000.00	\$8,500.00
Clear and Grub	AC	0.1	\$8,500.00	\$850.00
Grading and Excavation	CY	200	\$35.00	\$7,000.00
Embankment	CY	11	\$50.00	\$550.00
Outflow Pipe	LF	40	\$125.00	\$5,000.00
RipRap Stabilization	SY	20	\$100.00	\$2,000.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$51,700.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$2,585.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$5,170.00
Base Construction Costs				\$59,455.00
<i>Mobilization (5%)</i>				\$2,972.75
Subtotal 1				\$62,427.75
<i>Contingency (25%)</i>				\$15,606.94
Subtotal 2				\$78,034.69
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$35,115.61
Total Costs				\$113,150.30
Estimated Project Costs				\$120,000.00

HC9121 Stormwater Pond Retrofit, BMP/LID



Address: 2800 Centreville Road
Location: Centreville Road & Lake Shore Drive
Land Owner: State/County/Private
PIN: 0251-01-0027A, 0251-01-0034D, 0251-01-0035, 0251-01-0037
Control Type: Quality/Quantity
Drainage Area: 23 acres
Receiving Waters: Horsepen Run

Description: Three existing dry ponds (VDOT29068, DP0015, DP0015) provide only water quantity control. Improve basins with water quality controls and remove concrete trickle ditches. Install vegetated swales in road dividers.



Project Area Map

Project Benefits: By retrofitting these three dry detention basins, sediment and nutrient loadings will be reduced and water quality in downstream waterbodies will be improved. Additionally, peak stormwater flows for storms up to a 10-year event will be reduced, evapotranspiration will be increased and wildlife habitat will be created.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Projects in RPAs may require exemptions or waivers. There are two existing County facilities and one VDOT existing facility. Part of the project is located within the Centreville Road right-of-way. Storm drainage easements may be necessary. Accessibility is excellent from Centreville Road. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	925	\$50.00	\$46,250.00
Organic Compost Soil Amendment	CY	641	\$40.00	\$25,640.00
Plantings	AC	1.55	\$25,000.00	\$38,750.00
Clear and Grub	AC	0.33	\$8,500.00	\$2,805.00
Grading and Excavation	CY	2689	\$35.00	\$94,115.00
Embankment	CY	41	\$50.00	\$2,050.00
Outflow Pipe	LF	110	\$125.00	\$13,750.00
RipRap Stabilization	SY	30	\$100.00	\$3,000.00
Structural BMP Retrofit and Incidentals (Low)	LS	4	\$10,000.00	\$40,000.00
Initial Project Costs				\$266,360.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$13,318.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$26,636.00
Base Construction Costs				\$306,314.00
<i>Mobilization (5%)</i>				\$15,315.70
Subtotal 1				\$321,629.70
<i>Contingency (25%)</i>				\$80,407.43
Subtotal 2				\$402,037.13
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$180,916.71
Total Costs				\$582,953.83
Estimated Project Costs				\$590,000.00

HC9122 Stormwater Pond Retrofit



Address: 2711 Floris Lane
Location: Lake Shore Drive & Running Pump Lane
Land Owner: Private
PIN: 0251-04-0008B, 0251-04-0009A, 0251-06-B, 0253-08-C,
Control Type: Quality/Quantity
Drainage Area: 93 acres
Receiving Waters: Horsepen Run

Description: Existing non-stormwater pond (FM0014) will be improved to a stormwater wet pond including a slight draw down of the water level to provide additional storage, installing an outlet structure, installing vegetation and repairing a seep in the dam.



Project Area Map

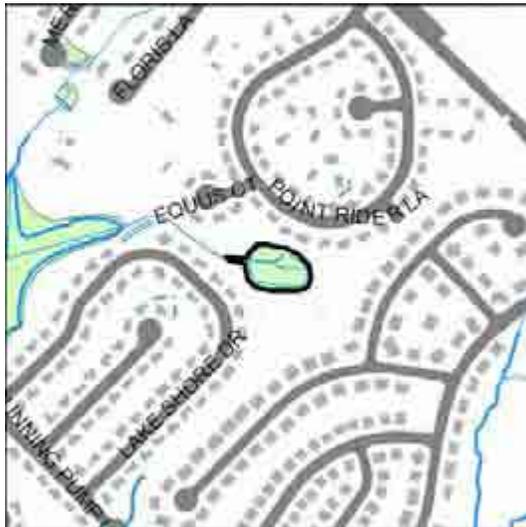
Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality in downstream waterbodies, increase storage volume, eliminate an existing seep in the dam of the pond, reduce peak stormwater flows for storms up to a 10-year event, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a pond, wetland, or on a dam. Projects in RPAs may require exemptions or waivers. This is a privately owned pond. A storm drainage easement may be necessary. Accessibility is good from Lake Shore Drive. Tree impacts are anticipated. There are no significant construction issues anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	20	\$40.00	\$800.00
Plantings	AC	0.1	\$25,000.00	\$2,500.00
Clear and Grub	AC	0.1	\$8,500.00	\$850.00
Grading and Excavation	CY	100	\$35.00	\$3,500.00
Embankment	CY	20	\$50.00	\$1,000.00
Outflow Pipe	LF	30	\$125.00	\$3,750.00
RipRap Stabilization	SY	20	\$100.00	\$2,000.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
			Initial Project Costs	\$29,400.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$1,470.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$2,940.00
			Base Construction Costs	\$33,810.00
			<i>Mobilization (5%)</i>	\$1,690.50
			Subtotal 1	\$35,500.50
			<i>Contingency (25%)</i>	\$8,875.13
			Subtotal 2	\$44,375.63
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$19,969.03
			Total Costs	\$64,344.66
			Estimated Project Costs	\$70,000.00

HC9123 Stormwater Pond Retrofit



Address:	13348 Point Rider Lane
Location:	Near Point Rider Lane & Equus Court
Land Owner:	County
PIN:	0251-07-B
Control Type	Quality/Quantity
Drainage Area	25 acres
Receiving Waters	Horsepen Run

Description: Existing dry pond (0196DP) will be improved to an enhanced extended dry detention basin by removing a concrete trickle ditch, adding an outlet structure, restoring the downstream channel with vegetation and restoring access to the site.



 Retrofit to Enhanced ED Basin

Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality in downstream waterbodies, reduce peak stormwater flows for storms up to a 10-year event, provide for evapotranspiration and wildlife habitat, and stabilize existing stream banks. Additionally, removing the concrete trickle ditch will help to slow stormwater velocities and promote infiltration.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. This is an existing County facility located within a storm drainage easement, which may need to be enlarged. Accessibility is good from Point Rider Lane between two parcels. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	225	\$40.00	\$9,000.00
Plantings	AC	1.1	\$25,000.00	\$27,500.00
Grading and Excavation	CY	231	\$35.00	\$8,085.00
Embankment	CY	11	\$50.00	\$550.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	20	\$100.00	\$2,000.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$64,635.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,231.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$6,463.50
Base Construction Costs				\$74,330.25
<i>Mobilization (5%)</i>				\$3,716.51
Subtotal 1				\$78,046.76
<i>Contingency (25%)</i>				\$19,511.69
Subtotal 2				\$97,558.45
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$43,901.30
Total Costs				\$141,459.76
Estimated Project Costs				\$150,000.00

HC9126 Stormwater Pond Retrofit



Address: 13076 Monterey Estates Drive
Location: Monterey Estates Drive & West Ox Road
Land Owner: County
PIN: 0251-12-A
Control Type: Quality/Quantity
Drainage Area: 7 acres
Receiving Waters: Horsepen Run

Description: Existing dry pond (0562DP) provides only water quantity control. Improve basin to an enhanced extended dry detention basin, enlarge size for more capacity, install a forebay to catch sediment and install an outlet structure.



 Retrofit to Enhanced ED Basin

Project Area Map

Project Benefits: This project will improve water quality by removing an estimated one ton/yr of total suspended solids, five lbs/yr of nitrogen, and one lb/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10 year event, provide for more storage volume, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. This is an existing County facility located within a storm drainage easement. Accessibility is excellent from West Ox Road. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	57	\$40.00	\$2,280.00
Plantings	AC	0.28	\$25,000.00	\$7,000.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	1367	\$35.00	\$47,845.00
Embankment	CY	16	\$50.00	\$800.00
Outflow Pipe	LF	30	\$125.00	\$3,750.00
RipRap Stabilization	SY	15	\$100.00	\$1,500.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$78,600.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,930.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$7,860.00
Base Construction Costs				\$90,390.00
<i>Mobilization (5%)</i>				\$4,519.50
Subtotal 1				\$94,909.50
<i>Contingency (25%)</i>				\$23,727.38
Subtotal 2				\$118,636.88
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$53,386.59
Total Costs				\$172,023.47
Estimated Project Costs				\$180,000.00

HC9128 Stormwater Pond Retrofit



Address: 3001 Centreville Road
Location: Korean Orthodox Presbyterian Church, McLearen Road & Centreville Road
Land Owner: Private
PIN: 0253-01-0014
Control Type: Quality/Quantity
Drainage Area: 29 acres
Receiving Waters: Horsepen Run

Description: The Korean Orthodox Presbyterian dry pond (no StormNet ID) provides only water quantity control. Improve basin to an enhanced extended dry detention basin including the removal of a concrete trickle ditch and the addition of an outlet structure.



 Retrofit to Enhanced ED Basin

Project Area Map

Project Benefits: This project will improve water quality by removing an estimated nine tons/yr of total suspended solids, 50 lbs/yr of nitrogen, and 10 lbs/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat. Stormwater velocities will be reduced by removing concrete trickle ditches and naturalizing channels.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. A storm drainage easement may be necessary. Accessibility is excellent from the Korean Orthodox Presbyterian driveway or Centreville Road. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	278	\$40.00	\$11,120.00
Plantings	AC	1.38	\$25,000.00	\$34,500.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	3339	\$35.00	\$116,865.00
Embankment	CY	11	\$50.00	\$550.00
Outflow Pipe	LF	100	\$125.00	\$12,500.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$192,060.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$9,603.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$19,206.00
Base Construction Costs				\$220,869.00
<i>Mobilization (5%)</i>				\$11,043.45
Subtotal 1				\$231,912.45
<i>Contingency (25%)</i>				\$57,978.11
Subtotal 2				\$289,890.56
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$130,450.75
Total Costs				\$420,341.32
Estimated Project Costs				\$430,000.00

HC9129 Stormwater Pond Retrofit, BMP/LID



Address:	13142 New Parkland Drive
Location:	West Ox Road & New Parkland Drive
Land Owner:	County
PIN:	0253-09-A
Control Type	Quality/Quantity
Drainage Area	40 acres
Receiving Waters	Horsepen Run

Description: Improve existing dry pond (0568DP) to an enhanced extended dry detention basin with marsh areas, install a natural low flow channel and retrofit outlet structure. Concrete swales will be removed/vegetated and educational signage will be installed.



Project Area Map

Project Benefits: This project will improve water quality by removing an estimated two tons/yr of total suspended solids, 38 lbs/yr of nitrogen, and eight lbs/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat. Removing the concrete trickle ditch will reduce stormwater velocities and naturalizing the ditches will improve wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. This is an existing County facility located within a storm drainage easement and adjacent to a Colonial Gas easement. Accessibility is excellent from West Ox Road, the Colonial Gas easement, or a storm drainage easement off of Cockerill Farm Lane. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Vegetated Swale	SY	440	\$50.00	\$22,000.00
Organic Compost Soil Amendment	CY	300	\$40.00	\$12,000.00
Plantings	AC	1.49	\$25,000.00	\$37,250.00
Clear and Grub	AC	0.75	\$8,500.00	\$6,375.00
Grading and Excavation	CY	3600	\$35.00	\$126,000.00
Embankment	CY	15	\$50.00	\$750.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$222,975.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$11,148.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$22,297.50
Base Construction Costs				\$256,421.25
<i>Mobilization (5%)</i>				\$12,821.06
Subtotal 1				\$269,242.31
<i>Contingency (25%)</i>				\$67,310.58
Subtotal 2				\$336,552.89
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$151,448.80
Total Costs				\$488,001.69
Estimated Project Costs				\$490,000.00

HC9130 Stormwater Pond Retrofit



Address: 13264 Middleton Farm Lane
Location: Middleton Farm Subdivision,
between Middleton Farm Lane
and Blue Holly Lane culs-de-sac
Land Owner: County
PIN: 0253-15-C
Control Type: Quality/Quantity
Drainage Area: 8 acres
Receiving Waters: Horsepen Run

Description: Improve Middleton Farm existing dry pond (1349DP) to an enhanced extended dry detention basin by removing the concrete trickle ditch, replacing the concrete apron with riprap, installing an outlet structure, and raising the emergency overflow.



 Retrofit to Enhanced ED Basin

Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality in downstream waterbodies, reduce peak stormwater flows for storms up to a 10-year event, increase stormwater storage, and provide for evapotranspiration and wildlife habitat. Additionally, removing the concrete trickle ditch will help to slow stormwater velocities and promote infiltration.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. This is an existing County facility located partially in a conservation easement and adjacent to a sanitary sewer easement and AT&T easement. A storm drainage easement may be necessary. Accessibility is excellent from Middleton Farm Lane, where there is an access easement. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	279	\$40.00	\$11,160.00
Plantings	AC	1.38	\$25,000.00	\$34,500.00
Grading and Excavation	CY	200	\$35.00	\$7,000.00
Embankment	CY	11	\$50.00	\$550.00
Outflow Pipe	LF	40	\$125.00	\$5,000.00
RipRap Stabilization	SY	20	\$100.00	\$2,000.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Initial Project Costs				\$70,210.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,510.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$7,021.00
Base Construction Costs				\$80,741.50
<i>Mobilization (5%)</i>				\$4,037.08
Subtotal 1				\$84,778.58
<i>Contingency (25%)</i>				\$21,194.64
Subtotal 2				\$105,973.22
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$47,687.95
Total Costs				\$153,661.17
Estimated Project Costs				\$160,000.00

HC9132 Stormwater Pond Retrofit



Address: 3029 McMaster Court
Location: Highland Mews Subdivision,
Hutumn Court & Highland Mews
Court
Land Owner: County
PIN: 0253-10-C1
Control Type Quality/Quantity
Drainage Area 23.3 acres
Receiving Waters Horsepen Run

Description: Highland Mews existing dry pond (1055DP) provides only water quantity control. Improve basin to an enhanced extended dry detention basin, remove concrete trickle ditch, install an outlet structure and install riprap at outfalls for energy dissipation.



Project Area Map

Project Benefits: This project will improve water quality by reducing an estimated one ton/yr of total suspended solids, 25 lbs/yr of nitrogen, and four lbs/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat. Removing the concrete trickle ditch will reduce stormwater velocities and naturalizing the ditches will improve wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. This is an existing County facility. A storm drainage easement may be necessary. Accessibility is excellent from Highland Mews Court. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	136	\$40.00	\$5,440.00
Plantings	AC	0.67	\$25,000.00	\$16,750.00
Clear and Grub	AC	0.1	\$8,500.00	\$850.00
Grading and Excavation	CY	1633	\$35.00	\$57,155.00
Embankment	CY	8	\$50.00	\$400.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	22	\$100.00	\$2,200.00
Structural BMP Retrofit and Incidentals (Low)	LS	1	\$10,000.00	\$10,000.00
Initial Project Costs				\$95,295.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,764.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$9,529.50
Base Construction Costs				\$109,589.25
<i>Mobilization (5%)</i>				\$5,479.46
Subtotal 1				\$115,068.71
<i>Contingency (25%)</i>				\$28,767.18
Subtotal 2				\$143,835.89
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$64,726.15
Total Costs				\$208,562.04
Estimated Project Costs				\$210,000.00

HC9134 Stormwater Pond Retrofit, BMP/LID



Address:	13377 Scotsmore Way
Location:	Kinross Circle & Scotsmore Way
Land Owner:	County/Private
PIN:	0351-02-G
Control Type	Quality/Quantity
Drainage Area	236 acres
Receiving Waters	Horsepen Run

Description: Chantilly Highlands community does not have existing stormwater controls. Improve regional pond H-19 (0747DP) by adding a box weir to detain water and naturalize. Install small forebays at each outfall and naturalize swales to a new bioretention basin.



Project Area Map

Project Benefits: This project will improve water quality by removing an estimated three tons/yr of total suspended solids, 161 lbs/yr of nitrogen, and 25 lbs/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10-year event, increase storage, and provide for evapotranspiration and wildlife habitat. Removing the concrete trickle ditch will reduce stormwater velocities and naturalizing the ditches will improve wildlife habitat. The new forebays will trap incoming sediments. The bioretention basin will reduce stormwater peak flows for small storm events, reduce stormwater runoff volumes by promoting infiltration and provide wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. 0747DP is an existing County facility. Storm drainage easements may be necessary. Accessibility is excellent for HC9134A&B from Kinross Circle or Muirkirk Lane. HC9134C access may be difficult, as it is surrounded by residential parcels and the stream. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Bioretention Filters & Basin	SY	378	\$150.00	\$56,700.00
Organic Compost Soil Amendment	CY	275	\$40.00	\$11,000.00
Plantings	AC	1.03	\$25,000.00	\$25,750.00
Clear and Grub	AC	0.33	\$8,500.00	\$2,805.00
Grading and Excavation	CY	400	\$35.00	\$14,000.00
Embankment	CY	22	\$50.00	\$1,100.00
Outflow Pipe	LF	30	\$125.00	\$3,750.00
RipRap Stabilization	SY	20	\$100.00	\$2,000.00
Structural BMP Retrofit and Incidentals (High)	LS	1	\$20,000.00	\$20,000.00
Initial Project Costs				\$137,105.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$6,855.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$13,710.50
Base Construction Costs				\$157,670.75
<i>Mobilization (5%)</i>				\$7,883.54
Subtotal 1				\$165,554.29
<i>Contingency (25%)</i>				\$41,388.57
Subtotal 2				\$206,942.86
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$93,124.29
Total Costs				\$300,067.15
Estimated Project Costs				\$310,000.00

HC9136 Stormwater Pond Retrofit



Address:	2587 Viking Drive
Location:	Near Viking Drive & Pinecrest Road
Land Owner:	County/Private
PIN:	0252-06-H
Control Type	Quality/Quantity
Drainage Area	176 acres
Receiving Waters	Horsepen Run

Description: Fox Mill Estates' existing dry pond provides only water quantity control. Improve basin to a constructed wetland. Enlarge basin, install a low v-notch weir as an outlet structure, install a fence and educational signage.



Project Area Map

Project Benefits: This project will improve water quality by removing an estimated 38 lbs/yr of nitrogen and six lbs/yr of phosphorus. The constructed wetland will reduce stormwater peak flows and provide for evaporation, evapotranspiration and wildlife habitat. The educational signage will explain how the constructed wetland works to improve water quality and manage stormwater.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. This is an existing County facility, which may require a storm drainage easement. Accessibility is excellent from Viking Drive. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	86	\$40.00	\$3,440.00
Plantings	AC	0.21	\$25,000.00	\$5,250.00
Clear and Grub	AC	0.21	\$8,500.00	\$1,785.00
Grading and Excavation	CY	1033	\$35.00	\$36,155.00
Embankment	CY	11	\$50.00	\$550.00
Outflow Pipe	LF	20	\$125.00	\$2,500.00
RipRap Stabilization	SY	11	\$100.00	\$1,100.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
			Initial Project Costs	\$65,780.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$3,289.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$6,578.00
			Base Construction Costs	\$75,647.00
			<i>Mobilization (5%)</i>	\$3,782.35
			Subtotal 1	\$79,429.35
			<i>Contingency (25%)</i>	\$19,857.34
			Subtotal 2	\$99,286.69
<i>Engineering Design, Surveys, Land Acquisition, Utility Relocation and Permits (45%)</i>				\$44,679.01
			Total Costs	\$143,965.70
			Estimated Project Costs	\$150,000.00

HC9137 Stream Restoration, New Stormwater Pond



Address:	12846 Tewksbury Drive
Location:	Between Tewksbury Drive & Kettering Drive
Land Owner:	Private
PIN:	0254-02-A, 0254-02-C
Control Type	Quality
Drainage Area	433 acres
Receiving Waters	Horsepen Run

Description: Fox Mill Estates does not have existing stormwater controls. Install three constructed wetlands, redirect and meander channels, and restore streambank with grading, boulder toe and vegetation. Restore the riparian vegetated buffer.



Project Area Map

Project Benefits: This project will improve water quality by removing an estimated 28 tons/yr of total suspended solids, 76 lbs/yr of nitrogen, and 23 lbs/yr of phosphorus. The constructed wetlands will reduce stormwater peak flows, allow for evaporation and evapotranspiration, and provide for wildlife habitat. Streambank stabilization measures will eliminate a direct source of sediments. A restored riparian buffer will help to lower stream temperatures, provided for evapotranspiration and improve wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. Storm drainage easements may be necessary. Accessibility is good from Tewksbury Drive and Viking Drive, though not always close by. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	193	\$40.00	\$7,720.00
Plantings	AC	0.77	\$25,000.00	\$19,250.00
Grading and Excavation	CY	1148	\$35.00	\$40,180.00
RipRap Stabilization	SY	10	\$100.00	\$1,000.00
Construct New Channel	LF	300	\$200.00	\$60,000.00
Additional Cost (first 500LF)	LF	300	\$200.00	\$60,000.00
Clear and Grub (Stream)	AC	0.77	\$10,000.00	\$7,700.00
Initial Project Costs				\$195,850.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$9,792.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$19,585.00
Base Construction Costs				\$225,227.50
<i>Mobilization (5%)</i>				\$11,261.38
Subtotal 1				\$236,488.88
<i>Contingency (25%)</i>				\$59,122.22
Subtotal 2				\$295,611.09
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$133,024.99
Total Costs				\$428,636.09
Estimated Project Costs				\$430,000.00

HC9140 Stormwater Pond Retrofit



Address:	2558 Huntington Drive
Location:	Huntington Drive cul-de-sac
Land Owner:	County/Private
PIN:	0252-10-G
Control Type	Quality/Quantity
Drainage Area	104 acres
Receiving Waters	Horsepen Run

Description: Fox Mill Estates' existing dry pond (0243DP) provides only water quantity control. Improve basin to an enhanced extended dry detention basin, install outlet structure, raise the emergency spillway and naturalize the basin.



Project Area Map

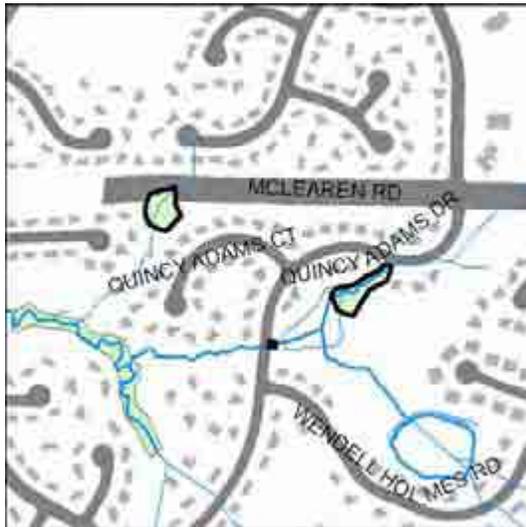
Project Benefits: This project will improve water quality by removing an estimated 52 lbs/yr of nitrogen and seven lbs/yr of phosphorus. This project will also reduce peak stormwater flows for storms up to a 10-year event and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. This is an existing County facility. A storm drainage easement may be necessary. Accessibility is excellent from Huntington Drive. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	218	\$40.00	\$8,720.00
Plantings	AC	1.08	\$25,000.00	\$27,000.00
Clear and Grub	AC	0.05	\$8,500.00	\$425.00
Grading and Excavation	CY	2622	\$35.00	\$91,770.00
Embankment	CY	44	\$50.00	\$2,200.00
Outflow Pipe	LF	80	\$125.00	\$10,000.00
RipRap Stabilization	SY	50	\$100.00	\$5,000.00
Structural BMP Retrofit and Incidentals (High)	LS	1	\$20,000.00	\$20,000.00
			Initial Project Costs	\$165,115.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$8,255.75
<i>Erosion and Sediment Control: 10% of project costs</i>				\$16,511.50
			Base Construction Costs	\$189,882.25
			<i>Mobilization (5%)</i>	\$9,494.11
			Subtotal 1	\$199,376.36
			<i>Contingency (25%)</i>	\$49,844.09
			Subtotal 2	\$249,220.45
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$112,149.20
			Total Costs	\$361,369.66
			Estimated Project Costs	\$370,000.00

HC9142 Stormwater Pond Retrofit, New Stormwater Pond



Address:	2627 Quincy Adams Drive
Location:	Quincy Adams Drive & Quincy Adams Court
Land Owner:	County/Private
PIN:	0254-08-A, 0254-08-B
Control Type	Quality/Quantity
Drainage Area	110 acres
Receiving Waters	Horsepen Run

Description: Fox Mill Estates' existing dry pond (0176DP) provides only water quantity control. Install forebay, slightly enlarge basin and retrofit outlet structure. Install constructed wetland near Kettering Drive and install riprap in channel below outfall.



Project Area Map

Project Benefits: This project will improve water quality by removing an estimated 16 tons/yr of total suspended solids, 58 lbs/yr of nitrogen, and 15 lbs/yr of phosphorus. This project will also reduce stormwater peak flows and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. 0176DP is an existing County facility. Storm drainage easements may be necessary. Accessibility to HC9142B is excellent from Quincy Adams Drive or the Transco Gas easement. Accessibility to HC9142A, which is partially located on a right-of-way, may be difficult as it is mostly surrounded by residential properties; nearest access is right-of-way from Quincy Adams Drive or Viking Drive. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	201	\$40.00	\$8,040.00
Plantings	AC	0.74	\$25,000.00	\$18,500.00
Clear and Grub	AC	0.1	\$8,500.00	\$850.00
Grading and Excavation	CY	300	\$35.00	\$10,500.00
Embankment	CY	22	\$50.00	\$1,100.00
Outflow Pipe	LF	30	\$125.00	\$3,750.00
RipRap Stabilization	SY	15	\$100.00	\$1,500.00
Construct New Channel	LF	100	\$200.00	\$20,000.00
Additional Cost (first 500LF)	LF	100	\$200.00	\$20,000.00
Structural BMP Retrofit and Incidentals (Med)	LS	1	\$15,000.00	\$15,000.00
Initial Project Costs				\$99,240.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$4,962.00
<i>Erosion and Sediment Control: 10% of project costs</i>				\$9,924.00
Base Construction Costs				\$114,126.00
<i>Mobilization (5%)</i>				\$5,706.30
Subtotal 1				\$119,832.30
<i>Contingency (25%)</i>				\$29,958.08
Subtotal 2				\$149,790.38
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$67,405.67
Total Costs				\$217,196.04
Estimated Project Costs				\$220,000.00

HC9149 New Stormwater Pond



Address:	2824 Chasbarb Court
Location:	Chasbarb Terrace & Chasbarb Court
Land Owner:	Private
PIN:	0254-02-0037, 0254-11-K
Control Type	Quality
Drainage Area	45 acres
Receiving Waters	Horsepen Run

Description: Remove existing concrete channel between Chasbarb Terrace and Viking Drive and vegetate. Install check dams in the channel for energy dissipation and install a constructed wetland in the lower portion of the channel.



Project Area Map

Project Benefits: This project will improve water quality by removing an estimated 17 tons/yr of total suspended solids, 46 lbs/yr of nitrogen, and 14 lbs/yr of phosphorus. This project will also reduce stormwater peak flows, promote infiltration, and provide for evapotranspiration and wildlife habitat.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. This project is located partially in a Transco Gas easement and on private property. A storm drainage easement may be necessary. Accessibility is excellent from Viking Drive and Chasbarb Terrace. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	143	\$40.00	\$5,720.00
Plantings	AC	0.71	\$25,000.00	\$17,750.00
Grading and Excavation	CY	241	\$35.00	\$8,435.00
Construct New Channel	LF	220	\$200.00	\$44,000.00
Additional Cost (first 500LF)	LF	220	\$200.00	\$44,000.00
Clear and Grub (Stream)	AC	0.1	\$10,000.00	\$1,000.00
Initial Project Costs				\$120,905.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$6,045.25
<i>Erosion and Sediment Control: 10% of project costs</i>				\$12,090.50
Base Construction Costs				\$139,040.75
<i>Mobilization (5%)</i>				\$6,952.04
Subtotal 1				\$145,992.79
<i>Contingency (25%)</i>				\$36,498.20
Subtotal 2				\$182,490.98
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$82,120.94
Total Costs				\$264,611.93
Estimated Project Costs				\$270,000.00

HC9201 Stream Restoration



Address:	2604 Claxton Drive
Location:	Between Claxton Drive & Conquest Place culs-de-sac
Land Owner:	Private
PIN:	0254-02-J
Control Type	Quality
Drainage Area	267 acres
Receiving Waters	Horsepen Run

Description: The Fox Mill Estates community does not have existing stormwater controls. Regrade eroded streambanks and vegetate with floodplain vegetation. Restore channel with several rock vanes.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality in downstream waterbodies, stabilize streambanks, and improve both terrestrial and aquatic wildlife habitats.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. Accessibility may be difficult, as the project is surrounded by residential properties. No tree impacts or significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	125	\$40.00	\$5,000.00
Plantings	AC	0.63	\$25,000.00	\$15,750.00
Construct New Channel	LF	200	\$200.00	\$40,000.00
Additional Cost (first 500LF)	LF	200	\$200.00	\$40,000.00
Clear and Grub (Stream)	AC	0.1	\$10,000.00	\$1,000.00
Initial Project Costs				\$101,750.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$5,087.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$10,175.00
Base Construction Costs				\$117,012.50
<i>Mobilization (5%)</i>				\$5,850.63
Subtotal 1				\$122,863.13
<i>Contingency (25%)</i>				\$30,715.78
Subtotal 2				\$153,578.91
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$69,110.51
Total Costs				\$222,689.41
Estimated Project Costs				\$230,000.00

HC9202 Stream Restoration



Address: 2783 Prince Harold Court
Location: Between Quincy Adams Court,
Viking Court & Prince Harold
Court culs-de-sac
Land Owner: Private
PIN: 0254-02-B, 0254-08-A
Control Type Quality
Drainage Area 238 acres
Receiving Waters Horsepen Run

Description: This area has significant erosion. Regrade streambanks to connect to the floodplain and vegetate with floodplain vegetation. Install check dams to dissipate energy.



Project Area Map

Project Benefits: This project will reduce sediment and nutrient loadings, improve water quality, stabilize stream banks and improve the floodplain.

Project Design Considerations: Minimal environmental permitting requirements are anticipated. Additional permitting may be required for a project within a stream or wetland. Projects in RPAs may require exemptions or waivers. Accessibility is good from Viking Drive and Prince Harold Court, though not always close by. Tree impacts are expected. No significant construction issues are anticipated.

Costs:

<i>Item</i>	<i>Units</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total</i>
Organic Compost Soil Amendment	CY	430	\$40.00	\$17,200.00
Plantings	AC	2.13	\$25,000.00	\$53,250.00
RipRap Stabilization	SY	100	\$100.00	\$10,000.00
Construct New Channel	LF	1160	\$200.00	\$232,000.00
Additional Cost (first 500LF)	LF	500	\$200.00	\$100,000.00
Clear and Grub (Stream)	AC	2.13	\$10,000.00	\$21,300.00
Initial Project Costs				\$433,750.00
<i>Plantings: 5% of project costs (unless incl. as line item)</i>				\$0.00
<i>Ancillary Items: 5% of project cost</i>				\$21,687.50
<i>Erosion and Sediment Control: 10% of project costs</i>				\$43,375.00
Base Construction Costs				\$498,812.50
<i>Mobilization (5%)</i>				\$24,940.63
Subtotal 1				\$523,753.13
<i>Contingency (25%)</i>				\$130,938.28
Subtotal 2				\$654,691.41
<i>Engineering Design, Surveys, Land Acquisition, Utility</i>				
<i>Relocation and Permits (45%)</i>				\$294,611.13
Total Costs				\$949,302.54
Estimated Project Costs				\$950,000.00