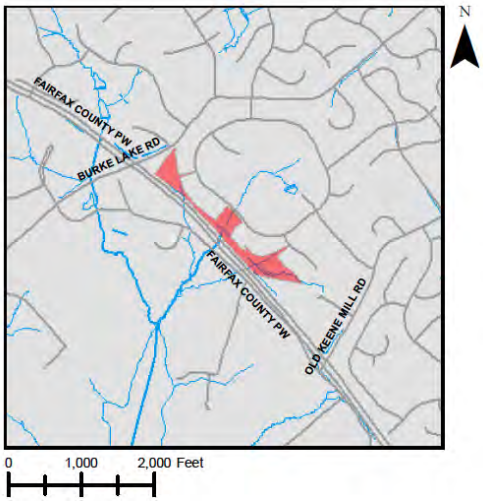
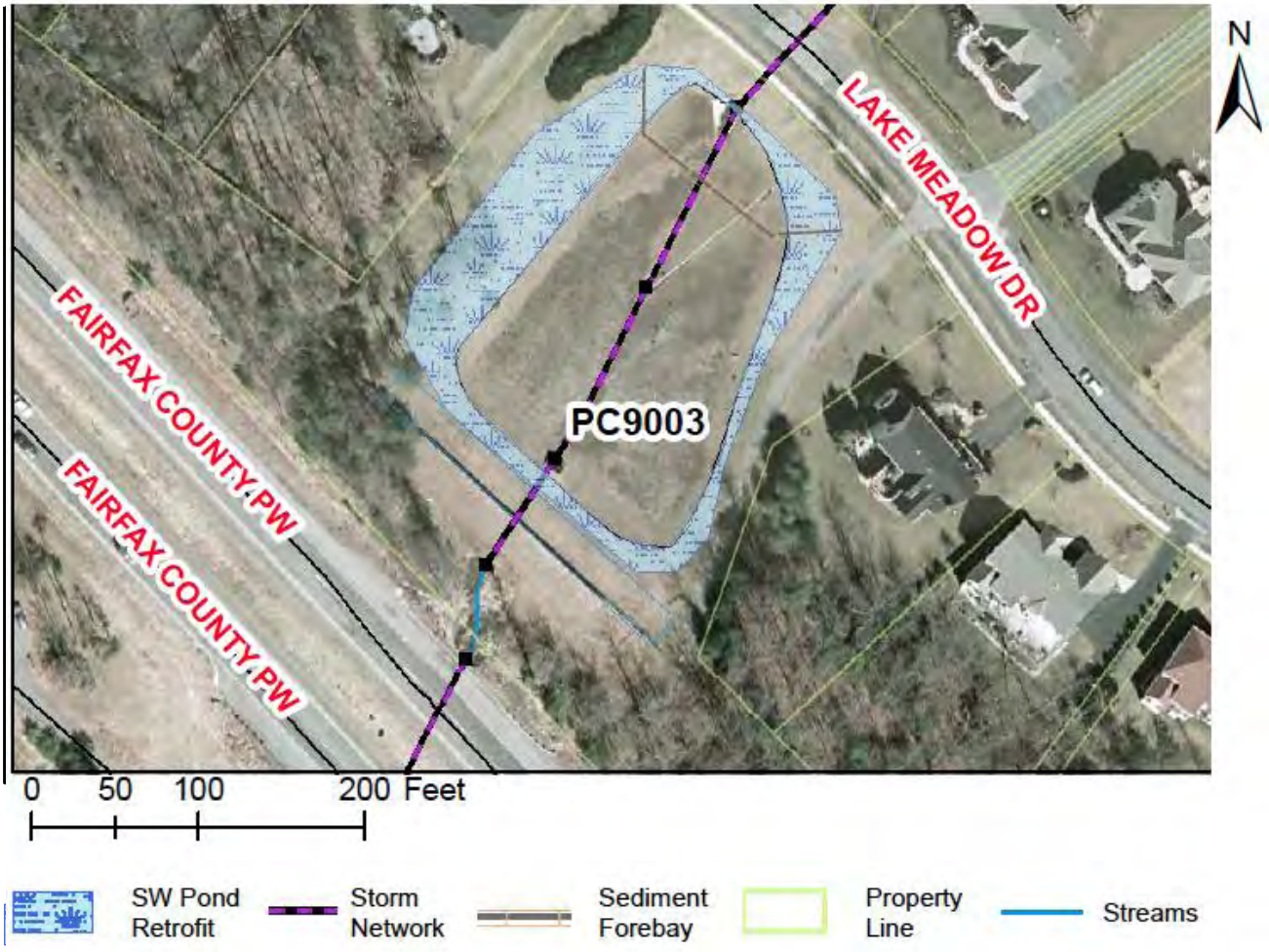
PC9003 Stormwater Pond Retrofit



Address: Next to 6424 Lake Meadow Dr., Burke, Virginia
Location: Regional pond near Lake Meadow Dr.
Land Owner: Private – Edgewater Land Bays 2&3 Homeowners Association
PIN: 0872 08 A
Control Type: Water quality and quantity control
Drainage Area: 18.22 acres
Receiving Waters: Tributary of South Run

Description: This project is an alternative to the regional pond P-03 Regional Pond P-03 which not been constructed. Instead a smaller neighborhood pond (0922DP) was built near the site of the proposed regional pond. This project proposes retrofitting this existing pond which is north of Fairfax County Parkway and south of Lake Meadow Drive, into a constructed wetland system with a sediment forebay and bench planting. This pond is upstream of another pond, and is located across Lake Meadow Drive. The primary problem indicators are poor wetland habitat and pollutants, including nitrogen, phosphorus and total suspended solids.



Project Benefits: The retrofit will increase the time that stormwater travels through the facility, which will increase pollutant particulate settlement and provide a better environment for biological uptake and microbial activity. Adding a permanent pool prevents resuspension of sediments and other pollutants. Also increasing the time stormwater stays in the facility will provide better channel protection. Lastly, installing the sediment forebay will reduce debris and coarse sediment in the facility and will reduce maintenance requirements. Below are the project's estimated pollutant removal amounts.

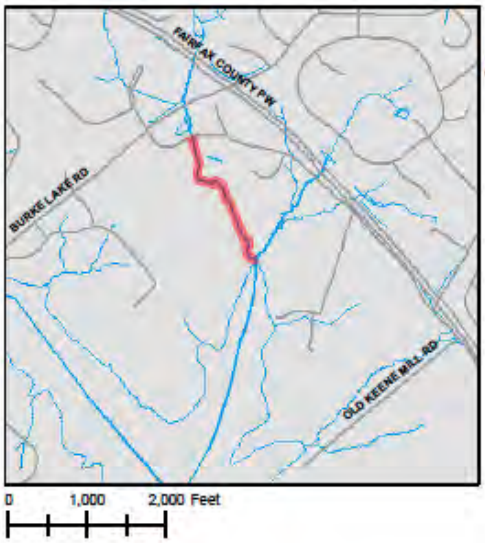
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.39	8.69	2.07

Project Design Considerations: Property is owned by local homeowners association, but is in a drainage easement, according to County records. The existing easement might have to be enlarged to allow facility to be expanded on the northwest side. (See project map.) Project is easily accessible and should not have any major impacts; however efforts should be made to minimize such impacts to existing mature vegetation. The sediment forebay should be 10% of the surface area of the pond. The aquatic bench should be planted 10 to 15' inward from top of bank. The vegetative buffer should be 10 to 15' outward from the top of bank. The existing concrete pilot channels should be removed.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.35	AC	$8,500	$2,975
Grading and Excavation	2350	CY	$35	$82,250
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	50	CY	$50	$2,500
Outflow Pipe	100	LF	$125	$12,500
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	300	CY	$40	$12,000
Plantings	1	LS	5%	$6,861
Ancillary Items	1	LS	5%	$6,861
Erosion and Sediment Control	1	LS	10%	$13,723
			Base Construction Cost	$164,670
			Mobilization (5%)	$8,234
			Subtotal 1	$172,904
			Contingency (25%)	$43,226
			Subtotal 2	$216,129
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$97,258
			Total	$313,388
			Estimated Project Cost	$320,000

PC9004 Stream Restoration Suite



Address: 10125 Lakehaven Court, Springfield, Virginia
Location: Roads – Lakehaven Court and Deckhand Drive
Land Owner: Private/Public –Accotink Unitarian Church, Fairfax County Park Authority, Common Wealth of Virginia Commision of Game and Inland Fisheries
PIN: 0872 01 0026, 0872 01 0029, 0874 01 0003
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of South Run

Description: This project suite is a proposed alternative to Regional Pond P-04, which was proposed upstream (northwest) of Burke Lake but was not constructed. Subproject A is the stabilization of the stream northwest of Burke Lake. This project proposes repairing bank and bed erosion to restore channel morphology. The stream stabilization will reduce sediment loads to Burke Lake maintaining the capacity of the stream and controlling unwanted meander. This project is critical due to its impact on Burke Lake. Subproject B proposes removing an obstruction farther upstream of Burke Lake. This obstruction was verified during field verification. Removing the obstruction will help restore the stream channel to its natural conditions and improve the function of the stream.

Project Benefits: The stream stabilization will reduce sediment loads to the stream, maintaining the capacity of the stream and controlling unwanted meander. Removing the obstruction will help restore the stream channel to its natural conditions and improve the function of the stream. This suite of projects will help to return the stream to its natural condition and reduce pollutant loads and erosion. Below are the project's estimated pollutant removal amounts.

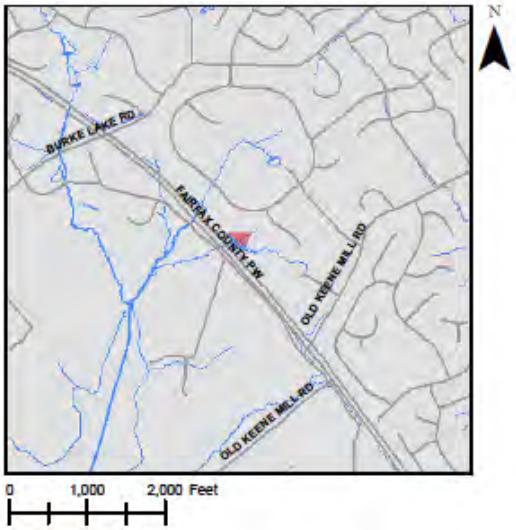
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
19.92	31.88	12.35

Project Design Considerations: Obstruction removal is on private residential property. Records show a storm drainage easement is located along Burke Lake Road at the entrance of the stream with the obstruction. Stream for restoration is located on property that is both publicly and privately owned. Efforts should be made to minimize impacts to mature vegetation.

Cost:

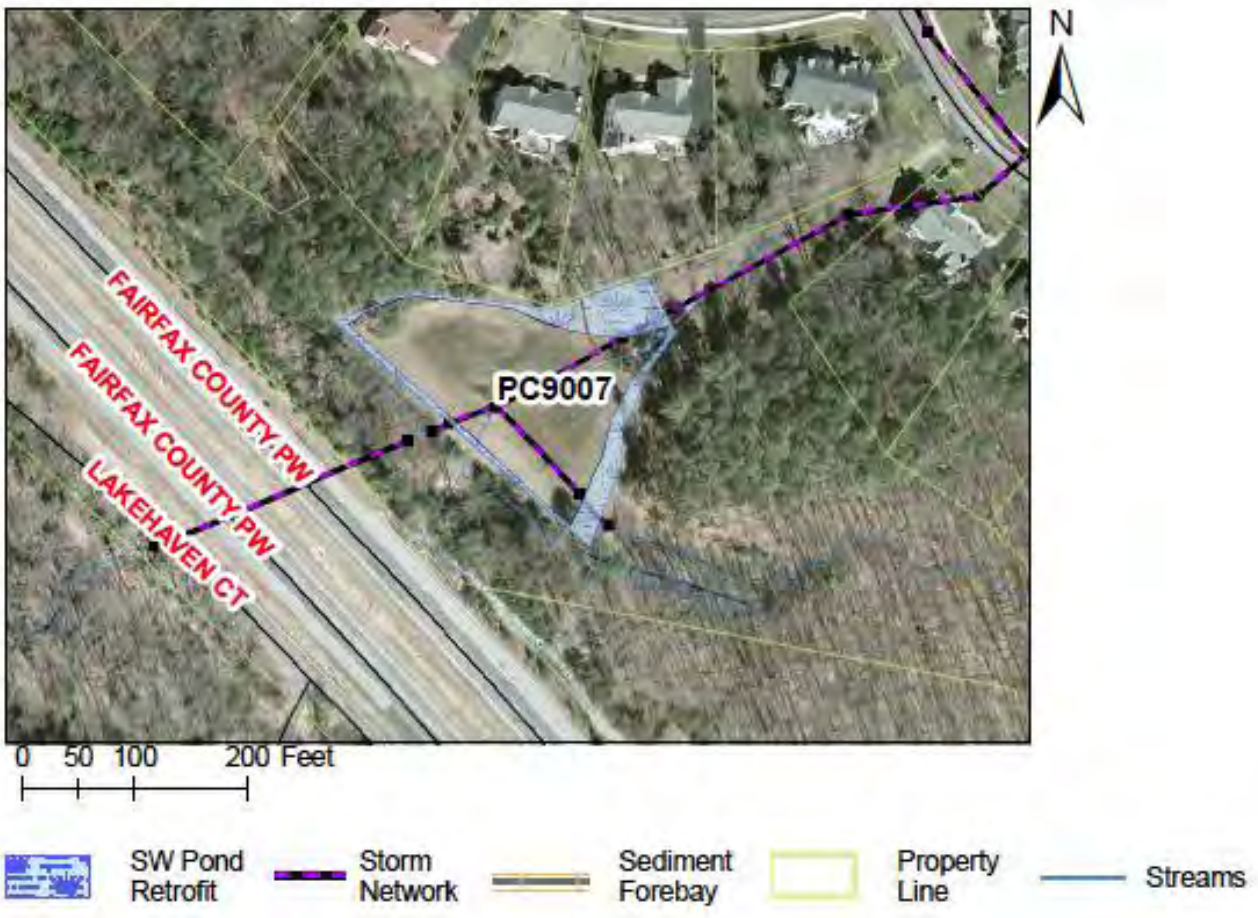
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Subproject A	Stream Restoration East of Pohick Ct.			
Construct New Channel	2026	LF	$200	$405,200
Clear and Grub	2.73	AC	$10,000	$27,300
Plantings	2.73	AC	$25,000	$68,250
Additional Cost, First 500 LF	500	LF	$200	$100,000
Erosion and Sediment Control	1	LS	10%	$60,075
Ancillary Items	1	LS	5%	$30,038
Subproject B	Obstruction Removal Near Lakehaven La.			
Obstruction Removal	1	LS	$5,250	$5,250
			Base Construction Cost	$696,113
			Mobilization (5%)	$34,806
			Subtotal 1	$730,918
			Contingency (25%)	$182,730
			Subtotal 2	$913,648
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$411,141
			Total	$1,324,789
			Estimated Project Cost	$1,330,000

PC9007 Stormwater Pond Retrofit



Address: Behind 6416 Lake Meadow Dr., Burke, Virginia
Location: Northeast of regional pond #3 behind Lake Meadow Dr.
Land Owner: Private – Edgewater Land Bay 2 & 3 Homeowners Association
PIN: 0872 08 A
Control Type: Water quality and quantity control
Drainage Area: 25.26 acres
Receiving Waters: Tributary of South Run

Description: This project proposes retrofitting an existing neighborhood pond (0956DP) as an alternative to Regional Pond P-07, which was not constructed. The existing neighborhood pond is upstream of where Regional Pond P-04 was originally proposed. The pond is northeast of Fairfax County Parkway and receives runoff from adjacent neighborhoods. This project proposes to retrofit the pond to create a wetland system with a sediment forebay and bench planting. The sediment forebay will provide pretreatment of stormwater runoff and the bench planting will increase pollutant removal. The primary indicators are wetland habitat and pollutants, including nitrogen, phosphorus and total suspended solids.



Project Benefits: The retrofit will increase pollutant removal and provide adequate channel protection above the permanent pool. The retrofit will create a better functioning environment for gravitational settling, biological uptake and microbial activity. Below are the project's estimated pollutant removal amounts.

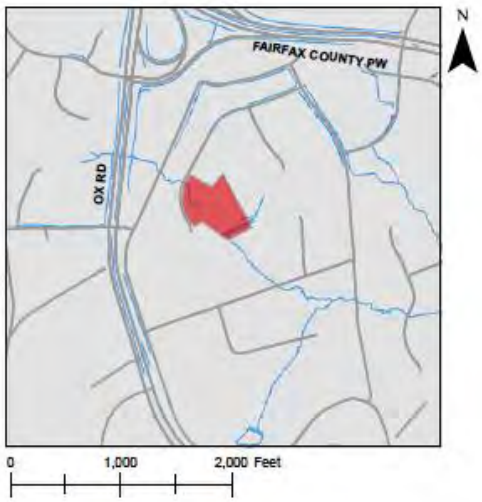
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.89	15.17	3.76

Project Design Considerations: Pond is located within a stormwater easement on private property. Additional easements may be required to prevent loss of existing mature vegetation. The sediment forebay should be no less than 10% of the size of the pond. The aquatic bench should be planted 10-15' inward from the water's edge. The vegetative buffer should be 10 to 15' outward from the water's edge. Effort should be made to minimize impacts to existing mature vegetation. Adjacent property owner said swale leading from his property to dry pond has eroded significantly. Rip rap and check dams have been placed in swale recently. Project will also address swale leading into the pond.

Cost:

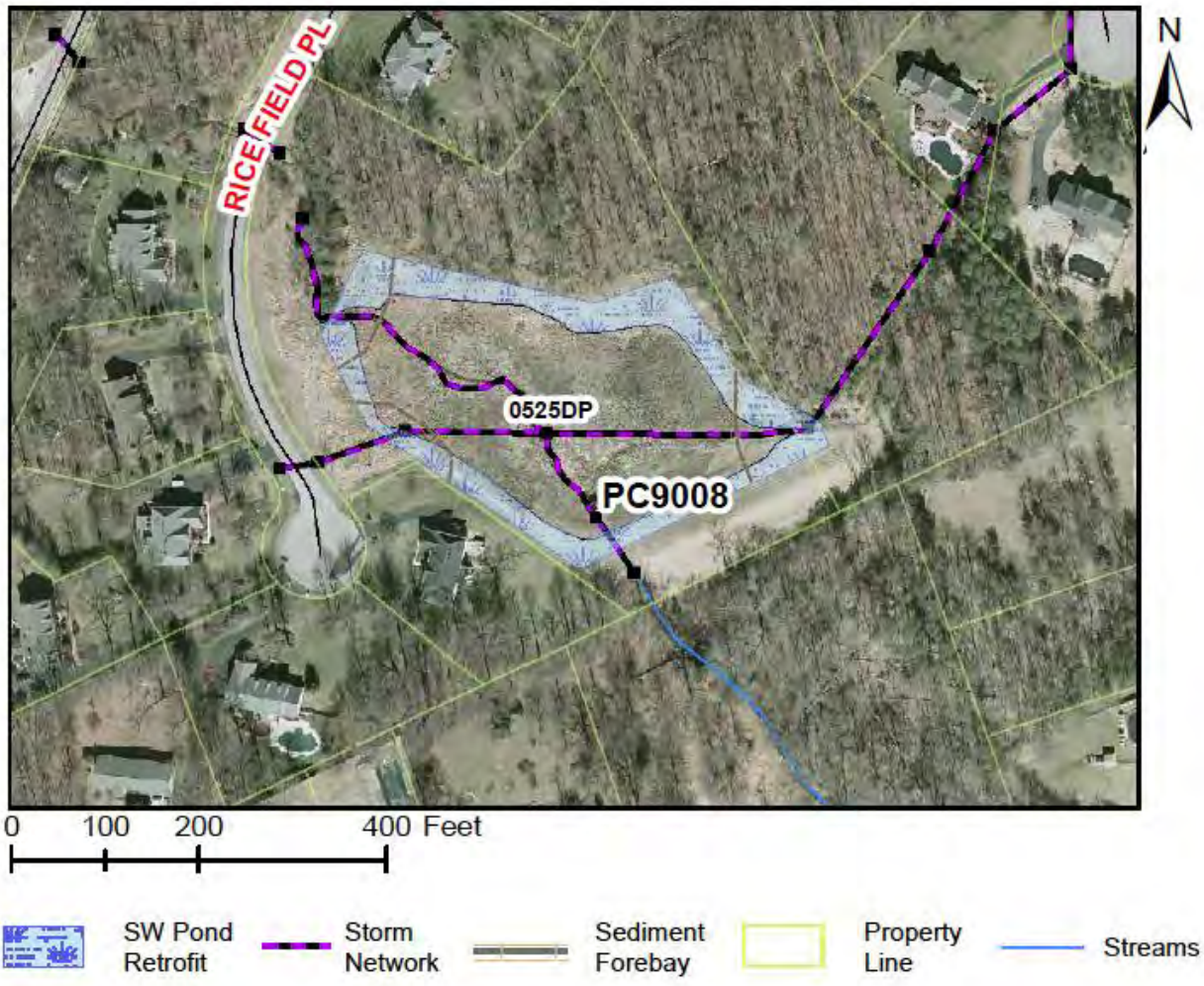
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.2	AC	$8,500	$1,700
Grading and Excavation	1300	CY	$35	$45,500
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	60	CY	$50	$3,000
Outflow Pipe	75	LF	$125	$9,375
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	160	CY	$40	$6,400
Plantings	1	LS	5%	$4,549
Ancillary Items	1	LS	5%	$4,549
Erosion and Sediment Control	1	LS	10%	$9,098
			Base Construction Cost	$109,170
			Mobilization (5%)	$5,459
			Subtotal 1	$114,629
			Contingency (25%)	$28,657
			Subtotal 2	$143,286
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$64,479
			Total	$207,764
			Estimated Project Cost	$210,000

PC9008 Stormwater Pond Retrofit



Address: Next to 10995 Rice Field Pl, Fairfax Station, Virginia
Location: Wet Pond near Rice Field Pl
Land Owner: Private – Private Owner
PIN: 0773 12 A1, 0773 12 C
Control Type: Water quality and quantity control
Drainage Area: 121.67 acres
Receiving Waters: Tributary of South Run

Description: This project is a proposed supplement to the existing Regional Pond P-05 (0525DP) and will retrofit the pond into an extended detention dry pond with sediment forebays and additional planting. The pond is located southeast of Rice Field Place. The primary indicators are wetland habitat and pollutants, including nitrogen, phosphorus and total suspended solids. The pond collects runoff from a large drainage area that is mostly single-family residential development and roadways.



Project Benefits: This pond retrofit will result in estimated 17.20 lbs/year of additional phosphorus removal. Extending the detention time of water in the pond will provide better downstream channel protection, create a better functioning environment for gravitational settling of pollutant particulates, increase biological uptake of polluntants and increase stormwater infiltration. Lastly, adding the the sediment forebays will prevent debris and coarse sediment from entering the pond and will reduce maintenance. Below are the project's estimated pollutant removal amounts.

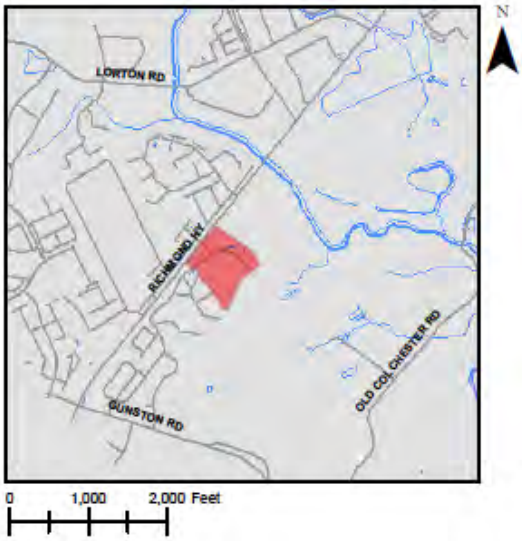
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
3.99	75.99	17.20

Project Design Considerations: Three separate systems outfall into the pond. All outfalls will have a forebay installed to collect coarse sediments and debris. The pond outfalls into a stream at the south end. Pond is easily accessible because it is close to a roadway and access will not impact vegetation. Pond is on private property. Records show no onsite drainage easements. Pond can expand on all sides, especially to the north. (See project map.) Retrofit should not require significant tree removal. The sediment forebays should account for approximately 10% of the pond area. The vegetative buffer should be 10-15' off of the top of bank.

Cost:

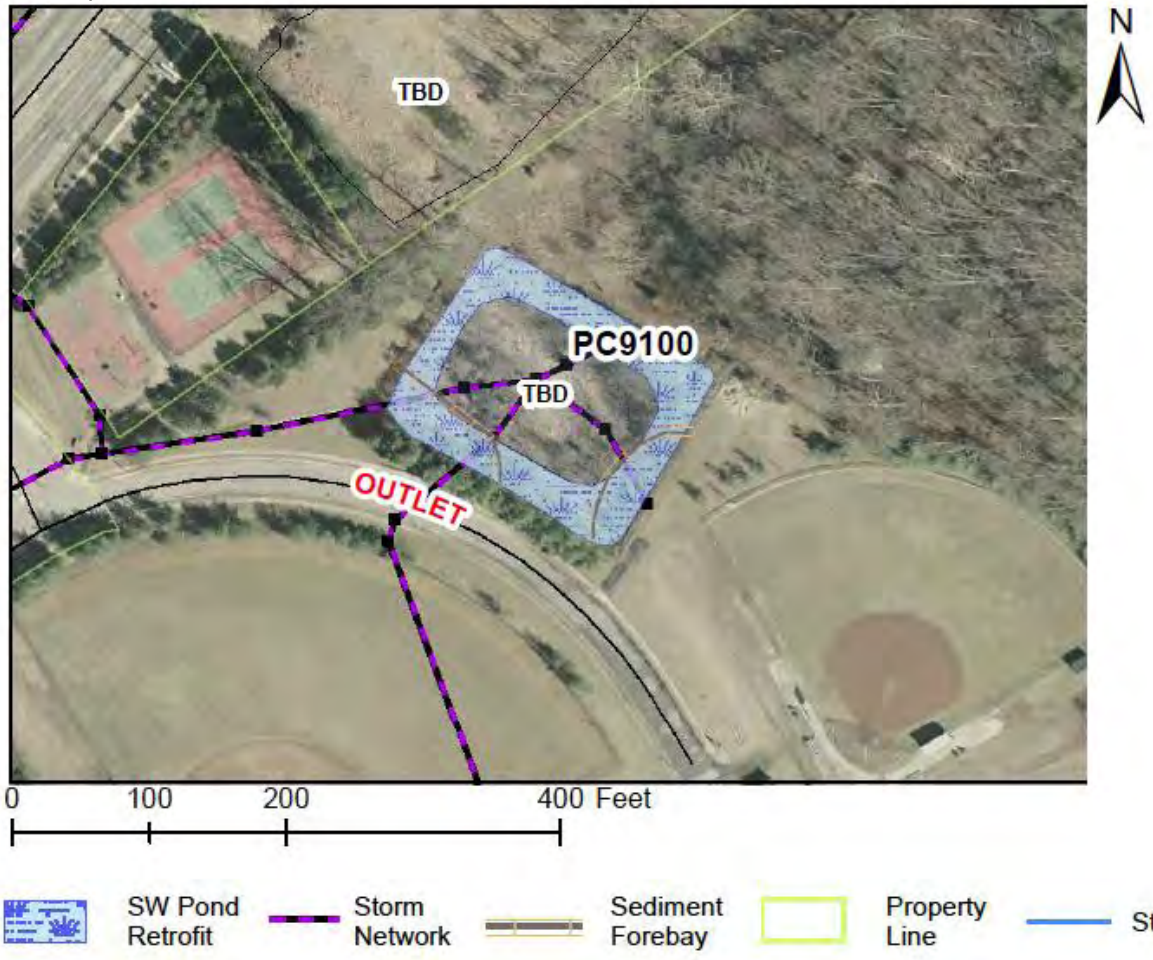
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.8	AC	$8,500	$6,800
Grading and Excavation	5000	CY	$35	$175,000
Structural BMP Retrofit and Incidentals	1	LS	$20,000	$20,000
Embankment	100	CY	$50	$5,000
Outflow Pipe	100	LF	$125	$12,500
Rip Rap Stabilization	200	SY	$100	$20,000
Organic Compost Soil Amendment	635	CY	$40	$25,400
Plantings	1	LS	5%	$13,235
Ancillary Items	1	LS	5%	$13,235
Erosion and Sediment Control	1	LS	10%	$26,470
			Base Construction Cost	$317,640
			Mobilization (5%)	$15,882
			Subtotal 1	$333,522
			Contingency (25%)	$83,381
			Subtotal 2	$416,903
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$187,606
			Total	$604,509
			Estimated Project Cost	$610,000

PC9100 Stormwater Pond Retrofit



Address: 9515 Richmond Highway, Lorton, Virginia
Location: Lorton Athletic Fields
Land Owner: Public/Local – Fairfax County Government
PIN: 1074 01 0031
Control Type: Water quality and quantity control
Drainage Area: 11.50 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofit of an existing pond to create an extended detention dry pond with sediment forebays at the Lorton Athletic Fields near Richmond Highway in Lorton. Two forebays will be created around the inlet areas and the pond can be expanded on all sides, especially to the northeast. The pond's detention time will be increased by modifiying the existing discharge structure and increasing the pond's storage. The primary indicators are pollutants including phosphorus, nitrogen and total suspended solids. The pond collects runoff through a closed system from on-site fields and tennis courts, Richmond Highway, and from dense residential developments south of the site.



Project Benefits: An estimated 1.30 lbs/year of phosphorus will be removed. Increasing the time the water stays in the pond before outfalling into adjacent wooded area, will provide better downstream channel protection and promote pollutant settlement. (See hatched area on project map.) Installing the sediment forebays will collect debris and sediment that can reduce a facility's infiltration rate. This project will also increase the biological uptake of pollutants. Below are the project's estimated pollutant removal amounts.

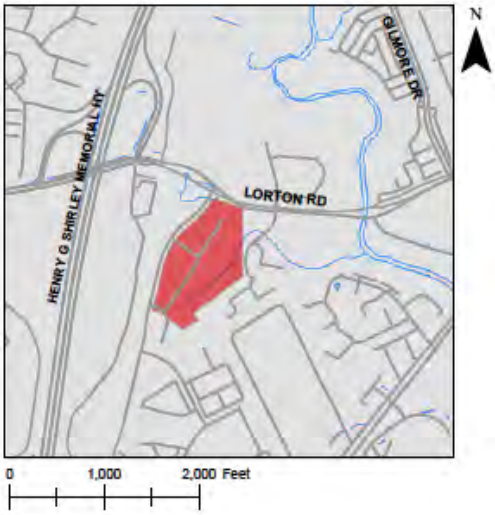
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.74	4.76	1.30

Project Design Considerations: This project is located on Fairfax County property. The pond is in a fenced in area and there is space available for expansion without impacting playing fields. The pond can expand on every side, especially to the northwest. The sediment forebays should account for approximately 10% of the pond area. The vegetative buffer should be 10-15' off of the top of bank. The pond expansion will preserve mature vegetation as much as possible.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.35	AC	$8,500	$2,975
Grading and Excavation	2260	CY	$35	$79,100
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	60	CY	$50	$3,000
Outflow Pipe	100	LF	$125	$12,500
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	280	CY	$40	$11,200
Plantings	1	LS	5%	$6,439
Ancillary Items	1	LS	5%	$6,439
Erosion and Sediment Control	1	LS	10%	$12,878
			Base Construction Cost	$154,530
			Mobilization (5%)	$7,727
			Subtotal 1	$162,257
			Contingency (25%)	$40,564
			Subtotal 2	$202,821
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$91,269
			Total	$294,090
			Estimated Project Cost	$300,000

PC9101 Stormwater Pond Retrofit



Address: 9409 Lorton Market St., Lorton, Virginia
Location: Lorton Marketplace Shopping Center
Land Owner: Private – Columbia Lorton Station Marketplace LLC
PIN: 1074 23 E8
Control Type: Water quality and quantity control
Drainage Area: 7.60 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofitting of an existing pond to create an extended detention dry pond with a sediment forebay at 9409 Lorton Market St. (Lorton Marketplace Shopping Center). The primary indicators are pollutants including nitrogen, phosphorus and total suspended solids. The existing discharge structure will be modified to increase the amount of time water is detained in the pond. The existing concrete pilot channels will be removed to promote infiltration of low flows which can have high concentrations of pollutants.

Project Benefits: An estimated 2.43 lbs/year of phosphorus will be removed. Extending the pond detention time will provide better downstream channel protection and promote settlement of particulate pollutants. Installing the sediment forebay will reduce debris and coarse sediment in the pond, which will reduce pond maintenance. Installing the sediment forebay, removing the concrete pilot channels, and the landscaping improvements will improve the ponds infiltration. Below are the project's estimated pollutant removal amounts.

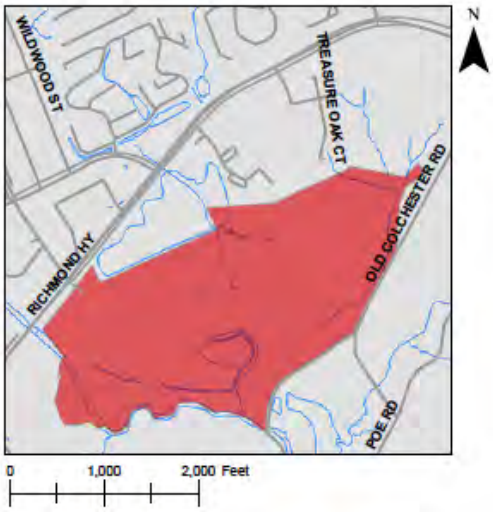
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.75	16.27	2.43

Project Design Considerations: Pond receives direct runoff from shopping center area. Pond has room for expansion. (See the project map). County records show this pond's name is to be determined (TBD). This might explain why GIS does not show an outfall from the pond. Pond is on private property but it is entirely within a storm drainage easement. The sediment forebay should account for approximately 10% of the pond area. The vegetative buffer should be 10-15' off of the top of bank. Efforts should be made to minimize impacts to existing mature vegetation.

Cost:

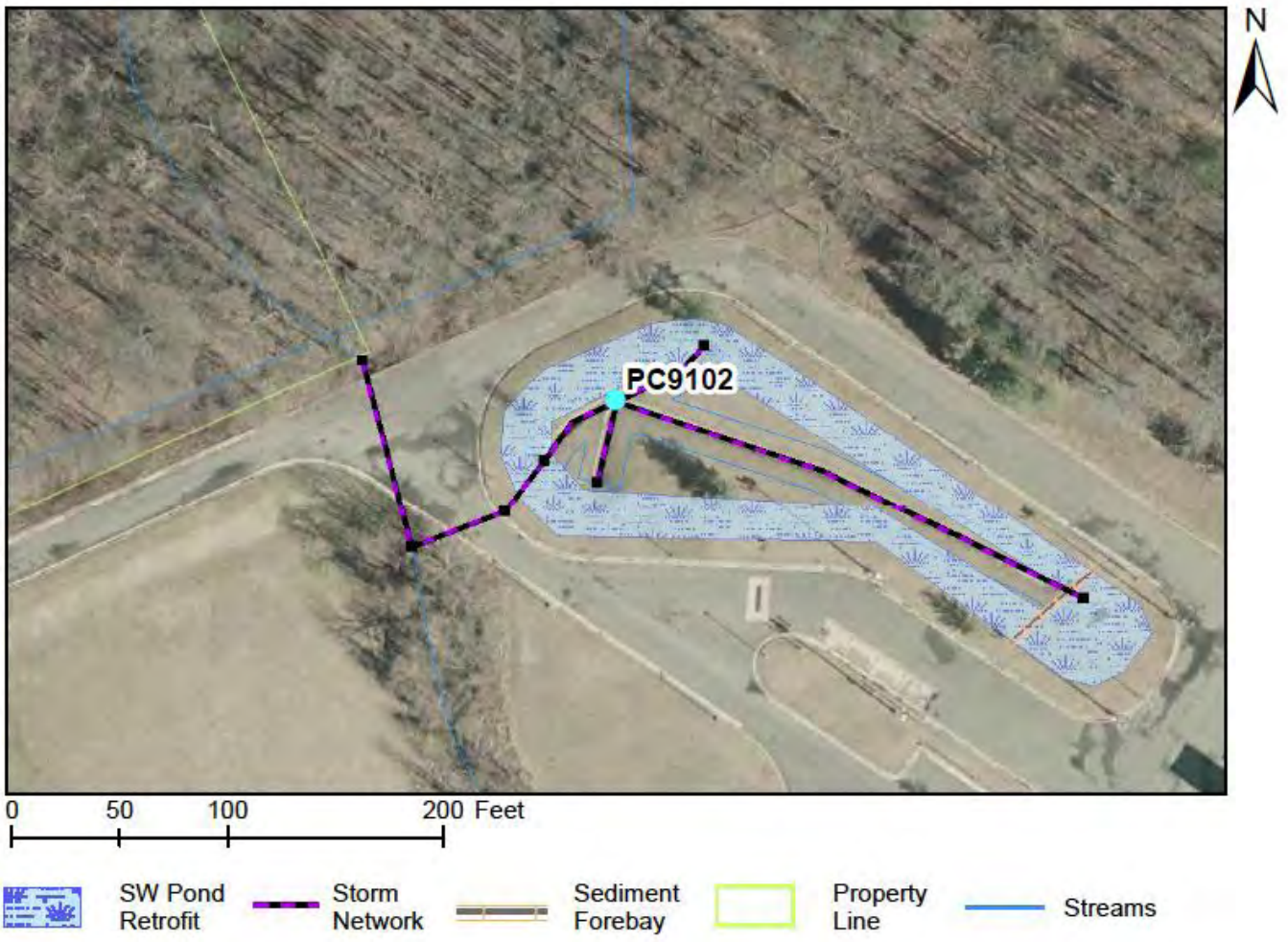
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.4	AC	$8,500	$3,400
Grading and Excavation	2000	CY	$35	$70,000
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	40	CY	$50	$2,000
Outflow Pipe	100	LF	$125	$12,500
Rip Rap Stabilization	75	SY	$100	$7,500
Organic Compost Soil Amendment	300	CY	$40	$12,000
Plantings	1	LS	5%	$5,870
Ancillary Items	1	LS	5%	$5,870
Erosion and Sediment Control	1	LS	10%	$11,740
			Base Construction Cost	$140,880
			Mobilization (5%)	$7,044
			Subtotal 1	$147,924
			Contingency (25%)	$36,981
			Subtotal 2	$184,905
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$83,207
			Total	$268,112
			Estimated Project Cost	$270,000

PC9102 Stormwater Pond Retrofit



Address: 9399 Richmond Highway, Lorton, Virginia
Location: Norman M. Cole WWTP
Land Owner: Public/Local – Fairfax County Government
PIN: 1083 01 0023
Control Type: Water quality and quantity control
Drainage Area: 12.60 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofit of an existing dry pond to create an extended detention basin with a sediment forebay at the Norman M. Cole Jr. Wastewater Treatment Plant. The retrofit will increase the detention time of stormwater runoff and will improve stormwater quality. The existing dry pond is located in the parking lot for the plant. The indicators were pollutants including nitrogen, phosphorus and total suspended solids.



Project Benefits: This retrofit will modify the existing pond to provide adequate downstream channel protection and allow for better function of temporary ponding using a control structure. This will promote the settling of particulate pollutants before discharging into the system. Below are the project's estimated pollutant removal amounts.

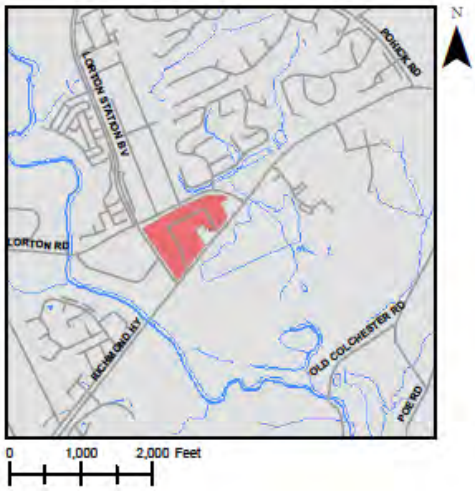
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
1.58	33.47	5.03

Project Design Considerations: The existing pond has concrete pilot channels. In smaller storms pollutants are concentrated in smaller flows and directed by the concrete channels to the outfall. This retrofit will remove the pilot channels, install sediment forebays, and add an aquatic bench. The two forebays will be approximately 10% of the pond area. The pond area will be expanded as shown on the project area map to allow the pond to provide extended detention of the stormwater to better treat the of stormwater runoff. The soil will be amended to improve infiltration. The island is located in the plant's main thoroughfare so a plan to maintain traffic during construction will be required.

Cost:

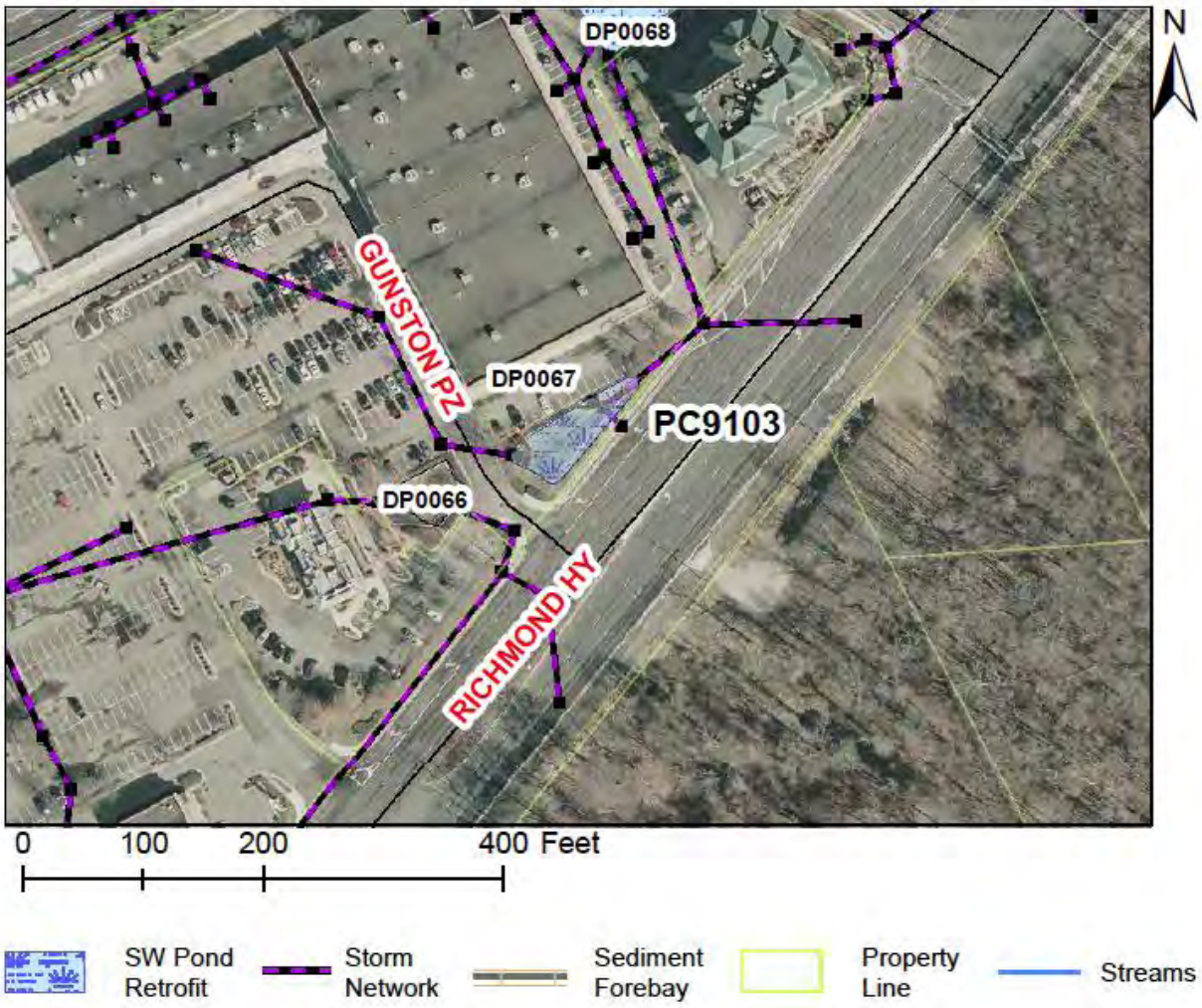
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.3	AC	$8,500	$2,550
Grading and Excavation	900	CY	$35	$31,500
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	25	CY	$50	$1,250
Outflow Pipe	100	LF	$125	$12,500
Rip Rap Stabilization	75	SY	$100	$7,500
Organic Compost Soil Amendment	240	CY	$40	$9,600
Plantings	1	LS	5%	$3,745
Ancillary Items	1	LS	5%	$3,745
Erosion and Sediment Control	1	LS	10%	$7,490
			Base Construction Cost	$89,880
			Mobilization (5%)	$4,494
			Subtotal 1	$94,374
			Contingency (25%)	$23,594
			Subtotal 2	$117,968
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$53,085
			Total	$171,053
			Estimated Project Cost	$180,000

PC9103 Stormwater Pond Retrofit



Address: 7665 Lorton Rd., Lorton, Virginia
Location: Gunston Shopping Plaza
Land Owner: Private – Gunston Station, LLC
PIN: 1074 03 0001B
Control Type: Water quality and quantity control
Drainage Area: 11.12 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofit of an existing pond to create an extended detention dry pond with sediment forebays at Gunston Plaza Shopping Center, northwest of Richmond Highway. The pond receives runoff from the shopping center and outfalls across Richmond Highway into wooded area. The indicators are pollutants including nitrogen, phosphorus and total suspended solids. The sediment forebays will provide pretreatment of stormwater runoff.



Project Benefits: An estimated 2.07 lbs/year of phosphorus will be removed. The retrofit will modify the existing pond to provide adequate downstream channel protection and allow for better function of temporary ponding using a control structure, which enables particulate pollutants to settle out before entering the system and controls the outfall volume. Below are the project's estimated pollutant removal amounts.

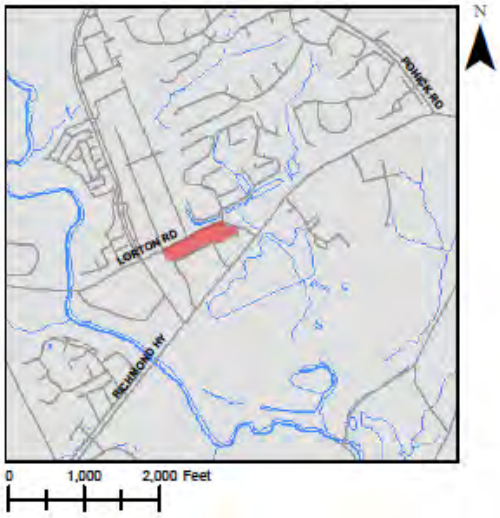
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.81	14.64	2.17

Project Design Considerations: Based on field observations, it appears the depth of the dry pond has significantly decreased due to sediment deposition in the pond area. The hatched area shown on the project map should have sediment removed to increase detention volume. Location has space limitations and no room for any expansion. All retrofitting will need to be inside of the existing pond area. Property is owned by Gunston Station, LLC. Records show no existing easements onsite. Area is too small to have sufficient vegetative buffer. The sediment forebays should account for approximately 10% of the pond area.

Cost:

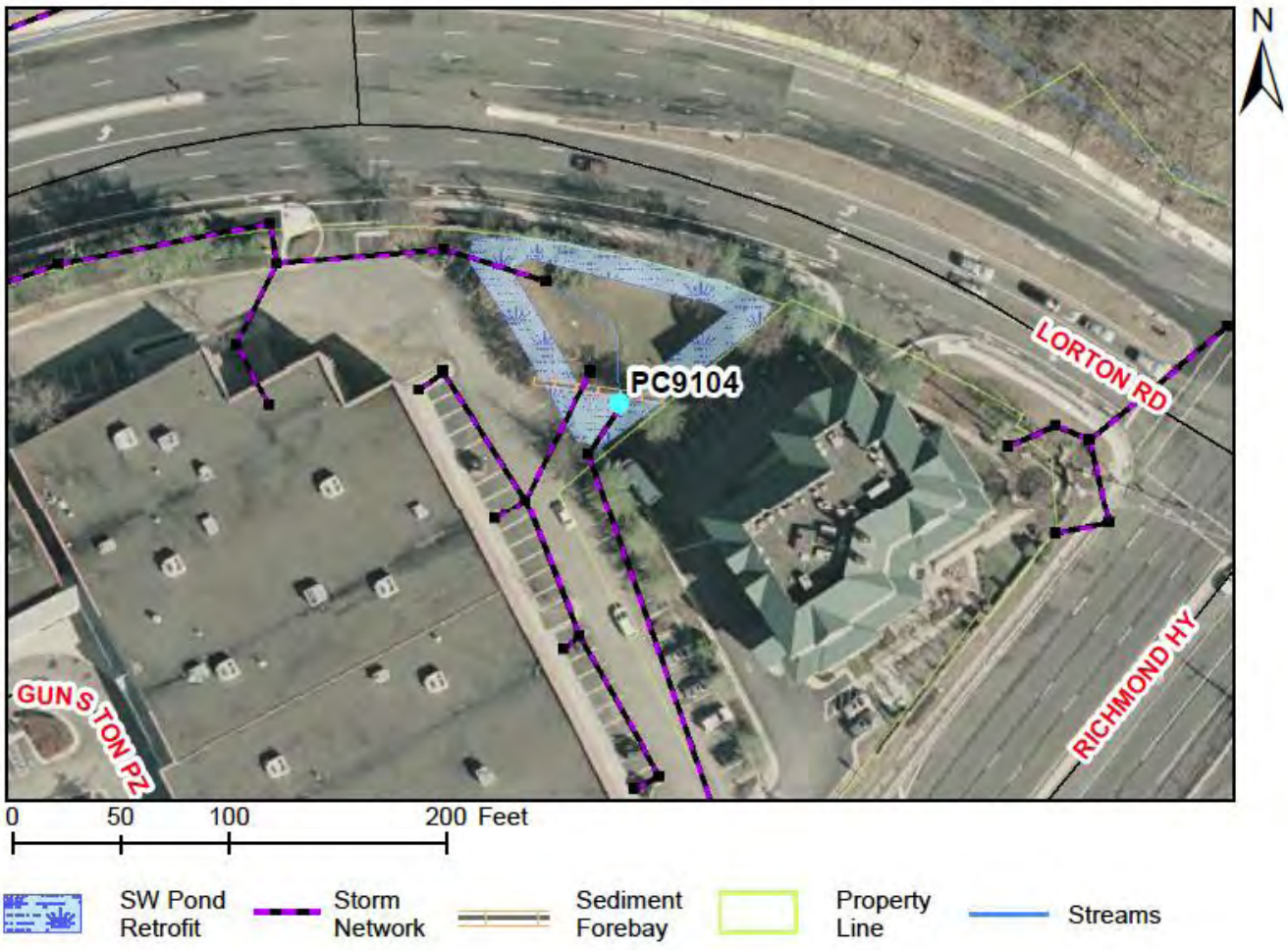
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.08	AC	$8,500	$680
Grading and Excavation	500	CY	$35	$17,500
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	40	CY	$50	$2,000
Outflow Pipe	50	LF	$125	$6,250
Rip Rap Stabilization	75	SY	$100	$7,500
Organic Compost Soil Amendment	140	CY	$40	$5,600
Plantings	1	LS	5%	$2,477
Ancillary Items	1	LS	5%	$2,477
Erosion and Sediment Control	1	LS	10%	$4,953
			Base Construction Cost	$59,436
			Mobilization (5%)	$2,972
			Subtotal 1	$62,408
			Contingency (25%)	$15,602
			Subtotal 2	$78,010
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$35,104
			Total	$113,114
			Estimated Project Cost	$120,000

PC9104 Stormwater Pond Retrofit



Address: 7665 Lorton Road, Lorton, Virginia
Location: Gunston Shopping Plaza
Land Owner: Private – Gunston Station LLC.
PIN: 1074 03 0001B
Control Type: Water quality and quantity control
Drainage Area: 4.97 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofit of an existing pond to create an extended detention dry pond with sediment forebays at Gunston Plaza Shopping Center south of Lorton Road and northwest of Richmond Highway. The pond receives runoff from the shopping center and Lorton Road. The indicators are pollutants including nitrogen, phosphorus and total suspended solids. The retrofit will modify the existing pond to provide adequate downstream channel protection. This will allow for better function of temporary ponding using a control structure, which enables particulate pollutants to settle out before entering the system.



Project Benefits: This project will add a sediment forebay to the pond which will reduce sediment and debris. Also, enlarging the pond and modifying the existing outfall structure will increase the stormwater detention time. This allows more time for pollutants to settle and will increase biological uptake. An estimated 0.98 lbs/year of additional phosphorus will be removed after this retrofit. Below are the project's estimated pollutant removal amounts.

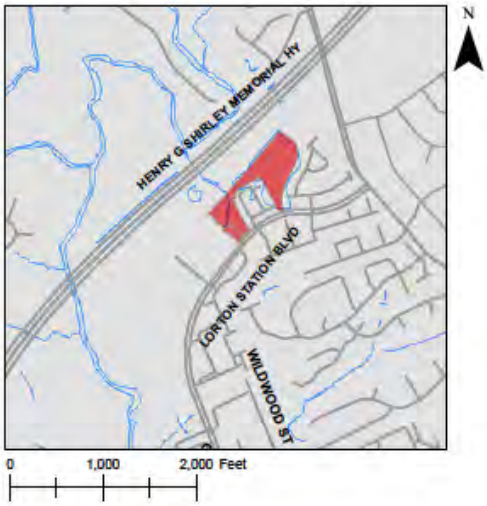
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.38	6.60	0.98

Project Design Considerations: Pond receives runoff from a large parking lot and building. The pond has three inflows and will require two sediment forebays. The sediment forebays should be sized to be about 10% of the size of the pond area. The size of the pond is limited due to constraints on all four sides. Available head difference in the pond needs to be determined from the construction plans. Records show no storm drain easements. Construction of sediment forebays alone and regular maintenance will help improve stormwater quality.

Cost:

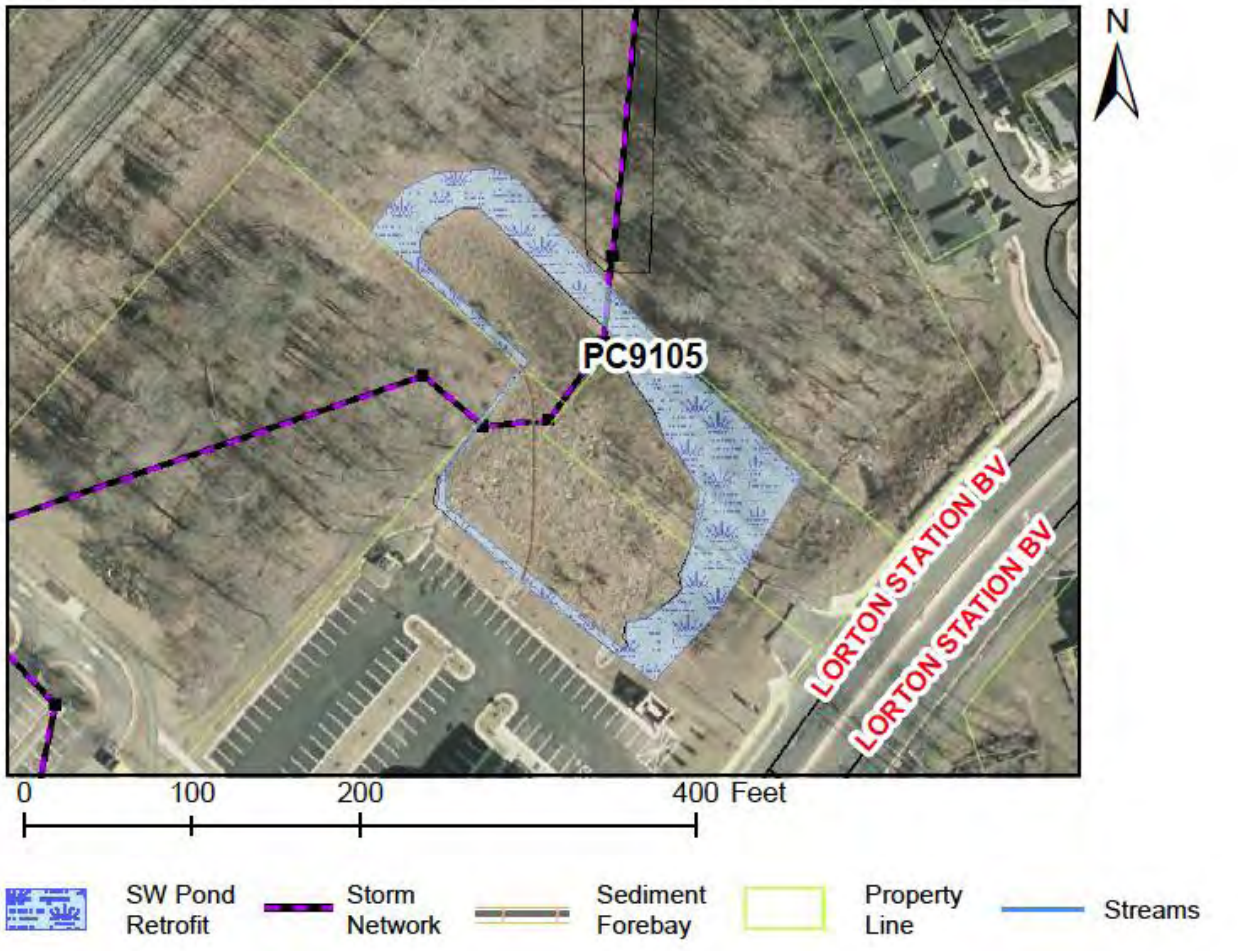
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.1	AC	$8,500	$850
Grading and Excavation	630	CY	$35	$22,050
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	25	CY	$50	$1,250
Outflow Pipe	50	LF	$125	$6,250
Rip Rap Stabilization	75	SY	$100	$7,500
Organic Compost Soil Amendment	80	CY	$40	$3,200
Plantings	1	LS	5%	$2,555
Ancillary Items	1	LS	5%	$2,555
Erosion and Sediment Control	1	LS	10%	$5,110
			Base Construction Cost	$61,320
			Mobilization (5%)	$3,066
			Subtotal 1	$64,386
			Contingency (25%)	$16,097
			Subtotal 2	$80,483
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$36,217
			Total	$116,700
			Estimated Project Cost	$120,000

PC9105 Stormwater Pond Retrofit



Address: Near intersection of Lorton Station Blvd & Milford Haven Dr. (Behind 7747 Milford Haven Ct), Lorton, Virginia
Location: Stormwater Pond near Lorton Station Blvd & Milford Haven Dr.
Land Owner: Private – Laurel Hill Site Center LLC, Lorton Station Community Association, South Station LLC
PIN: 1072 01 0048A, 1072 01 0048B, 1072 01 0049
Control Type: Water quality and quantity control
Drainage Area: 21.76 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofit of an existing dry pond northwest of Lorton Station Boulevard to create an extended detention dry pond with a sediment forebay. The pond's existing discharge structure will be modified to increase the pond's detention time, and the pond's size will be enlarged to handle the longer detention time. Primary indicators are pollutants, including nitrogen, phosphorus and total suspended solids. Pond collects runoff from dense residential development and highly impervious commerical areas. The pond outfalls to the north and is conveyed in a concrete swale under a railroad track before discharging into a wooded area. The large majority of the drainage area is impervious.



Project Benefits: Extending this pond's detention time will provide better downstream channel protection, promote particulate pollutant settlement, increase stormwater infiltration, and increase biological uptake of pollutants. Additional plantings will create a better functioning buffer to the pond. The forebay will prevent coarse sediments and debris from entering the pond and will reduce maintenance. Below are the project's estimated pollutant removal amounts.

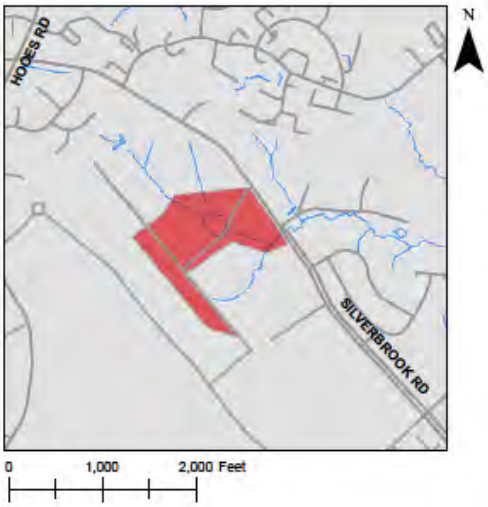
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
2.50	37.55	5.88

Project Design Considerations: Extending the detention time of the existng dry pond 1158DP will require expanding the pond into the wooded area. Efforts should be made to minimize impacts to existing mature vegetation. See hatched area on map. The sediment forebay should account for approximately 10% of the pond area. The vegetative buffer should be 10-15' off of the top of bank. The majority of the land the pond is located on is owned by Lorton Station Community Association, but pond is also located on land owned by Laurel Hill Site Center LLC and South Station LLC. Records show the pond is located in an existing storm drain easement. This easement will need to be enlarged for the pond retrofit. This project outfalls to another proposed project, outfall improvement PC9701. Coordination of these projects should be investigated to determine cost savings.

Cost:

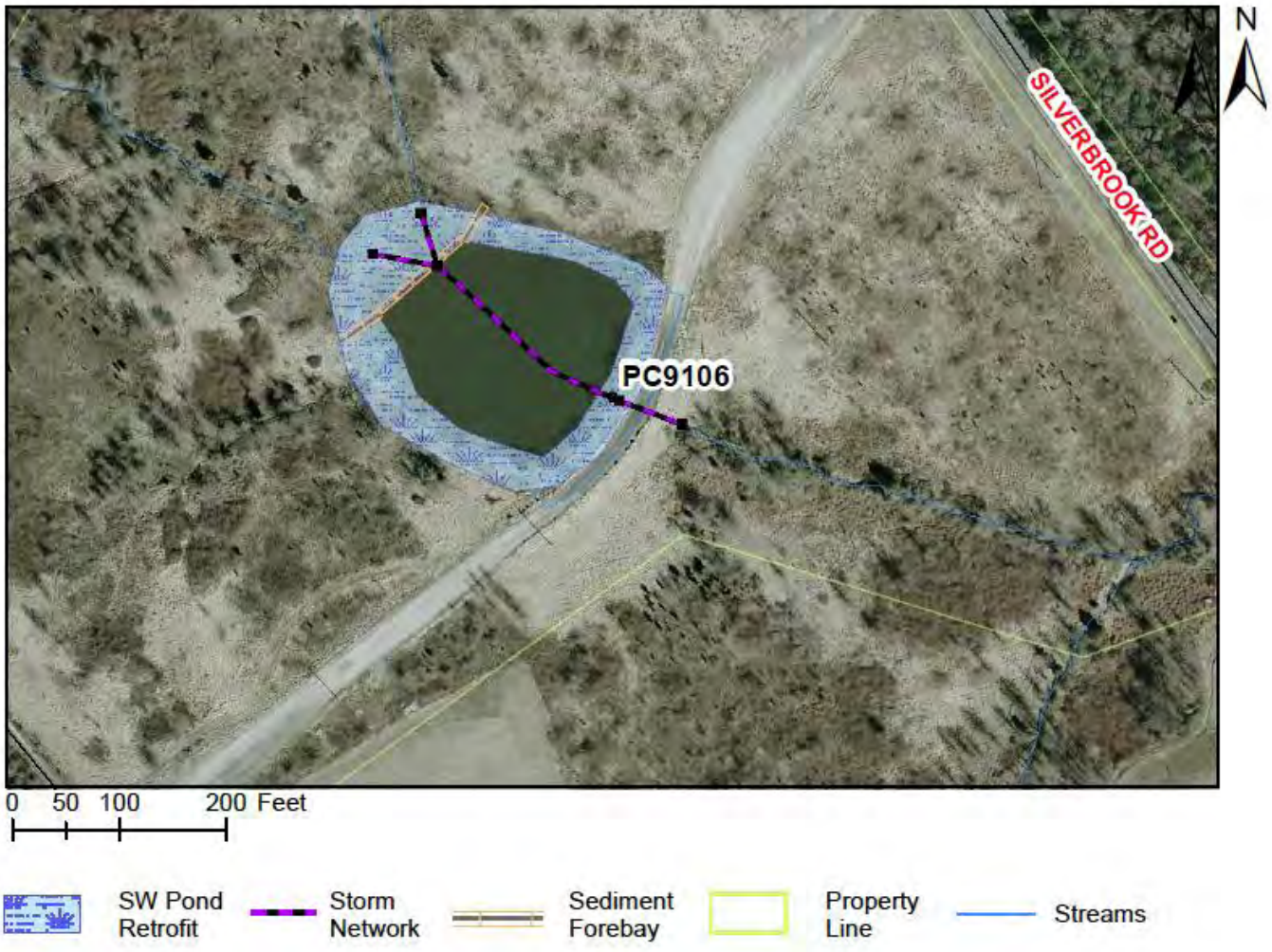
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.35	AC	$8,500	$2,975
Grading and Excavation	2300	CY	$35	$80,500
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	60	CY	$50	$3,000
Outflow Pipe	75	LF	$125	$9,375
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	290	CY	$40	$11,600
Plantings	1	LS	5%	$6,623
Ancillary Items	1	LS	5%	$6,623
Erosion and Sediment Control	1	LS	10%	$13,245
			Base Construction Cost	$158,940
			Mobilization (5%)	$7,947
			Subtotal 1	$166,887
			Contingency (25%)	$41,722
			Subtotal 2	$208,609
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$93,874
			Total	$302,483
			Estimated Project Cost	$310,000

PC9106 Stormwater Pond Retrofit



Address: 8501 Silverbrook Road, Lorton, Virginia
Location: South County Secondary School
Land Owner: Public/Local – Fairfax County Park Authority
PIN: 1073 01 0019
Control Type: Water quality and quantity control
Drainage Area: 40.23 acres
Receiving Waters: Tributary of Silver Brook

Description: Wet pond retrofit planned near South County Secondary School. Pond is set back from main road. This project proposes creating wetland system with the construction of a sediment forebay and the addition of bench planting. The primary indicators are wetland habitat and pollutants, including nitrogen, phosphorus and total suspended solids.



Project Benefits: This retrofit will increase pollutant removal and provide adequate channel protection above the permanent pool. The retrofit will create a better functioning environment for gravitational settling, biological uptake and microbial reliable pollutant removal performance. Below are the project's estimated pollutant removal amounts.

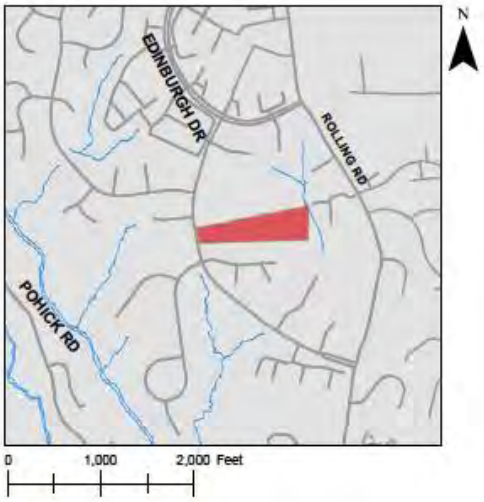
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
3.73	58.51	15.80

Project Design Considerations: Project is at an existing wet pond. The pond has an unpaved access road from the main road and is easily accessible. Construction should not impact existing mature vegetation, but efforts should be made to minimize disturbance. Forebay should be constructed at the northwest side and will be approximately 10% of the size of the pond. Forebay will be around both inlet pipes to the pond. A safety bench 10' to 15' outward and an aquatic bench 10' to 15' inward from the water's edge should be constructed.

Cost:

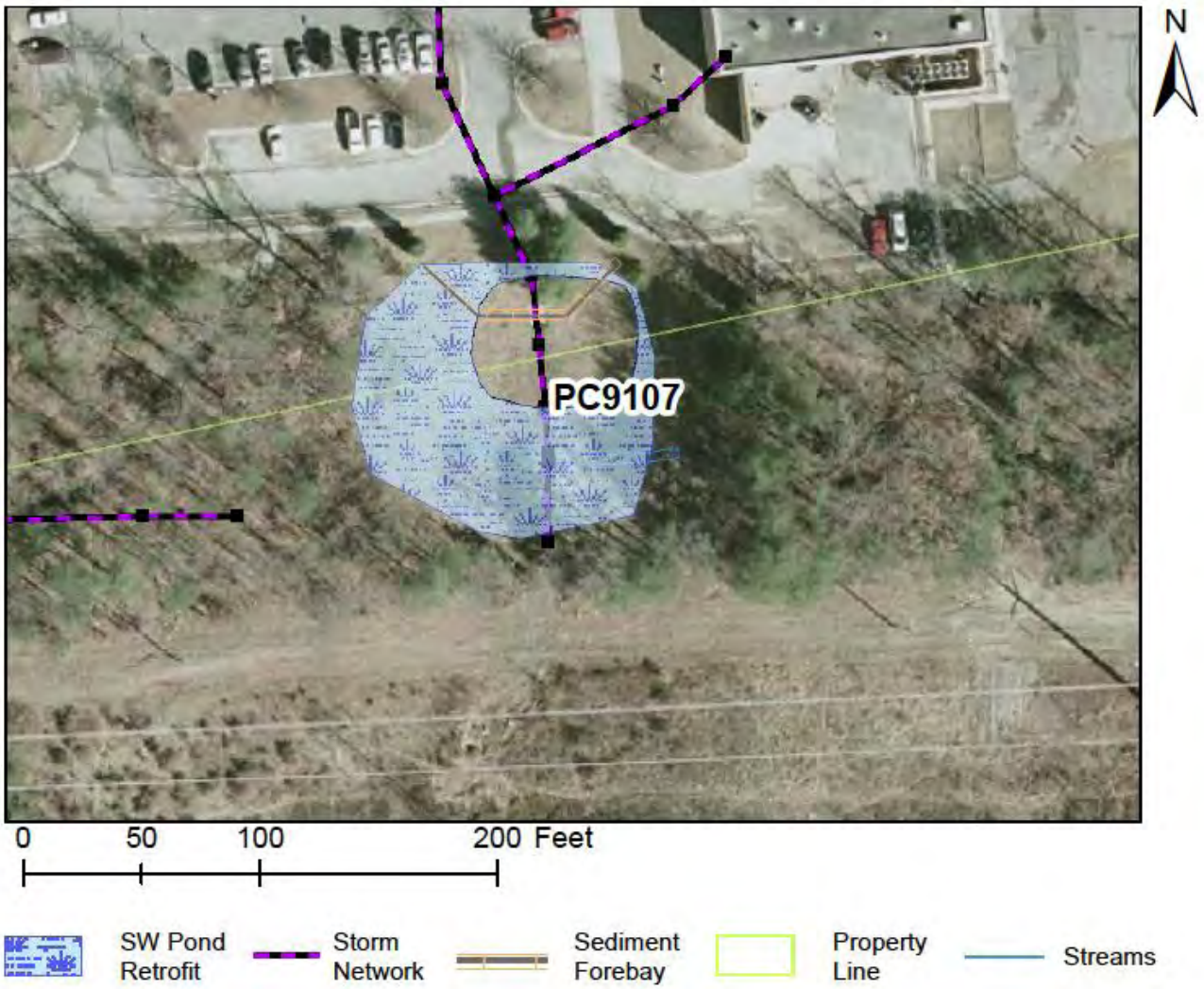
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.7	AC	$8,500	$5,950
Grading and Excavation	3500	CY	$35	$122,500
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	60	CY	$50	$3,000
Outflow Pipe	200	LF	$125	$25,000
Rip Rap Stabilization	50	SY	$100	$5,000
Organic Compost Soil Amendment	500	CY	$40	$20,000
Plantings	1	LS	5%	$9,823
Ancillary Items	1	LS	5%	$9,823
Erosion and Sediment Control	1	LS	10%	$19,645
			Base Construction Cost	$235,740
			Mobilization (5%)	$11,787
			Subtotal 1	$247,527
			Contingency (25%)	$61,882
			Subtotal 2	$309,409
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$139,234
			Total	$448,643
			Estimated Project Cost	$450,000

PC9107 Stormwater Pond Retrofit



Address: 8111 Northumberland Rd., Springfield, Virginia
Location: Saratoga Elementary School
Land Owner: Public/Local – Fairfax County Public School, Fairfax County Park Authority
PIN: 0984 04 S, 0984 11 B
Control Type: Water quality and quantity control
Drainage Area: 5.97 acres
Receiving Waters: Tributary of Pohick Creek

Description: Dry pond at Saratoga Elementary School receives runoff from a school parking lot and driveway. This project proposes the retrofit of an existing pond to create an extended detention dry pond with sediment forebay. The primary indicators are pollutants, including nitrogen, phosphorus and total suspended solids. The sediment forebays will provide pretreatment of stormwater runoff.



Project Benefits: This retrofit will extend the pond's detention time, provide better downstream channel protection and promote the settlement of particulate pollutants. Installing the sediment forebays will reduce debris and coarse sediment in the pond which will help reduce maintenance and will increase infiltration. Below are the project's estimated pollutant removal amounts.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.27	4.60	1.05

Project Design Considerations: Pond is partially on property owned by School Board of Fairfax County and partially on property owned by Fairfax County Park Authority. The pond size will need to be increased to accommodate the greater detention volume. Efforts should be made to minimize impacts to existing mature vegetation. The sediment forebays should account for approximately 10% of the pond area. The vegetative buffer should be 10-15' off of the top of bank.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.2	AC	$8,500	$1,700
Grading and Excavation	1300	CY	$35	$45,500
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	20	CY	$50	$1,000
Outflow Pipe	50	LF	$125	$6,250
Rip Rap Stabilization	50	SY	$100	$5,000
Organic Compost Soil Amendment	170	CY	$40	$6,800
Plantings	1	LS	5%	$3,813
Ancillary Items	1	LS	5%	$3,813
Erosion and Sediment Control	1	LS	10%	$7,625
			Base Construction Cost	$91,500
			Mobilization (5%)	$4,575
			Subtotal 1	$96,075
			Contingency (25%)	$24,019
			Subtotal 2	$120,094
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$54,042
			Total	$174,136
			Estimated Project Cost	$180,000

PC9109 Stormwater Pond Retrofit

Address: 8750 Pohick Rd., Springfield, Virginia
Location: St. Raymonds - Penafort Catholic Church
Land Owner: Private – Catholic Church
PIN: 0981 01 0013A
Control Type: Water quality and quantity control
Drainage Area: 6.96 acres
Receiving Waters: Tributary of Middle Run

Description: This stormwater pond retrofit is located at St. Raymond's Penafort Catholic Church east of Fairfax County Parkway and north of Pohick Road. The pond receives runoff from church and parking lot. This project proposes modifying the existing discharge structure and expanding the pond to create an extended detention dry pond with a sediment forebay. The primary indicators are pollutants including nitrogen, phosphorus and total suspended solids.

Project Benefits: Extending the time stormwater is detained in the pond will provide better downstream channel protection and promote particulate settlement. Installing the sediment forebays reduces debris and coarse sediment in the pond, increases infiltration, and decreases required maintenance. Below are the project's estimated pollutant removal amounts.

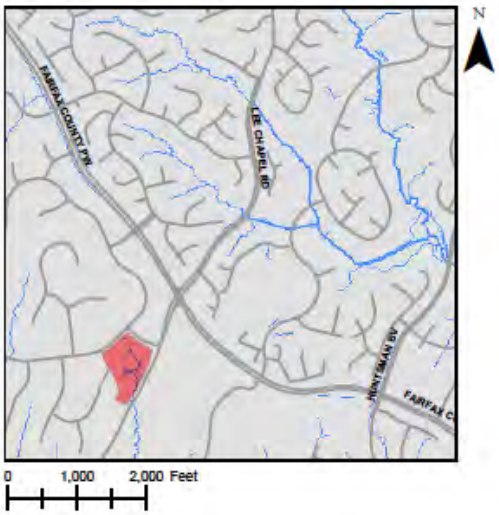
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.31	6.81	1.20

Project Design Considerations: The pond is on church property and does not have a County ID number. Records show there are no easements on site. Pond receives runoff by a swale in the northwest corner of pond and sheet flow along the south side of pond. The main sediment forebay would be located in the northwest corner. The sediment forebays should account for approximately 10% of the pond area. Creating an additional swale may be necessary to direct runoff to sediment forebay. Adding a vegetative buffer 10-15' off of the top of bank would help provide pretreatment to sheet flow that drains into the south side of the pond. The pond can expand to north and east. (See project map). Efforts should be made to minimize impacts to existing mature vegetation.

Cost:

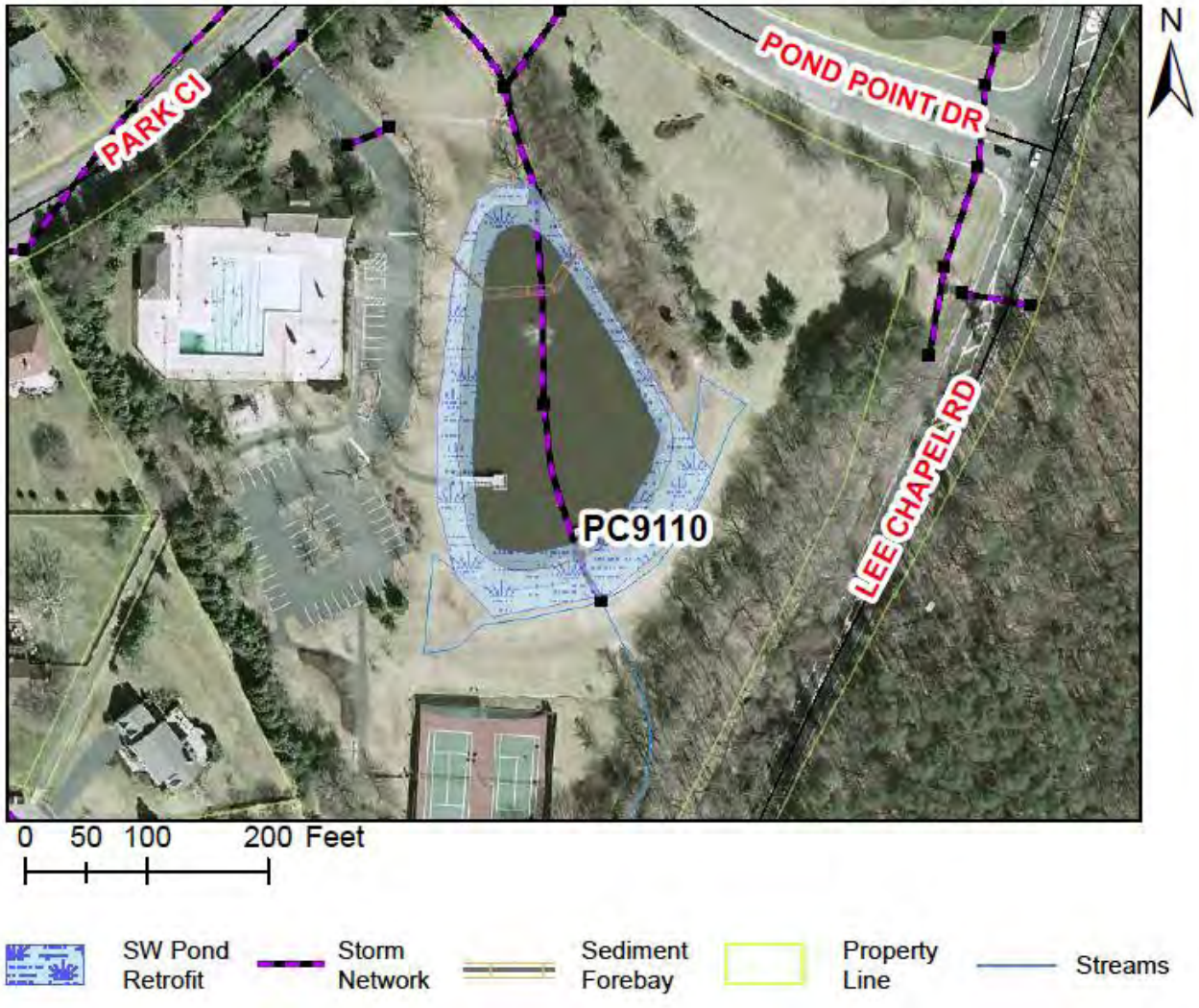
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.25	AC	$8,500	$2,125
Grading and Excavation	1600	CY	$35	$56,000
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	60	CY	$50	$3,000
Outflow Pipe	50	LF	$125	$6,250
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	200	CY	$40	$8,000
Plantings	1	LS	5%	$4,769
Ancillary Items	1	LS	5%	$4,769
Erosion and Sediment Control	1	LS	10%	$9,538
			Base Construction Cost	$114,450
			Mobilization (5%)	$5,723
			Subtotal 1	$120,173
			Contingency (25%)	$30,043
			Subtotal 2	$150,216
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$67,597
			Total	$217,813
			Estimated Project Cost	$220,000

PC9110 Stormwater Pond Retrofit



Address: 9908 South Park Circle, Fairfax Station, Virginia
Location: Wetland near South Park
Land Owner: South Run Regency
PIN: 0883 06 G
Control Type: Water quality and quantity control
Drainage Area: 42.66 acres
Receiving Waters: Tributary of South Run

Description: This project proposes the retrofit of an existing wet pond at a community center off of Park Circle to create a wetland system with construction of a sediment forebay and the addition of a bench planting. The pond collects runoff from adjacent neighborhoods and roadways to the north and outfalls into a stream to the south. The primary indicators are wetland habitat and pollutants, including nitrogen, phosphorous and total suspended solids.



Project Benefits: This retrofit will modify the existing pond to increase pollutant removal and provide adequate channel protection above the permanent pool. It will create a better functioning environment for gravitational settlement, biological uptake and microbial activity. The addition of the sediment forebay provides improved treatment. Below are the project's estimated pollutant removal amounts.

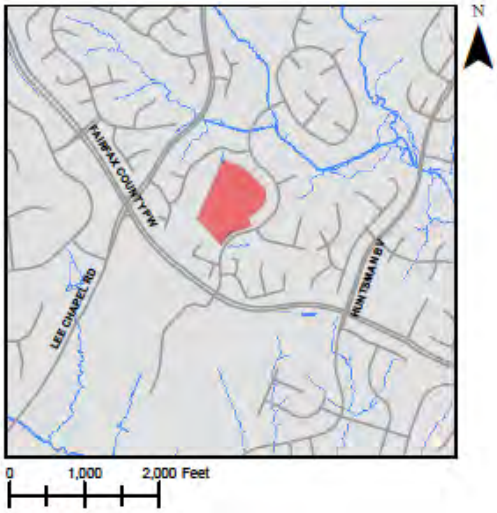
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
1.21	24.16	5.83

Project Design Considerations: Proposed project is at a community swim club. Efforts should be made to minimize impacts to the functions of the community center. There is an existing pier that goes into the water. The effects on existing mature vegetation should be minimized. The forebay should account for approximately 10% of the total surface area of the pond. The pond is not within any easements and is on private property owned by South Run Regency.

Cost:

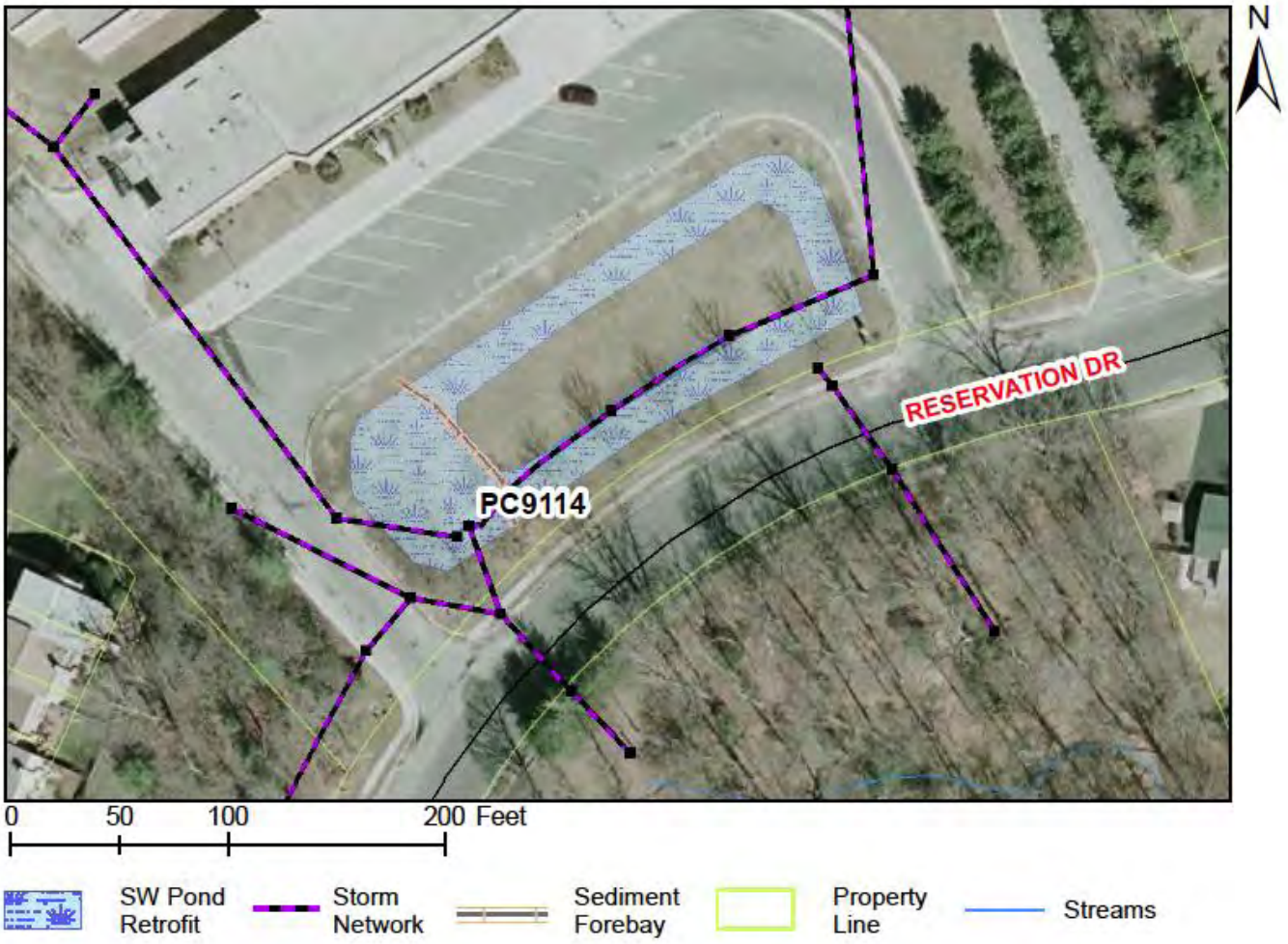
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	1	AC	$8,500	$8,500
Grading and Excavation	4000	CY	$35	$140,000
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	50	CY	$50	$2,500
Outflow Pipe	100	LF	$125	$12,500
Rip Rap Stabilization	150	SY	$100	$15,000
Organic Compost Soil Amendment	800	CY	$40	$32,000
Plantings	1	LS	5%	$11,275
Ancillary Items	1	LS	5%	$11,275
Erosion and Sediment Control	1	LS	10%	$22,550
			Base Construction Cost	$270,600
			Mobilization (5%)	$13,530
			Subtotal 1	$284,130
			Contingency (25%)	$71,033
			Subtotal 2	$355,163
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$159,823
			Total	$514,986
			Estimated Project Cost	$520,000

PC9114 Stormwater Pond Retrofit



Address: 7420 Reservation Dr., Springfield, Virginia
Location: Pond at Sangster Elementary School
Land Owner: Public/Local – School Board of Fairfax County
PIN: 0883 02 N
Control Type: Water quality and quantity control
Drainage Area: 8.65 acres
Receiving Waters: Tributary of Peyton Run

Description: This project proposes a pond retrofit at Sangster Elementary School northwest of Reservation Drive. Stormwater runoff is collected in a closed system and outfalls into a dry pond near the school's entrance. The pond outfalls across Reservation Drive into a wooded area and ultimately into a stream. This project proposes removing the pond's existing pilot channel and retrofitting the pond to create a wetland system with sediment forebays for the two inflows and bench planting to help increase pollutant uptake. The primary indicators are wetland habitat, nitrogen, phosphorus and total suspended solids.



Project Benefits: This retrofit will increase the time stormwater remains in the basin to be treated and will allow more time for the stormwater to infiltrate. This will help decrease erosion downstream where the pond outfalls through a culvert directly into a wooded area. The retrofit will increase pollutant removal and provide adequate downstream channel protection to minimize erosion.

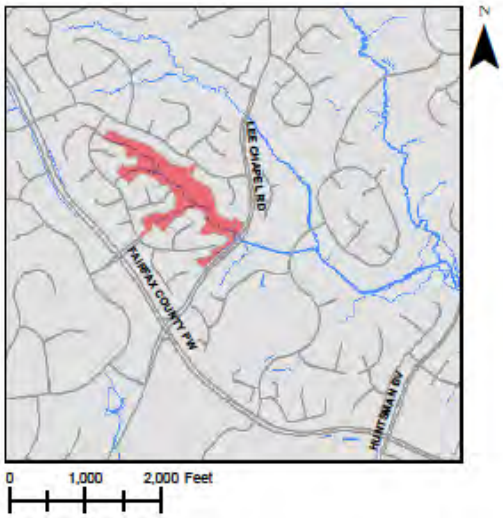
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.59	9.74	2.57

Project Design Considerations: The existing dry pond's pilot channels direct flows from small storm events with high pollutant concentrations directly to the outfall with no chance for infiltration. Due to the existing pond's limited difference in outfall elevation, and the need to remove the concrete pilot channels, it is necessary to convert the existing dry pond into a wetland system. The pond's footprint will be expanded to utilize most of the area in the landscape island as shown by the hatched area. Additional planting would be added in this area. The existing trees would be incorporated into the design. To allow more infiltration and pretreatment of the stormwater, curb cuts and gravel filter strips should be used along the road edge. The stormwater facility would be an educational asset to the school, because of its ability to showcase how stormwater can be treated by natural processes.

Cost:

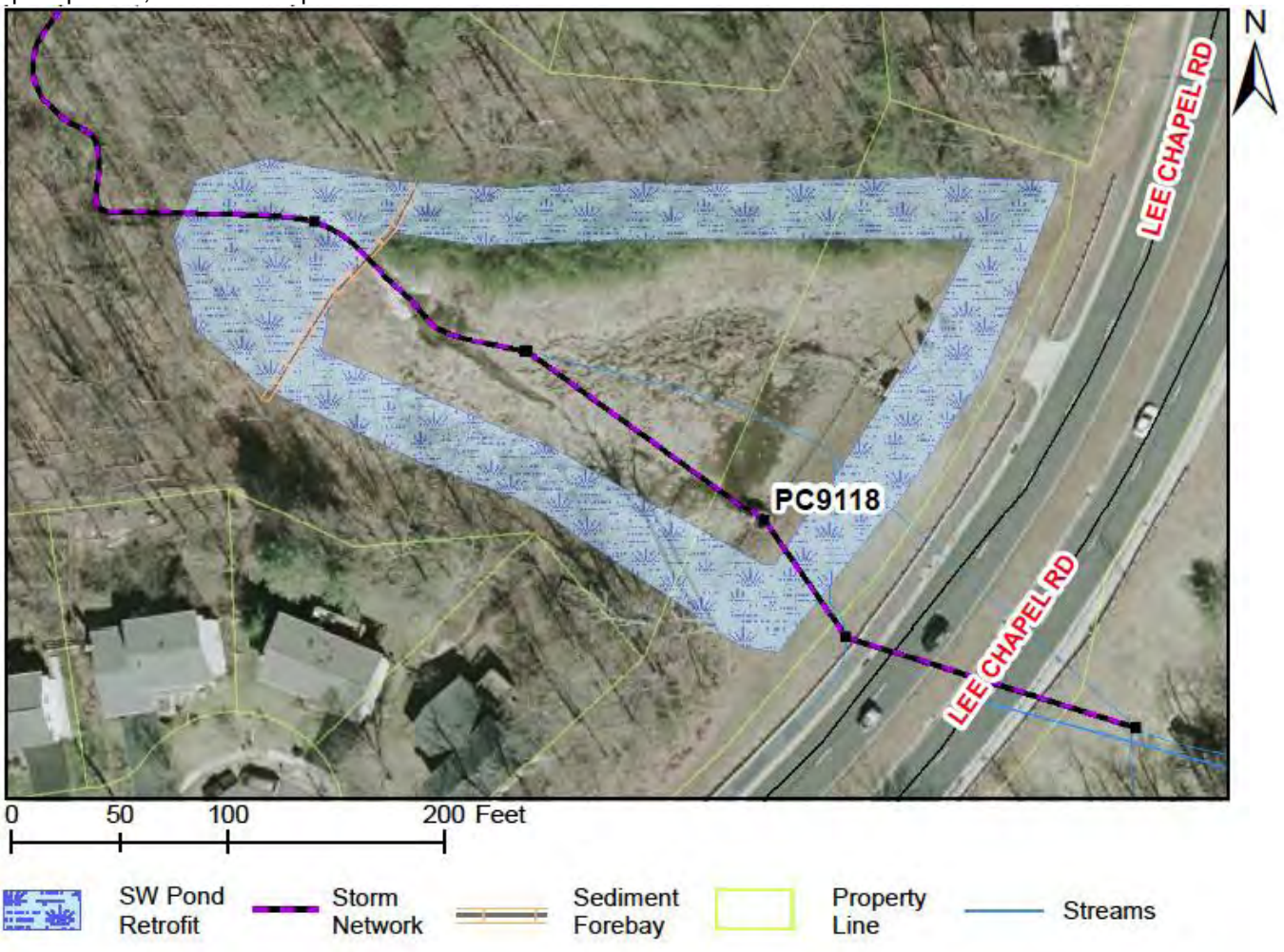
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.35	AC	$8,500	$2,975
Grading and Excavation	500	CY	$35	$17,500
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	25	CY	$50	$1,250
Outflow Pipe	40	LF	$125	$5,000
Rip Rap Stabilization	50	SY	$100	$5,000
Organic Compost Soil Amendment	250	CY	$40	$10,000
Plantings	1	LS	5%	$2,586
Ancillary Items	1	LS	5%	$2,586
Erosion and Sediment Control	1	LS	10%	$5,173
			Base Construction Cost	$62,070
			Mobilization (5%)	$3,104
			Subtotal 1	$65,174
			Contingency (25%)	$16,293
			Subtotal 2	$81,467
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$36,660
			Total	$118,127
			Estimated Project Cost	$120,000

PC9118 Stormwater Pond Retrofit



Address: Behind 9500 Shipwright Dr., Burke, Virginia
Location: Pond near Shipwright Dr.
Land Owner: Private – Longwood Knolls Homeowners Association
PIN: 0883 03 A, 0883 03 A2
Control Type: Water quality and quantity control
Drainage Area: 90.90 acres
Receiving Waters: Tributary of Sangster Branch

Description: Large dry pond west of Lee Chapel Road and east of Shipwright Drive receives runoff from a stream in wooded area and adjacent neighborhoods. Project proposes to retrofit the existing pond to create an extended detention dry pond with a sediment forebay. The retrofit will modify the discharge structure to increase the time stormwater stays in the pond. The pond will be increased in size and to handle the larger volume and an aquatic bench of wetland plants will be added to treat pollutants. Primary problem indicators are pollutants: nitrogen, phosphorus, and total suspended solids.



Project Benefits: This retrofit will provide adequate downstream channel protection and allow for better function of temporary ponding using a control structure, which enables particulate pollutants to settle out of the stormwater discharge. The addition of the sediment forebay will reduce debris and coarse sediment, reducing maintenance costs. Below are the project's estimated pollutant removal amounts.

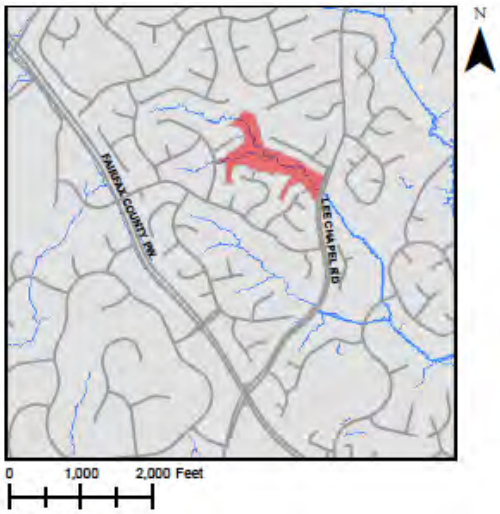
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
1.38	6.27	2.05

Project Design Considerations: There appears to be sufficient land area for expansion of the pond. Improving this pond which treats a very large residential drainage area will have great benefits. Additionally the pond is easily accessible. Entire pond is on land owned by Longwood Knolls Homeowner's Association. There are no onsite easements. Forebay should account for approximately 10% of pond area and should be constructed on the upstream side, which is to the northwest. Outfall pipe goes under Lee Chapel Road. Landscaping plan for aquatic bench should incorporate existing vegetation as much as possible.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	1.3	AC	$8,500	$11,050
Grading and Excavation	2000	CY	$35	$70,000
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	55	CY	$50	$2,750
Outflow Pipe	250	LF	$125	$31,250
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	750	CY	$40	$30,000
Plantings	1	LS	5%	$8,503
Ancillary Items	1	LS	5%	$8,503
Erosion and Sediment Control	1	LS	10%	$17,005
			Base Construction Cost	$204,060
			Mobilization (5%)	$10,203
			Subtotal 1	$214,263
			Contingency (25%)	$53,566
			Subtotal 2	$267,829
				$120,523
			Total	$388,352
			Estimated Project Cost	$390,000

PC9120 Stormwater Pond Retrofit



Address: Behind 9505 Southern Cross La., Burke, Virginia
Location: Pond near Southern Cross La.
Land Owner: Private – Longwood Knolls Homeowners Association
PIN: 0881 05 D
Control Type: Water quality and quantity control
Drainage Area: 116.09 acres
Receiving Waters: Tributary of Peyton Run

Description: This project proposes the creation of an extended detention dry pond with sediment forebay. The existing dry pond northwest of Lee Chapel Road and southwest of Southern Cross Lane receives runoff from these roads as well as Ebb tide Lane. Due to pollutants such as phosphorous, nitrogen and total suspended solids, a retrofit is proposed. This will allow for better downstream channel protection and allow for better function of temporary ponding, as well as promote the settlement of particulate pollution. Pond has easy access and room for expansion.

Project Benefits: This retrofit will provide adequate downstream channel protection and allow for better function of temporary ponding using a control structure, which enables particulate pollutants to settle out. Installing the sediment forebay will reduce debris and course sediment in the pond. The planting in the proposed aquatic bench and safety bench will increase the ponds biological uptake of pollutants, such as nitrogen and phosphorus. Below are the project's estimated pollutant removal amounts.

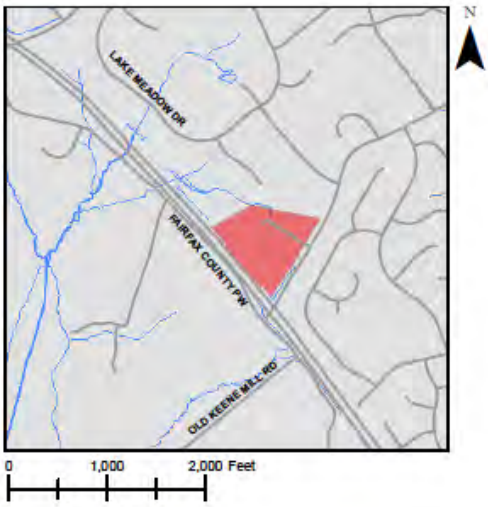
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
1.50	6.94	2.26

Project Design Considerations: This project is proposed on private land owned by Longwood Knolls Homeowners Association. The pond's safety bench and aquatic bench should be landscaped to prevent access to the pool due to proximity to homes. Location has a large amount of existing vegetation. Efforts should be made to minimize impacts to existing mature vegetation. The pond receives inflows from a culvert and sheet flow from the adjacent residential homes. The total area of the sediment forebay should be approximately 10% of the pond's surface area.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	1.15	AC	$8,500	$9,775
Grading and Excavation	5000	CY	$35	$175,000
Structural BMP Retrofit and Incidentals	1	LS	$20,000	$20,000
Embankment	60	CY	$50	$3,000
Outflow Pipe	200	LF	$125	$25,000
Rip Rap Stabilization	150	SY	$100	$15,000
Organic Compost Soil Amendment	800	CY	$40	$32,000
Plantings	1	LS	5%	$13,989
Ancillary Items	1	LS	5%	$13,989
Erosion and Sediment Control	1	LS	10%	$27,978
			Base Construction Cost	$335,730
			Mobilization (5%)	$16,787
			Subtotal 1	$352,517
			Contingency (25%)	$88,129
			Subtotal 2	$440,646
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$198,291
			Total	$638,936
			Estimated Project Cost	$640,000

PC9121 Stormwater Pond Retrofit



Address: 9900 Old Keene Mill Road, Burke, Virginia
Location: Burke Community Church
Land Owner: Private - Burke Community Church
PIN: 0881 01 0007A
Control Type: Water quality and quantity control
Drainage Area: 7.63 acres
Receiving Waters: Tributary of South Run

Description: This project proposes to retrofit an existing pond northeast of Fairfax County Parkway at Burke Community Church to create a wetland system with construction of a sediment forebay and the addition of low marsh and high marsh plantings. The primary indicators are wetland habitat and pollutants.The pond receives runoff from the church and parking lot. The retrofit will modify the existing pond to increase pollutant removal and to provide adequate channel protection. The retrofit will create a better functioning environment for gravitational settling, biological uptake and microbial activity.

Project Benefits: The extended detention basin and sediment forebay will provide additional stormwater management. The sediment forebay and increased detention time will increase sediment settling and biological uptake. Enlarging the pond and adjusting the outfall structure will decrease the ponds peak discharge which will protect the downstream channel. Below are the project's estimated pollutant removal amounts.

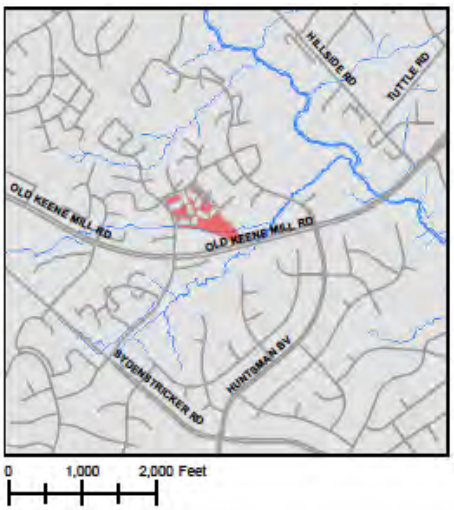
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.73	14.76	4.08

Project Design Considerations: This pond receives a significant amount of runoff due to the impervious parking lot. Due to this pond being labeled TBD in the County's system (meaning To Be Determined), it appears that this pond's maintenance is not reviewed by the County. Improving this facility to meet today's standards, would help insure proper maintenance for this facilitiy and incorporation into the County's system. This project appears feasibile due to the fact that there is available space. The records do not show this pond as being located in an easement.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.25	AC	$8,500	$2,125
Grading and Excavation	1000	CY	$35	$35,000
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	50	CY	$50	$2,500
Outflow Pipe	50	LF	$125	$6,250
Rip Rap Stabilization	75	SY	$100	$7,500
Organic Compost Soil Amendment	175	CY	$40	$7,000
Plantings	1	LS	5%	$3,519
Ancillary Items	1	LS	5%	$3,519
Erosion and Sediment Control	1	LS	10%	$7,038
			Base Construction Cost	$84,450
			Mobilization (5%)	$4,223
			Subtotal 1	$88,673
			Contingency (25%)	$22,168
			Subtotal 2	$110,841
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$49,878
			Total	$160,719
			Estimated Project Cost	$170,000

PC9122 Stormwater Pond Retrofit



Address: Field Master Dr. & Old Keene Mill Road, Springfield, Virginia
Location: Pond along Old Keene Mill Road (access road)
Land Owner: Private – Keene Mill Village Two Homeowners Association, III Keene Mill Village Homeowners Association, Keene Mill Village Recreation Association
PIN: 0882 13 B, 0882 1303 D, 0882 13 E
Control Type: Water quality and quantity control
Drainage Area: 40.47 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofit of an existing pond north of Old Keene Mill Road and east of Field Master Drive, which receives runoff from adjacent roads and neighborhoods. The existing dry pond will be retrofitted to create an extended detention dry pond with a sediment forebay. Pond receives runoff from a large drainage area consisting of dense residential development, roadways and wooded areas. Pond outfalls to the adjacent stream in the wooded area to the east.

Project Benefits: Extending the pond's detention time will help prevent downstream channel erosion and will increase pollutant settlement in the pond. The forebay will collect the majority of the roadway fines and help maintain the infiltration capacity of the pond and reduce major maintenance repairs. Below are the project's estimated pollutant removal amounts.

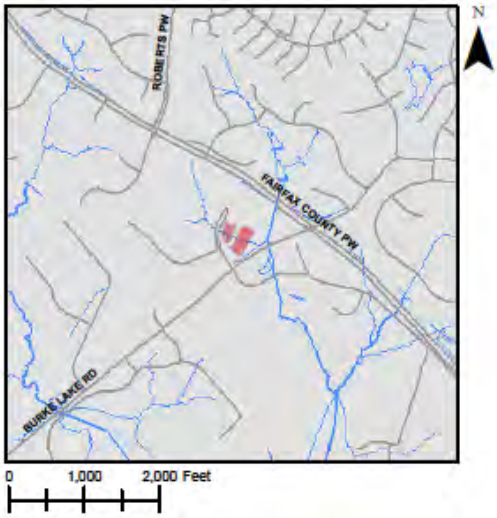
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
2.58	42.76	8.35

Project Design Considerations: This project is on private property owned by Keene Mill Village Two Homeowners Association. Records show no easements near the site. The sediment forebay should account for approximately 10% of pond area. The existing concrete pilot channel should be removed, and the existing discharge structure will need to be modified to extend the pond's detention time. Due to the addition of the sediment forebay and the extended detention time, the pond size will probably have to be increased as shown on the project area map. The pond is in a heavily wooded area, and efforts should be made to minimize impacts to existing mature vegetation. The landscaping plan should allow the pond to mature into a native forest in the right places yet keep mowable turf along the embankment and all access areas. Thepond has its own access road off of the main road.

Cost:

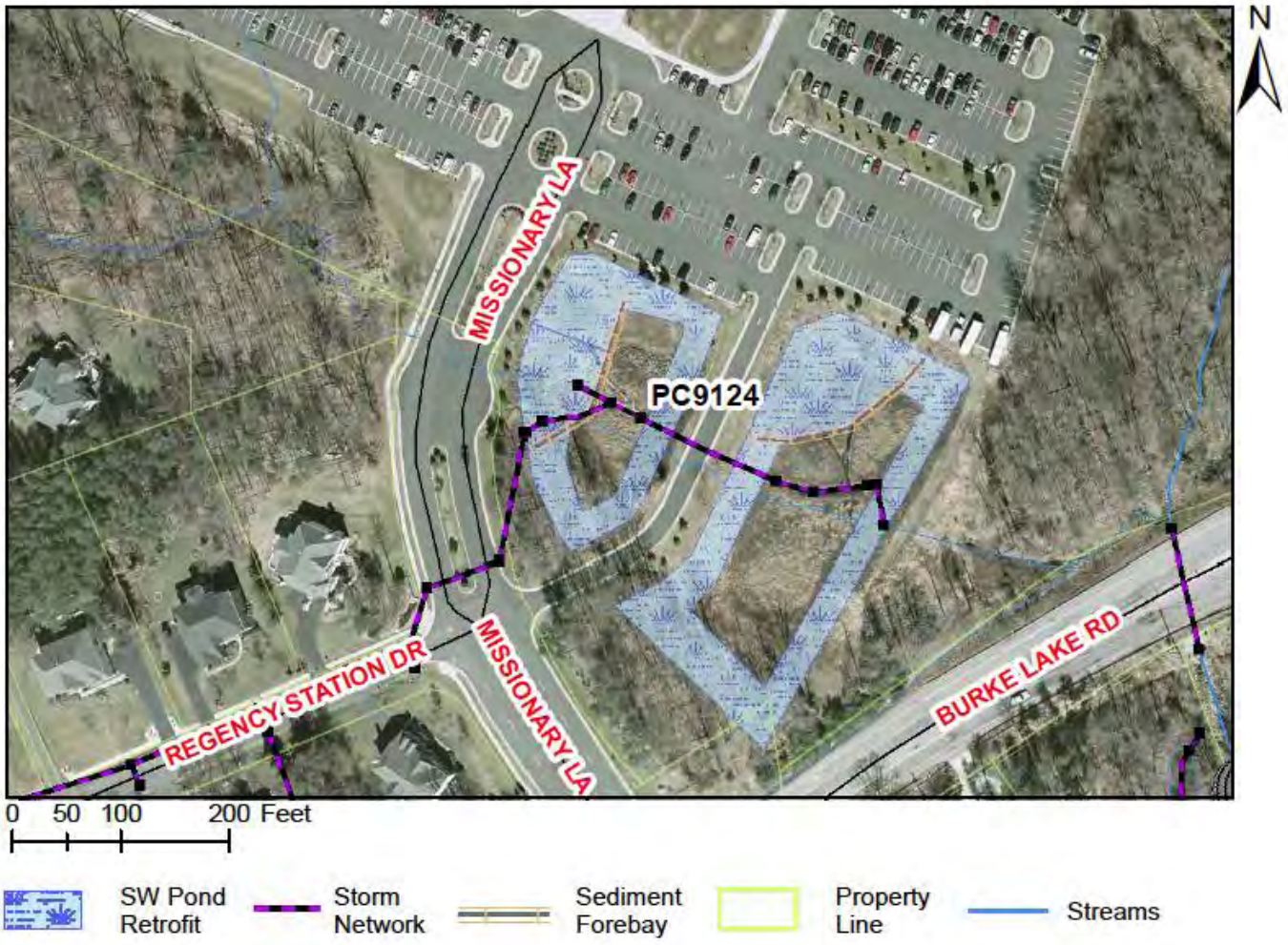
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.9	AC	$8,500	$7,650
Grading and Excavation	2500	CY	$35	$87,500
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	65	CY	$50	$3,250
Outflow Pipe	150	LF	$125	$18,750
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	700	CY	$40	$28,000
Plantings	1	LS	5%	$8,508
Ancillary Items	1	LS	5%	$8,508
Erosion and Sediment Control	1	LS	10%	$17,015
			Base Construction Cost	$204,180
			Mobilization (5%)	$10,209
			Subtotal 1	$214,389
			Contingency (25%)	$53,597
			Subtotal 2	$267,986
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$120,594
			Total	$388,580
			Estimated Project Cost	$390,000

PC9124 Stormwater Pond Retrofit



Address: 6401 Missionary Lane, Fairfax Station, Virginia
Location: Fairfax Baptist Temple Academy
Land Owner: Private – Fairfax Baptist Temple
PIN: 0872 01 0036
Control Type: Water quality and quantity control
Drainage Area: 37.90 acres
Receiving Waters: Tributary of Oppossum Branch

Description: This project proposes the retrofit of two connecting ponds at Fairfax Baptist Temple Academy to create an extended detention dry pond with sediment forebays. The retrofit will install sediment forebays on the inflow pipes, remove the pilot channels, add an aquatic bench with an engineered landscaping plan, and modify the outlet structure to increase the stormwater treatment time. The primary indicators are pollutants, including nitrogen, phosphorus and total suspended solids. Pond is bisected by an access road. A pipe goes under the access road to connect the two ponds.



Project Benefits: Extending the detention of stormwater in this pond will provide better downstream channel protection and more time to promote particulate pollutant settlement. The new sediment forebays will reduce debris and coarse sediment that typically wash off of parking lots. The sediment forebay, if maintained properly, will decrease the necessary maintenance to the rest of the pond. Lastly, removing the pilot channels will allow the pond to better treat runoff from small storms which yield runoff with high pollutant concentrations. Below are the project's estimated pollutant removal amounts.

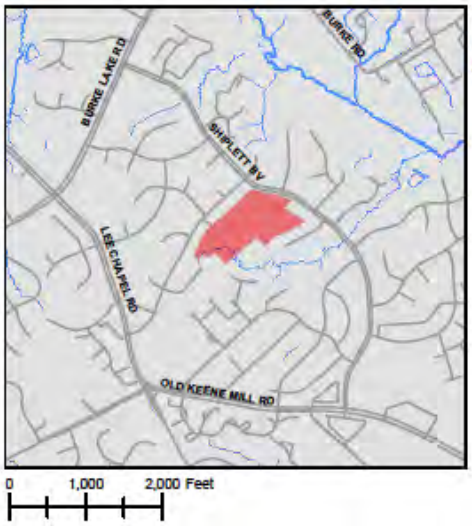
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
1.44	29.76	6.41

Project Design Considerations: There appears to be room for expansion and enhancement of existing ponds. The pond is on property owned by Fairfax Baptist Temple. Both ponds have inflow pipes and concrete pilot channels. Sediment forebays should be installed on the inflow pipes and be sized no less than 10% of the size of the pond. To install the sediment forebays and extend the stormwater detention the size of the pond may have to be increased. Efforts should be made to minimize impacts to existing vegetation. The concrete pilot channels should be removed and the landscaping plan should allow the pond to mature into a native forest in the right places yet keep mowable turf along the embankment and along access areas.

Cost:

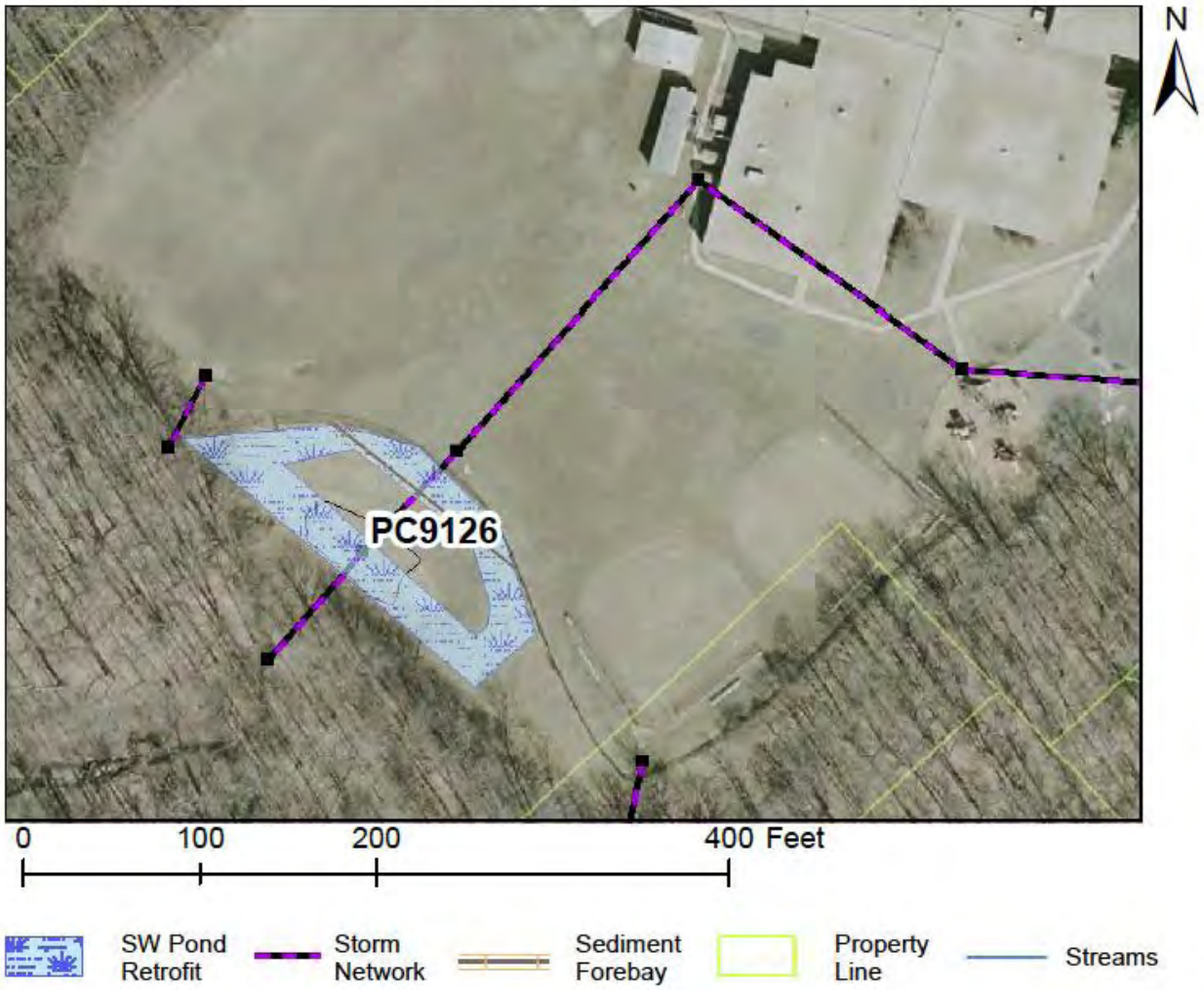
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	2	AC	$8,500	$17,000
Grading and Excavation	4000	CY	$35	$140,000
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	150	CY	$50	$7,500
Outflow Pipe	280	LF	$125	$35,000
Rip Rap Stabilization	125	SY	$100	$12,500
Organic Compost Soil Amendment	800	CY	$40	$32,000
Plantings	1	LS	5%	$12,950
Ancillary Items	1	LS	5%	$12,950
Erosion and Sediment Control	1	LS	10%	$25,900
			Base Construction Cost	$310,800
			Mobilization (5%)	$15,540
			Subtotal 1	$326,340
			Contingency (25%)	$81,585
			Subtotal 2	$407,925
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$183,566
			Total	$591,491
			Estimated Project Cost	$600,000

PC9126 Stormwater Pond Retrofit



Address: 16130 Shiplett Blvd, Burke, Virginia
Location: White Oaks Elementary School
Land Owner: Public/Local – School Board of Fairfax County
PIN: 0784 13 A
Control Type: Water quality and quantity control
Drainage Area: 4.60 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofit of an existing pond at White Oaks Elementary School to create an extended detention basin with a sediment forebay. The pond size will be increased and the outfall structure will be modified to increase the stormwater detention time. This will improve the stormwater runoff quality and quantity. The primary indicators are pollutants, including nitrogen, phosphorus and total suspended solids.



Project Benefits: This retrofit will modify the existing pond to provide adequate downstream channel protection and allow for better function of temporary ponding using a control structure which promotes the settlement of pollutant particulates. Below are the project's estimated pollutant removal amounts.

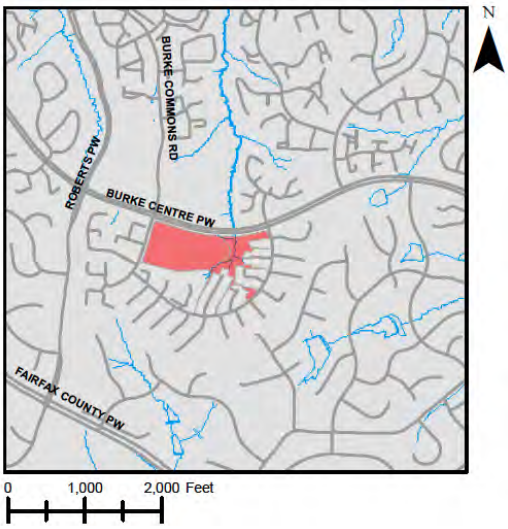
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.45	7.21	1.66

Project Design Considerations: An additional inlet or swale on the east side of the playground should be added to capture runoff and direct it to the existing dry pond. The forebay should be sized as approximately 10% of the pond area. There is ample room for expansion and a significant amount of impervious areas contributing runoff. The retrofit will add a discharge control structure to increase the detention time of the stormwater in the pond. An aquatic bench will be added as shown on the project area map. The planting plan will include wetland plants and buffer areas that will promote greater wildlife and water fowl use. The Watershed Advisory Group supports this project and says this project is important.

Cost:

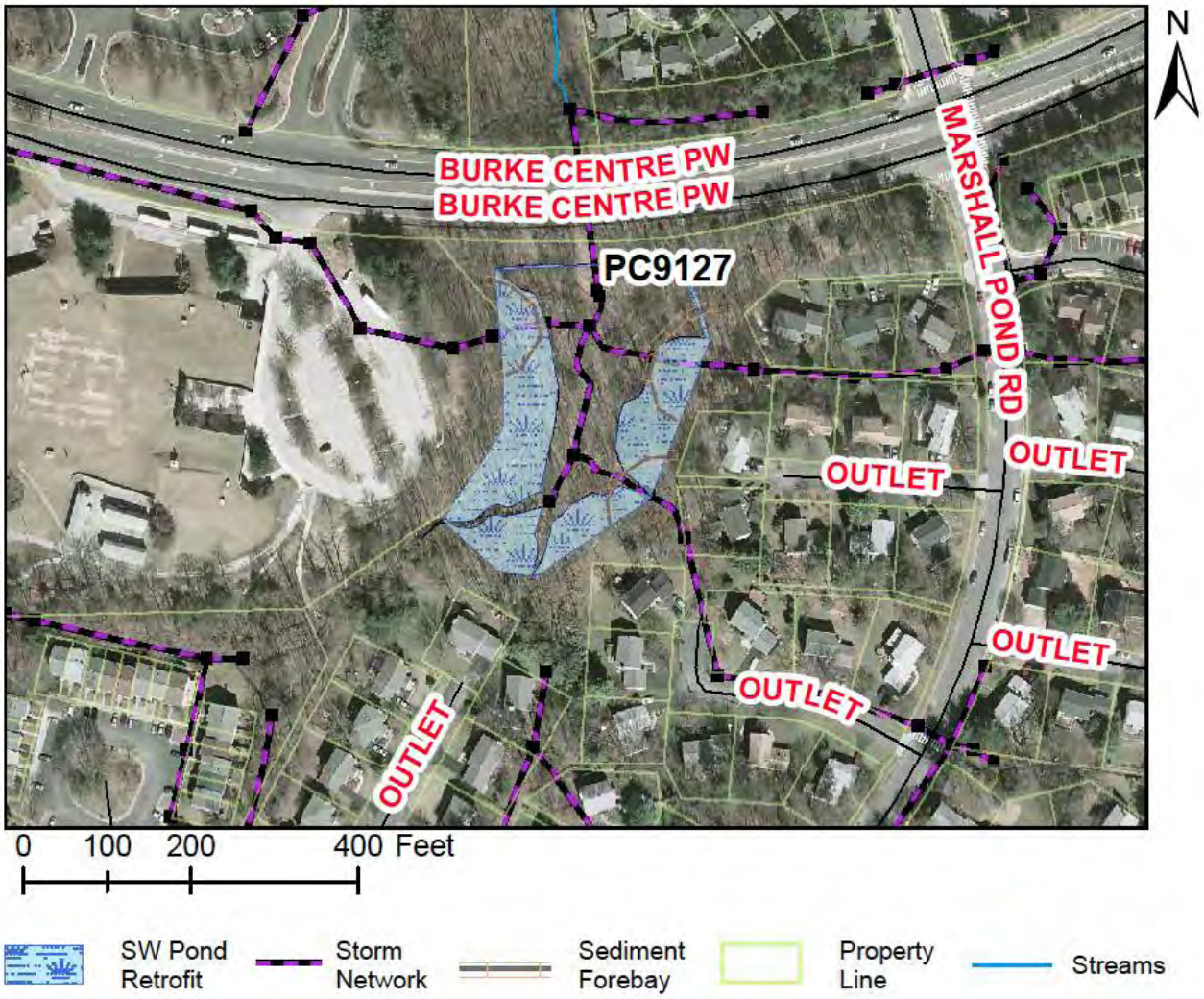
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.2	AC	$8,500	$1,700
Grading and Excavation	1000	CY	$35	$35,000
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	50	CY	$50	$2,500
Outflow Pipe	75	LF	$125	$9,375
Rip Rap Stabilization	75	SY	$100	$7,500
Organic Compost Soil Amendment	160	CY	$40	$6,400
Plantings	1	LS	5%	$3,624
Ancillary Items	1	LS	5%	$3,624
Erosion and Sediment Control	1	LS	10%	$7,248
			Base Construction Cost	$86,970
			Mobilization (5%)	$4,349
			Subtotal 1	$91,319
			Contingency (25%)	$22,830
			Subtotal 2	$114,148
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$51,367
			Total	$165,515
			Estimated Project Cost	$170,000

PC9127 Stormwater Pond Retrofit



Address: Next to 6000 Burke Centre Pkwy, Burke, Virginia
Location: Pond near Terre Centre Elementary School
Land Owner: Private - Burke Centre Conservancy
PIN: 0774 05 E2, 0774 01 0028A
Control Type: Water quality and quantity control
Drainage Area: 57.22 acres
Receiving Waters: Tributary of Sideburn Branch

Description: Large dry pond receives runoff from a large drainage area that includes Terre Centre Elementary School to the west and a residential neighborhood to the east. The primary indicators are pollutants such as nitrogen, phosphorus and total suspended solids. Pond will be retrofitted to be an extended detention dry pond with sediment forebays at the inlet pipes. Pond outfalls to the north under Burke Centre Parkway into a stream.



Project Benefits: This retrofit will modify the existing pond to increase pollutant removal and provide adequate downstream channel protection. The retrofit will create a better-functioning environment for gravitational settling, biological uptake and microbial activity by increasing the time the stormwater is in the pond. Vegetation will be planted to improve pond area and create a buffer. Below are the project's estimated pollutant removal amounts.

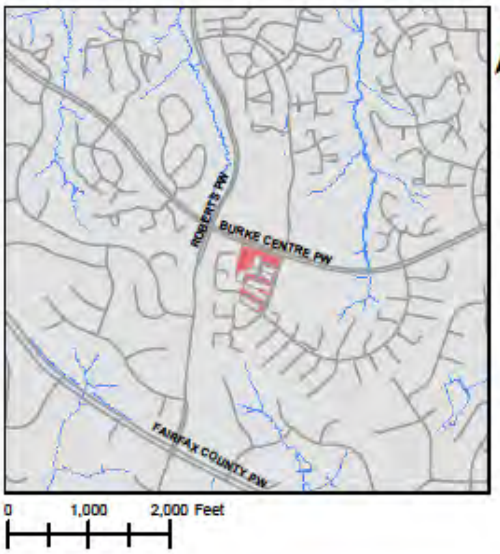
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
3.25	60.61	11.85

Project Design Considerations: This pond has a highly impervious drainage area with significant runoff from closed systems. The area directly surrounding the pond is wooded. Retrofit should not require significant tree removal. The sediment forebays should account for approximately 10% of the pond area. The vegetative buffer should be 10-15' off of the top of bank. The pond is on land owned by Burke Centre Conservancy.

Cost:

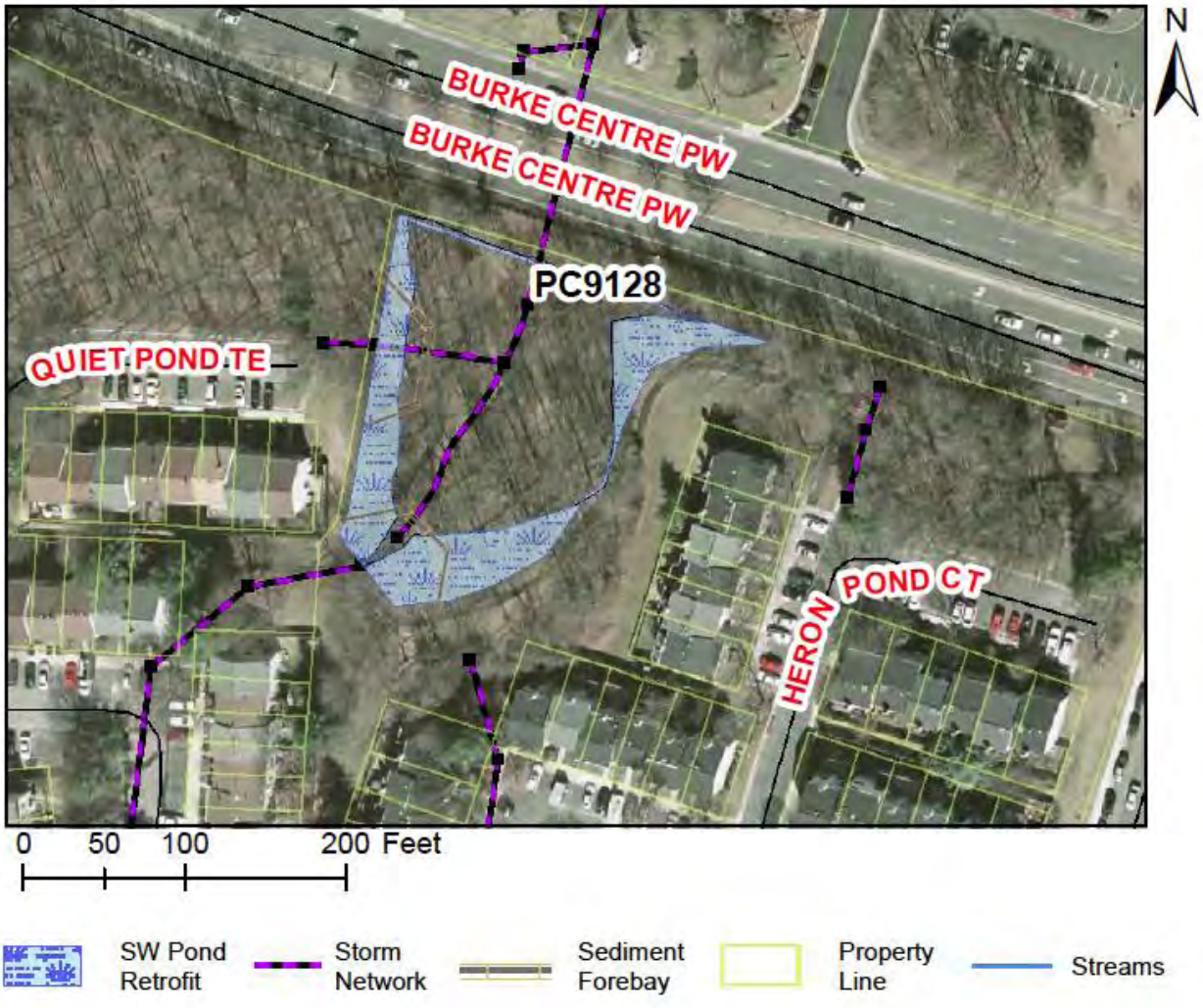
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.9	AC	$8,500	$7,650
Grading and Excavation	4500	CY	$35	$157,500
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	100	CY	$50	$5,000
Outflow Pipe	125	LF	$125	$15,625
Rip Rap Stabilization	250	SY	$100	$25,000
Organic Compost Soil Amendment	300	CY	$40	$12,000
Plantings	1	LS	5%	$11,889
Ancillary Items	1	LS	5%	$11,889
Erosion and Sediment Control	1	LS	10%	$23,778
			Base Construction Cost	$285,330
			Mobilization (5%)	$14,267
			Subtotal 1	$299,597
			Contingency (25%)	$74,899
			Subtotal 2	$374,496
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$168,523
			Total	$543,019
			Estimated Project Cost	$550,000

PC9128 Stormwater Pond Retrofit



Address: 6000 Burke Commons Rd., Burke, Virginia
Location: Across from Wal-Mart Supercenter 0174DP
Land Owner: Private – Burke Centre Conservancy
PIN: 0774 10 H1
Control Type: Water quality and quantity control
Drainage Area: 18.58 acres
Receiving Waters: Tributary of Sideburn Branch

Description: The project proposes to retrofit an existing pond to create an extended detention dry pond with sediment forebays. The pond receives stormwater from a closed pipe system that collects runoff from adjacent residential neighborhood. The pond outfalls across Burke Centre Parkway through the Wal-Mart parking lot storm sewer and discharges into a stream across Roberts Parkway.



Project Benefits: Modifying the existing control structure to increase the detention time will allow for more sediment deposition and downstream channel protection. Installing the sediment forebays will reduce debris and coarse sediment in the pond and will reduce required maintenance. Area draining to pond is large and very impervious. This project will help remove more pollutants before entering streams. Below are the project's estimated pollutant removal amounts.

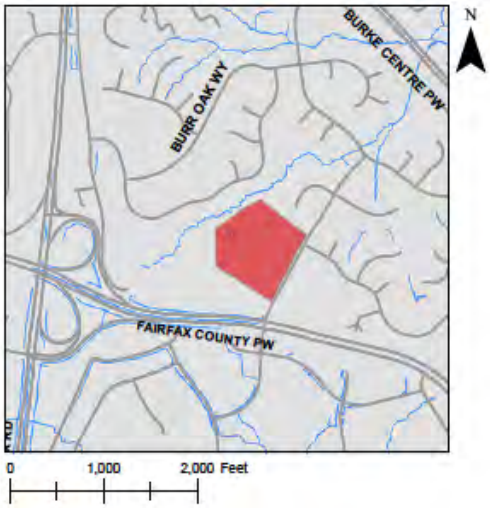
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
1.50	28.84	5.45

Project Design Considerations: Pond is located behind existing dense residential townhouse neighborhood and across from large commercial development. Pond is on private property. According to County records, there are no onsite easements. The sediment forebays should account for approximately 10% of the pond area. The vegetative buffer should be 10-15' off of the top of bank. Efforts should be made to minimize impacts to existing mature vegetation. Paved path in wooded area near pond should not be disturbed.

Cost:

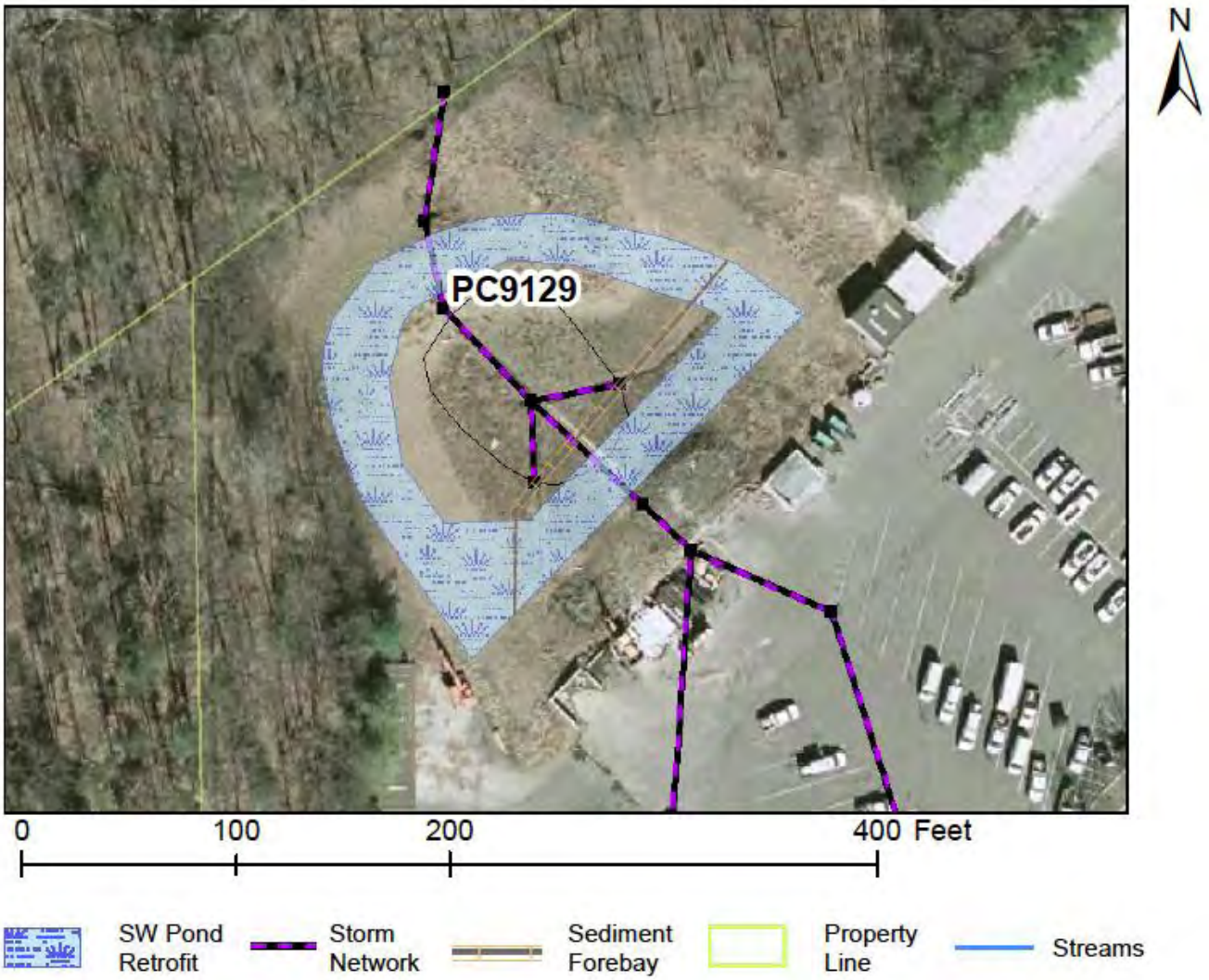
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.3	AC	$8,500	$2,550
Grading and Excavation	1650	CY	$35	$57,750
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	65	CY	$50	$3,250
Outflow Pipe	90	LF	$125	$11,250
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	200	CY	$40	$8,000
Plantings	1	LS	5%	$5,140
Ancillary Items	1	LS	5%	$5,140
Erosion and Sediment Control	1	LS	10%	$10,280
			Base Construction Cost	$123,360
			Mobilization (5%)	$6,168
			Subtotal 1	$129,528
			Contingency (25%)	$32,382
			Subtotal 2	$161,910
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$72,860
			Total	$234,770
			Estimated Project Cost	$240,000

PC9129 Stormwater Pond Retrofit



Address: 6000 Freds Oak Road, Burke, Virginia
Location: Fairfax Co. Wastewater Collection
Land Owner: Public/Local – Fairfax County Government
PIN: 0773 01 0013
Control Type: Water quality and quantity control
Drainage Area: 10.67 acres
Receiving Waters: Tributary of Sideburn Branch

Description: Fairfax County Wastewater Collection Division parking lot drains from south to north. Runoff from the parking lots is piped into the pond on the north side of the site, which outfalls to an adjacent stream. This project proposes to retrofit the existing dry pond by increasing the pond's size and installing a discharge structure that will increases detention time for stormwater runoff.



Project Benefits: This pond retrofit will allow the pond to better treat stormwater runoff from more frequent smaller storms which has higher pollutant concentrations than larger storms. This project will promote particulate pollutant deposition, biological uptake of pollutants, and downstream erosion protection. The sediment forebay will provide additional treatment for the pond.. Since this pond already provides some water quality the TSS removal will remain the same, but he TN removal and TP removal will increase by 25% and 10% respectively.

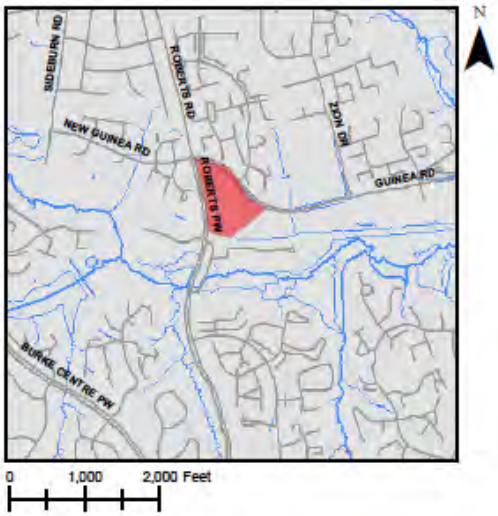
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0	20.6	0.9

Project Design Considerations: Significant impervious area is piped directly from the parking lot. Installing a sediment forebay that is 10% of the area of the pond would prevent sediment fines from entering the pond and clogging the basin floor. The existing pond has concrete pilot channels and lacks a planting plan to promote pollutant uptake and stormwater infiltration. The pond retrofit will remove the pilot channels and will include a planting plan to create a stormwater wetlands bottom. There appears to be room to expand the pond without impacting existing mature vegetation.

Cost:

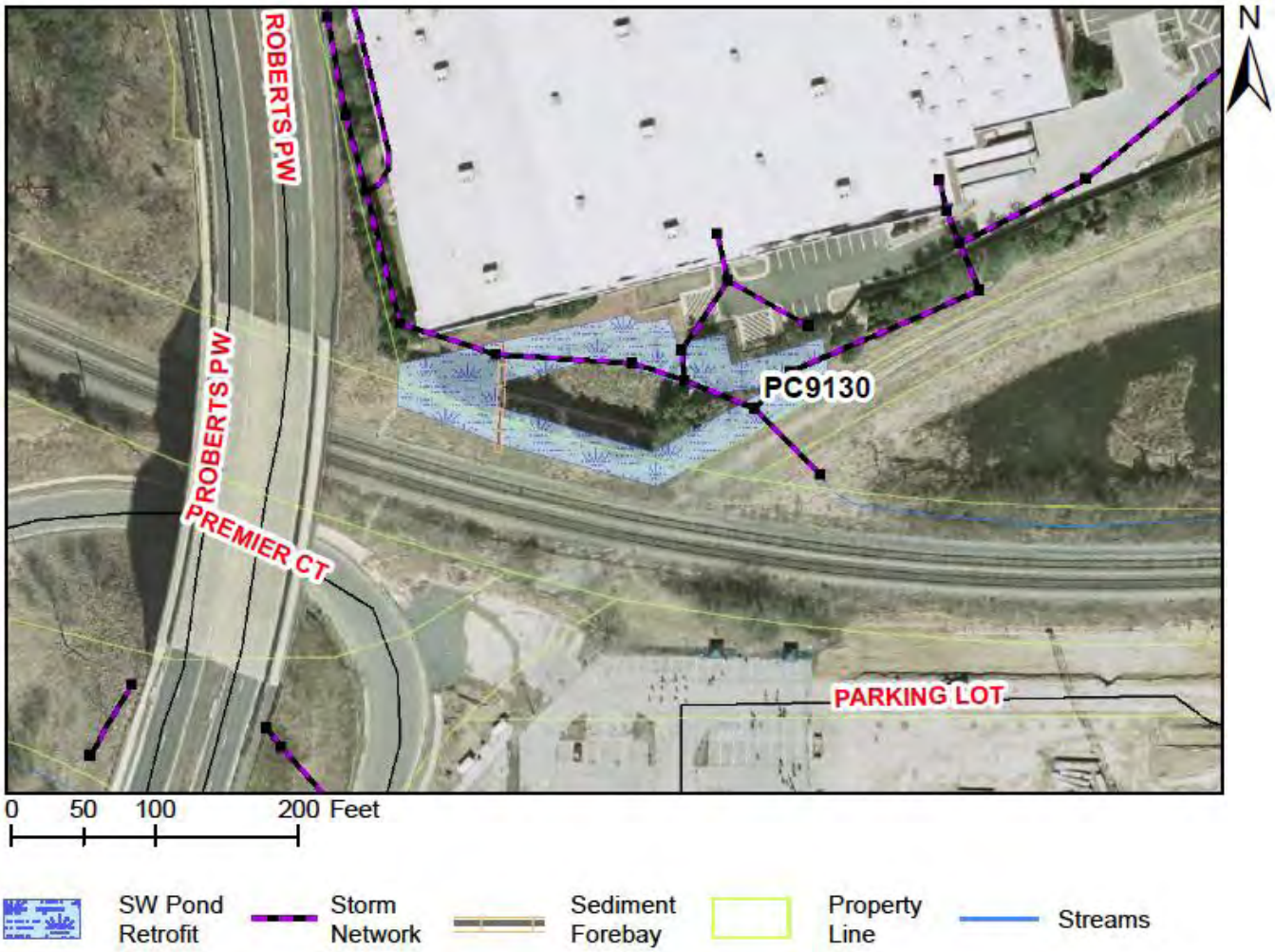
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.35	AC	$8,500	$2,975
Grading and Excavation	1800	CY	$35	$63,000
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	50	CY	$50	$2,500
Outflow Pipe	120	LF	$125	$15,000
Rip Rap Stabilization	120	SY	$100	$12,000
Organic Compost Soil Amendment	275	CY	$40	$11,000
Plantings	1	LS	5%	$6,074
Ancillary Items	1	LS	5%	$6,074
Erosion and Sediment Control	1	LS	10%	$12,148
			Base Construction Cost	$145,770
			Mobilization (5%)	$7,289
			Subtotal 1	$153,059
			Contingency (25%)	$38,265
			Subtotal 2	$191,323
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$86,095
			Total	$277,419
			Estimated Project Cost	$280,000

PC9130 Stormwater Pond Retrofit



Address: 10301 New Guinea Road, Fairfax, Virginia
Location: New Guinea Road Target
Land Owner: Private – Marshall Field Stores, Inc, Target Corporation
PIN: 0772 01 0013C
Control Type: Water quality and quantity control
Drainage Area: 12.24 acres
Receiving Waters: Tributary of Sideburn Branch

Description: This project proposes to retrofit an existing dry pond into an extended detention pond with a sediment forebay. The pond is located at the south side of the Target shopping center. Stormwater runoff is collected in the parking lot through storm inlets and conveyed to the existing pond for treatment. This retrofit will improve stormwater runoff quality by using a sediment forebay to pretreat runoff. The pond's detention time will be increased to allow more pollutants to settle out and break down through biological processes.



Project Benefits: The addition of the sediment forebay will provide for more particulate pollution deposition. The retrofit of the pond will increase the detention time of stormwater before it is released downstream. This will help protect the channel downstream of the pond. Below are the project's estimated pollutant removal amounts.

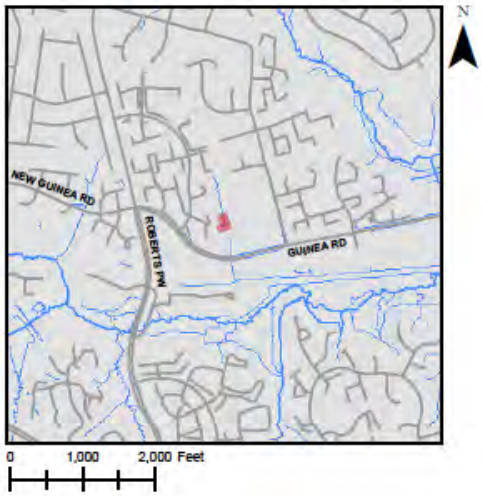
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
1.27	26.75	4.21

Project Design Considerations: The vegetation in the pond is dead and the pond has a lot of trash in it. The outfall pipe seems to be half full of trash and other debris. The pond limits are confined by a road on the west and south and by a building on the north. The only storage expansion availabe is to the east. The sediment forebays and regular maintenance would help with the trash and debris issues. This project would include removal of the concrete pilot channels and landscaping plan that would try to incorporate the existing vegetation. Records show the exisitng pond is in an easement.

Cost:

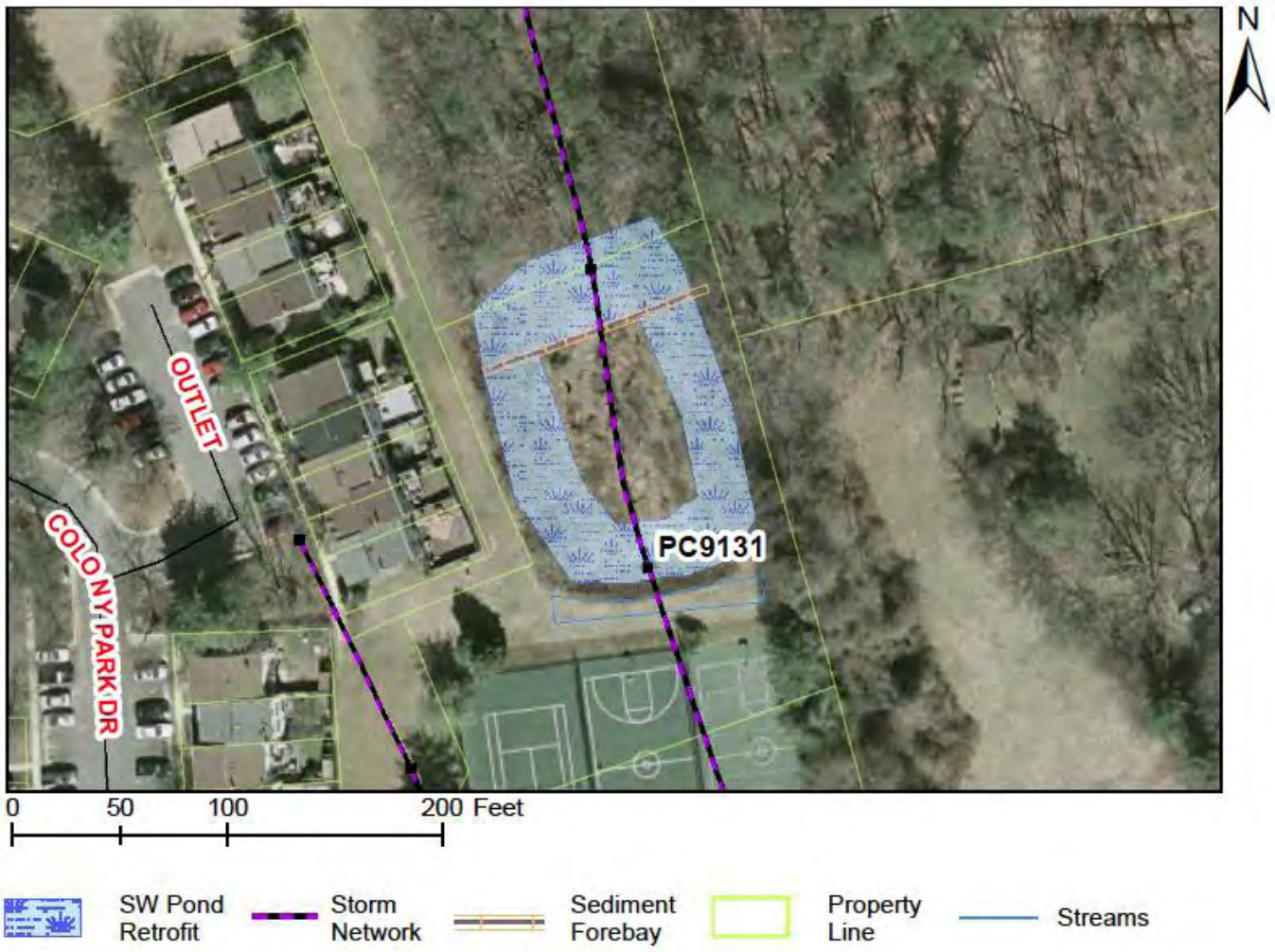
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.35	AC	$8,500	$2,975
Grading and Excavation	1300	CY	$35	$45,500
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	25	CY	$50	$1,250
Outflow Pipe	150	LF	$125	$18,750
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	275	CY	$40	$11,000
Plantings	1	LS	5%	$4,974
Ancillary Items	1	LS	5%	$4,974
Erosion and Sediment Control	1	LS	10%	$9,948
			Base Construction Cost	$119,370
			Mobilization (5%)	$5,969
			Subtotal 1	$125,339
			Contingency (25%)	$31,335
			Subtotal 2	$156,673
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$70,503
			Total	$227,176
			Estimated Project Cost	$230,000

PC9131 Stormwater Pond Retrofit



Address: Behind 10268 Colony Park Drive, Fairfax, Virginia
Location: Pond near Colony Park Dr.
Land Owner: Private – Woodlynne Community Association
PIN: 0772 05 F
Control Type: Water quality and quantity control
Drainage Area: 47.26 acres
Receiving Waters: Tributary of Sideburn Branch

Description: This large dry pond behind a residential community is currently very well vegetated. This pond retrofit will modify the exisitng discharge structure to create an extended detention dry pond with sediment forebay. The primary indicators are pollutants, including nitrogen, phosphorus and total suspended solids. The large drainage area captures runoff from dense residential, single family residential, roadways and wooded areas.



Project Benefits: Extending the pond detention time will help reduce downstream erosion and promote particulant pollutant settlement in the pond. The new forebay will capture a majority of the sediment in the roadway runoff to the pond, reducing major pond maintenance and improving removal of particulate pollutants. Below are the project's estimated pollutant removal amounts.

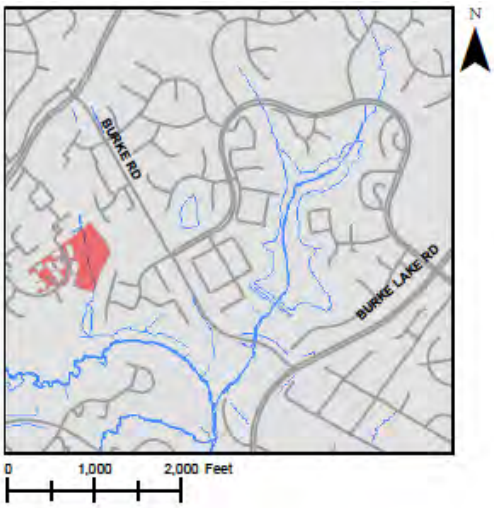
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
3.26	60.53	11.44

Project Design Considerations: The pond is entirely on Woodlynne Community Association property. Records show no easements. Sediment forebay should account for approximately 10% of pond area. Due to increasing the stormwater's detention time and installing the sediment forebay the pond size will probably need to be enlarged as shown on the project area map. Area is very well vegetated. Efforts must be made to minimize impacts to mature vegetation, however some impacts will be made. The landscaping plan should allow the pond to mature into a native forest in the right places yet keep mowable turf along the embankment and all access areas.

Cost:

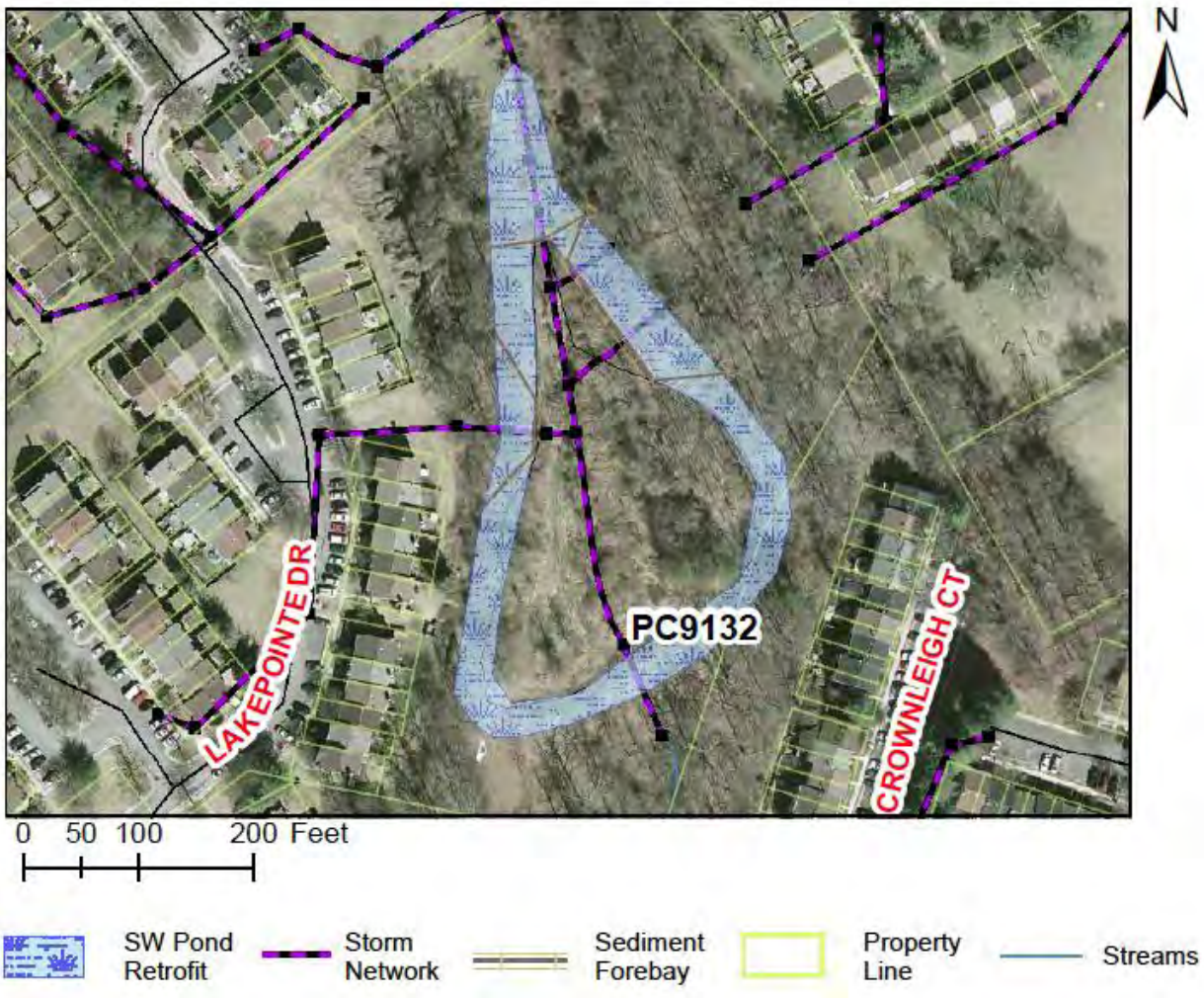
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.25	AC	$8,500	$2,125
Grading and Excavation	1200	CY	$35	$42,000
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	30	CY	$50	$1,500
Outflow Pipe	75	LF	$125	$9,375
Rip Rap Stabilization	100	SY	$100	$10,000
Organic Compost Soil Amendment	200	CY	$40	$8,000
Plantings	1	LS	5%	$4,400
Ancillary Items	1	LS	5%	$4,400
Erosion and Sediment Control	1	LS	10%	$8,800
			Base Construction Cost	$105,600
			Mobilization (5%)	$5,280
			Subtotal 1	$110,880
			Contingency (25%)	$27,720
			Subtotal 2	$138,600
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$62,370
			Total	$200,970
			Estimated Project Cost	$210,000

PC9132 Stormwater Pond Retrofit



Address: 9713 Lakepointe Dr., Burke, Virginia
Location: Pond behind Houses along Lakepointe Dr.
Land Owner: Private – Lakepointe Townhome Association
PIN: 0781 16 H
Control Type: Water quality and quantity control
Drainage Area: 71.39 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project is the large pond behind Lakepointe Drive. The project proposes the retrofit of the pond to create an extended detention dry pond with a sediment forebay. The primary indicators are pollutants including nitrogen, phosphorus and total suspended solids. The retrofit will modify the existing pond to provide adequate downstream channel protection and allow for better function of temporary ponding using a control structure, which enables particulate settlement.



Project Benefits: The retrofit will modify the existing pond to provide adequate downstream channel protection and allow for better function of temporary ponding using a control structure, which enables particulate settlement. Sediment forebays will reduce debris and coarse sediment in the pond. This will reduce costly maintenance and improve water quality. The planting in the proposed aquatic bench will increase the ponds biological uptake of pollutants, such as nitrogen and phosphorus. Below are the project's estimated pollutant removal amounts.

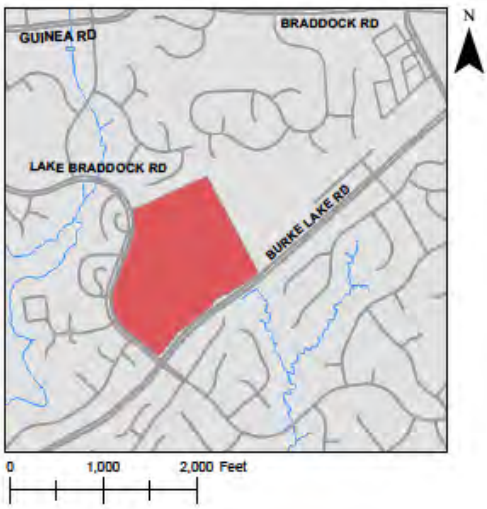
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
5.89	106.34	20.62

Project Design Considerations: This project is located on private property owned by Lakepointe Townhome Association. Potential for pond expansion is diminished due to existing vegetation. Efforts should be made to have minimal impacts to existing mature vegetation. Sediment forebays should be constructed for inflows that drain 10% or more of the contributing drainage area. The total area of the sediment forebays should be approximately 10% of the pond's surface.

Cost:

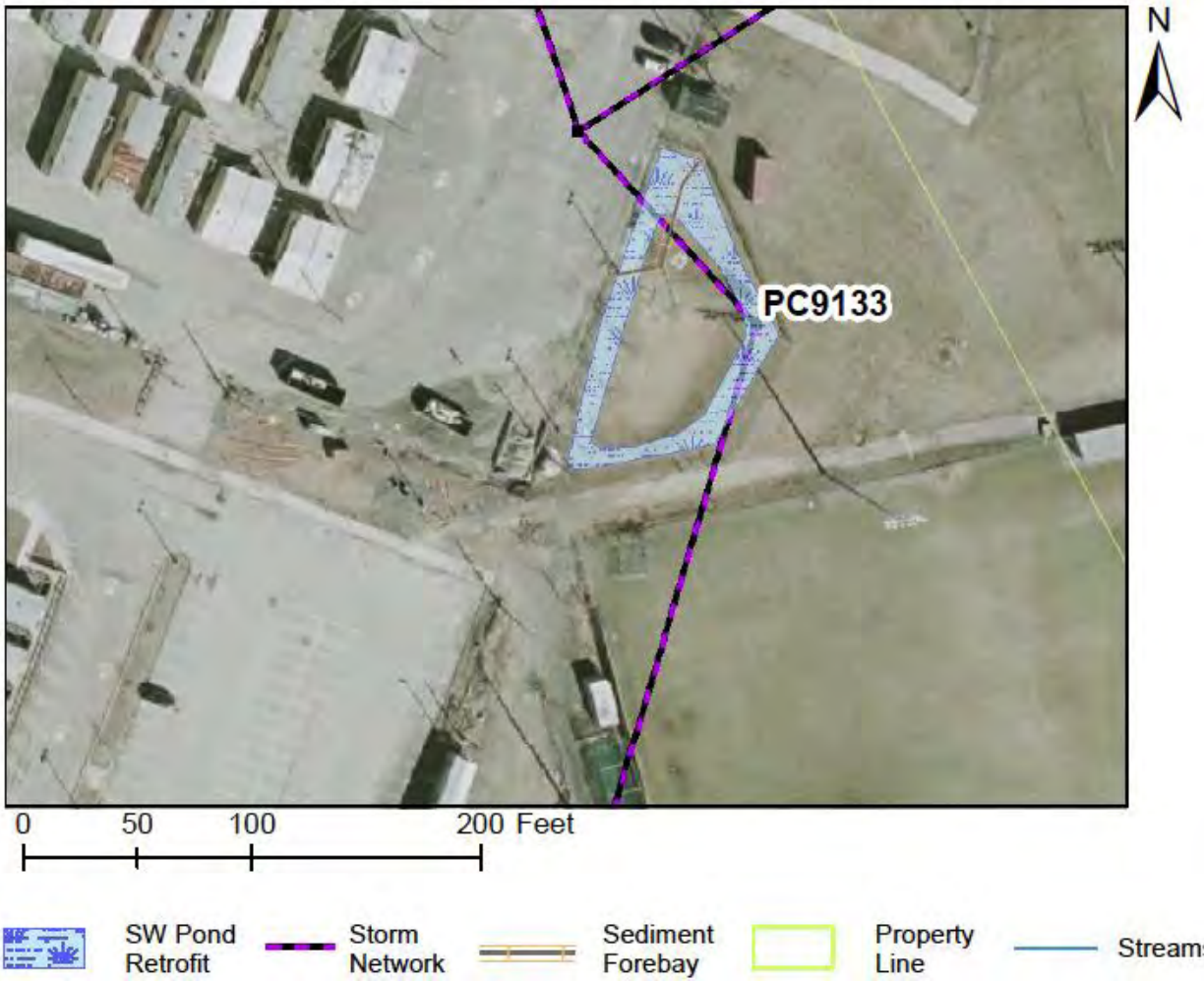
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.98	AC	$8,500	$8,330
Grading and Excavation	3500	CY	$35	$122,500
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	100	CY	$50	$5,000
Outflow Pipe	75	LF	$125	$9,375
Rip Rap Stabilization	150	SY	$100	$15,000
Organic Compost Soil Amendment	750	CY	$40	$30,000
Plantings	1	LS	5%	$10,260
Ancillary Items	1	LS	5%	$10,260
Erosion and Sediment Control	1	LS	10%	$20,521
			Base Construction Cost	$246,246
			Mobilization (5%)	$12,312
			Subtotal 1	$258,558
			Contingency (25%)	$64,640
			Subtotal 2	$323,198
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$145,439
			Total	$468,637
			Estimated Project Cost	$470,000

PC9133 Stormwater Pond Retrofit



Address: 9200 Burke Lake Rd., Burke, Virginia
Location: Lake Braddock Secondary School
Land Owner: Public/Local – School Board of Fairfax County
PIN: 0782 07 B
Control Type: Water quality and quantity control
Drainage Area: 13.96 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofit of an existing pond at Lake Braddock Secondary School to create an extended detention dry pond with a sediment forebay. Pond receives runoff from a fairly large impervious drainage area, including the school and adjacent residential area to the north. The pond will be retrofitted into an extended detention pond by modifying the existing discharge structure to increase the time stormwater remains in the pond. The pond size will be enlarged to handle the larger detention volume. The primary indicators are pollutants, including nitrogen, phosphorus and total suspended solids.



Project Benefits: Extending the pond detention time will provide better downstream channel protection and promote settlement of particulate pollutants. Installing a sediment forebay will reduce the debris and coarse sediment in the pond, which will reduce pond maintenance. Below are the project's estimated pollutant removal amounts.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.69	10.06	2.23

Project Design Considerations: Pond is located at Lake Braddock Secondary School. County records show no existing easements for the pond. The existing pond is behind a fence close to playing fields. The sediment forebay should account for approximately 10% of the pond area. The pond size would be increased as shown on the project map. The vegetative buffer should be 10-15' off of the top of bank. Efforts should be made to minimize impacts to existing mature vegetation.

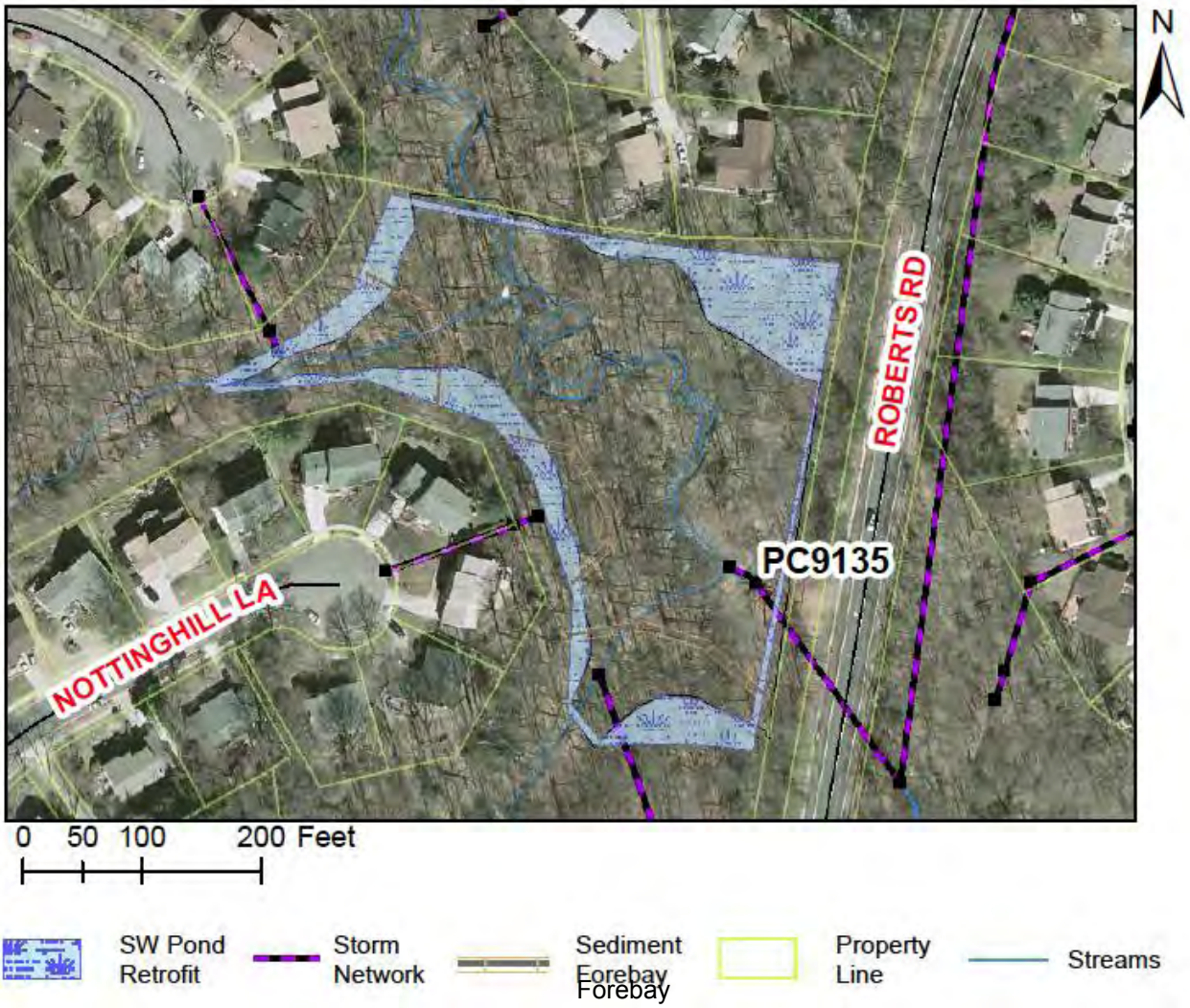
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.1	AC	$8,500	$850
Grading and Excavation	510	CY	$35	$17,850
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	20	CY	$50	$1,000
Outflow Pipe	75	LF	$125	$9,375
Rip Rap Stabilization	75	SY	$100	$7,500
Organic Compost Soil Amendment	65	CY	$40	$2,600
Plantings	1	LS	5%	$2,459
Ancillary Items	1	LS	5%	$2,459
Erosion and Sediment Control	1	LS	10%	$4,918
			Base Construction Cost	$59,010
			Mobilization (5%)	$2,951
			Subtotal 1	$61,961
			Contingency (25%)	$15,490
			Subtotal 2	$77,451
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$34,853
			Total	$112,303
			Estimated Project Cost	$120,000

PC9135 Stormwater Pond Retrofit

Address: Behind 5220 Nottinghill Lane, Fairfax, Virginia
Location: Pond along Roberts Road
Land Owner: Private – Kings Park West Community Association
PIN: 0684 09 C
Control Type: Water quality and quantity control
Drainage Area: 145.21 acres
Receiving Waters: Tributary of Rabbit Branch

Description: A dry pond retrofit is proposed east of Nottinghill Lane and west of Roberts Road. The pond is upstream of a culvert under Roberts Road, which outfalls to a stream on the other side of the road. This project proposes to create an extended detention dry pond with sediment forebay. The primary indicators are nitrogen, phosphorus and total suspended solids.



Project Benefits: This retrofit will provide adequate downstream channel protection and allow for better function of temporary ponding using a control structure, which promotes deposition of particulate pollutants. Implementation of a sediment forebay will increase the pollutant removal benefits of the stormwater pond. Below are the project's estimated pollutant removal amounts.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
7.95	106.09	23.07

Project Design Considerations: Very large drainage area outfalling to the pond, including large school. Pond is on private property owned by Kings Park West Community Association and according to County-provided GIS data, there are no easements on site. The sediment forebays should account for approximately 10% of the pond area. The vegetative buffer should be 10-15' off of the top of bank. Efforts should be made to minimize impacts to existing mature vegetation.

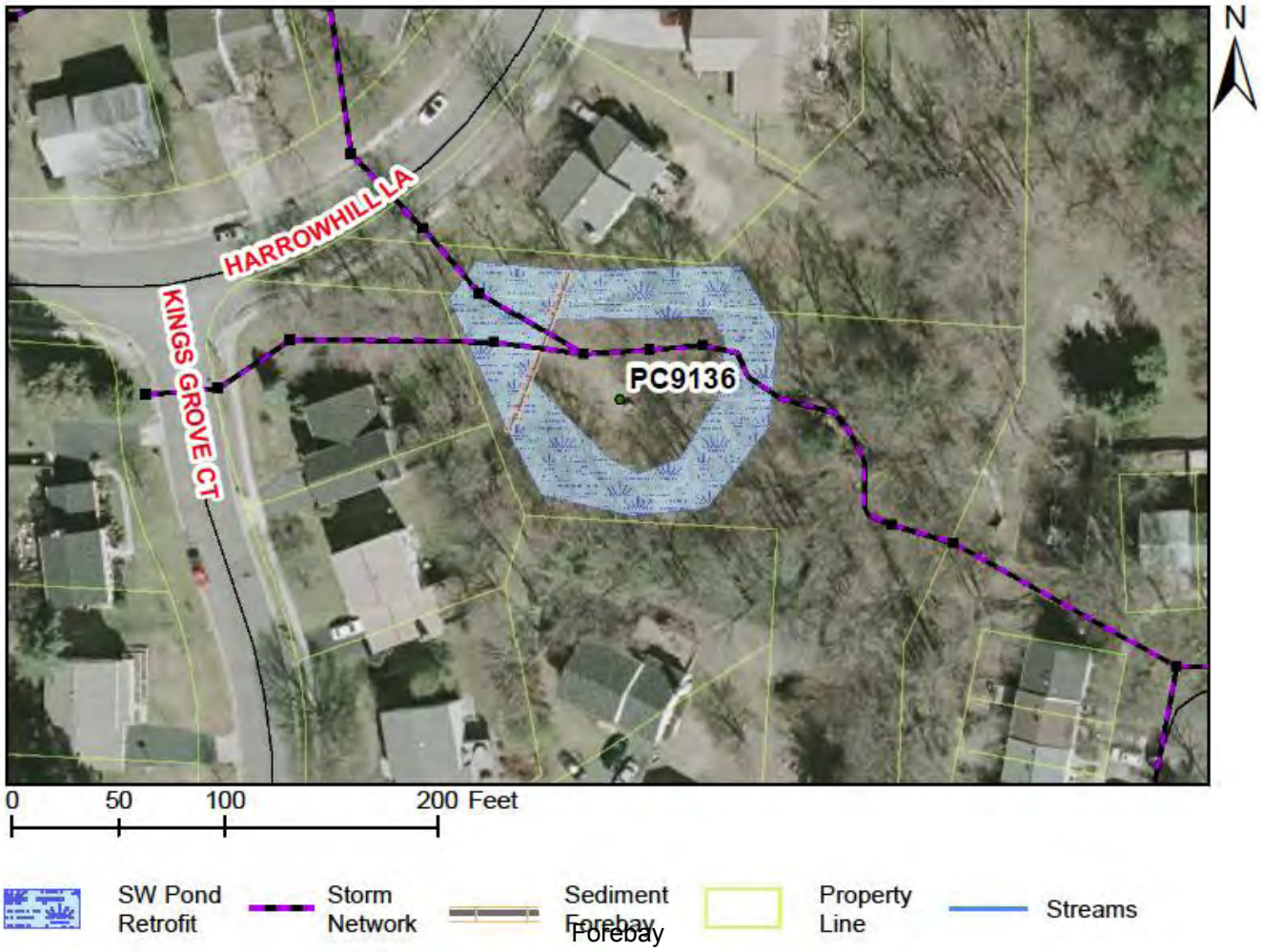
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.75	AC	$8,500	$6,375
Grading and Excavation	4400	CY	$35	$154,000
Structural BMP Retrofit and Incidentals	1	LS	$20,000	$20,000
Embankment	115	CY	$50	$5,750
Outflow Pipe	50	LF	$125	$6,250
Rip Rap Stabilization	200	SY	$100	$20,000
Organic Compost Soil Amendment	550	CY	$40	$22,000
Plantings	1	LS	5%	$11,719
Ancillary Items	1	LS	5%	$11,719
Erosion and Sediment Control	1	LS	10%	$23,438
			Base Construction Cost	$281,250
			Mobilization (5%)	$14,063
			Subtotal 1	$295,313
			Contingency (25%)	$73,828
			Subtotal 2	$369,141
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$166,113
			Total	$535,254
			Estimated Project Cost	$540,000

PC9136 Stormwater Pond Retrofit

Address: Behind 5120 Dahlgreen Place, Burke, Virginia
Location: Dahlgreen Place Playground
Land Owner: Private – Queens Gate Homeowners Association, Kings Grove Community Association
PIN: 0693 16 B, 0693 10 A1
Control Type: Water quality and quantity control
Drainage Area: 8.70 acres
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the retrofit of an existing pond near Dahlgreen Place Playground. The existing pond will be modified to create an extended detention dry pond with a sediment forebay. The primary indicators are pollutants including nitrogen, phosphorus and total suspended solids. The retrofit will modify the existing control structure to increase the detention time of stormwater runoff. This will reduce downstream channel erosion and allow more time for particulate pollutants to settle out.



Project Benefits: The enlarged pond and modified outfall structure will increase the detention time for stormwater. This will help lessen stream erosion downstream. Also, the increased detention time will increase pollutant settling and biological uptake of the pollutants. Below are the project's estimated pollutant removal amounts.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.33	6.61	1.19

Project Design Considerations: The pond size will probably need to be increased to provide adequate detention time. The current pond size is limited on the north, west and south by single family homes. Therefore the pond will have to be enlarged on the east side. Records show that the pond is located in a storm drain easement. The easement will have to be enlarged as well. To access the pond on the north side an easement on the Queens Gate Homeowners Association open space may need to be obtained. A channel is deeply cut on the side of pond. This will have to be addressed. The pond has two inflows and will require a sediment forebay, and the existing control structure will need to be modified. The existing vegetation should be retained as much as possible when the pond is expanded. The landscaping plan should allow the pond to mature into a native forest in the right places yet keep mowable turf along the embankment and all access areas.

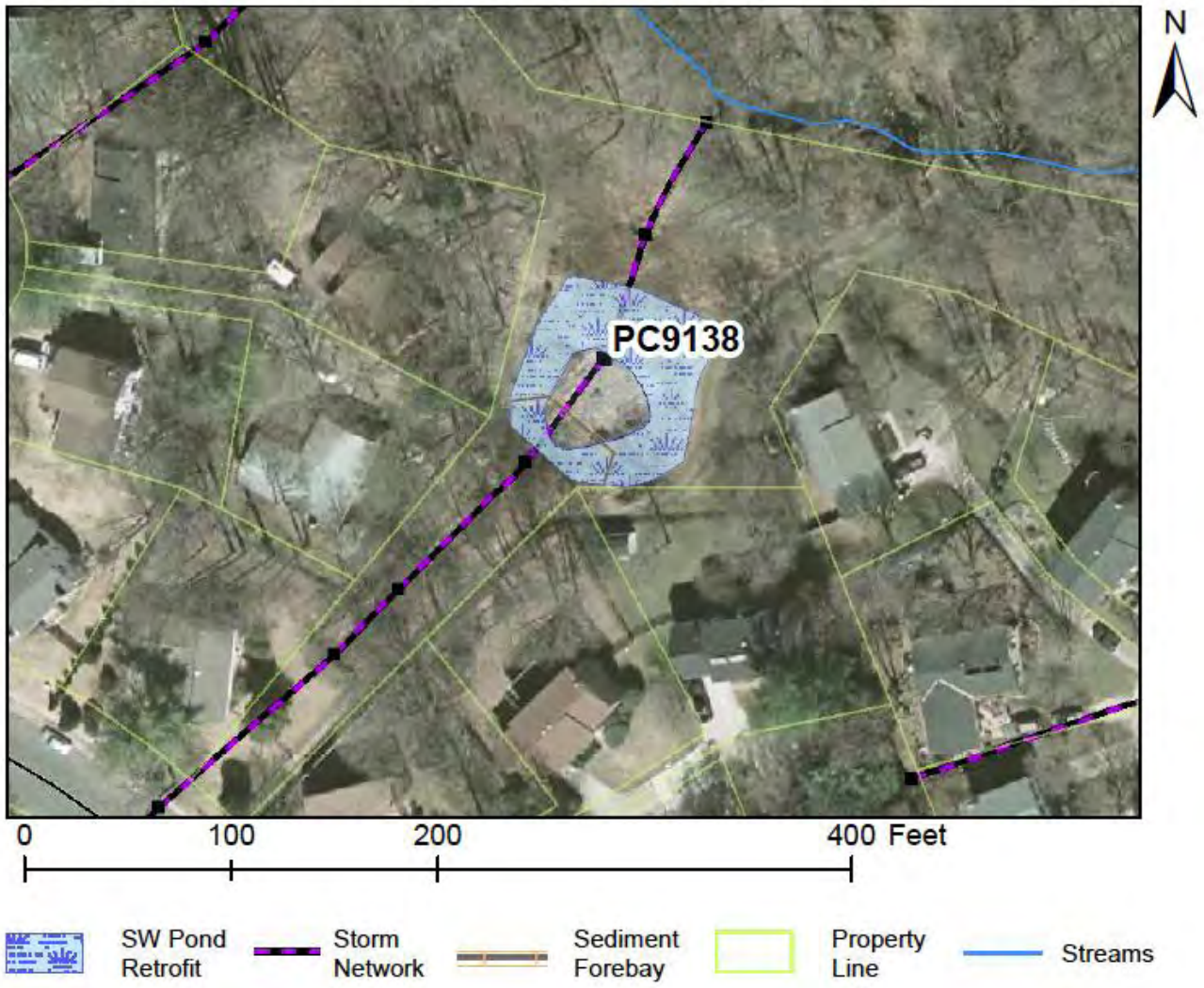
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.22	AC	$8,500	$1,870
Grading and Excavation	1370	CY	$35	$47,950
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	55	CY	$50	$2,750
Outflow Pipe	50	LF	$125	$6,250
Rip Rap Stabilization	50	SY	$100	$5,000
Organic Compost Soil Amendment	170	CY	$40	$6,800
Plantings	1	LS	5%	$4,031
Ancillary Items	1	LS	5%	$4,031
Erosion and Sediment Control	1	LS	10%	$8,062
			Base Construction Cost	$96,744
			Mobilization (5%)	$4,837
			Subtotal 1	$101,581
			Contingency (25%)	$25,395
			Subtotal 2	$126,977
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$57,139
			Total	$184,116
			Estimated Project Cost	$190,000

PC9138 Stormwater Pond Retrofit

Address: Behind 10305 Nantucket Court, Fairfax, Virginia
Location: Pond near Nantucket Court
Land Owner: Private – Kings Park West Community Association
PIN: 0682 05 A
Control Type: Water quality and quantity control
Drainage Area: 4.73 acres
Receiving Waters: Tributary of Rabbit Branch

Description: The proposed stormwater pond retrofit is east of Nantucket Court and northwest of Allenby Road. The pond, 0036DP, collects runoff from adjacent residential neighborhoods. This project proposes to retrofit the pond to create an extended detention dry pond with sediment forebay. The primary indicators are pollutants, including nitrogen, phosphorus and total suspended solids.



Project Benefits: Extending the pond's detention time will provide better downstream channel protection and promote settlement of particulate pollutants. Installing a sediment forebay will decrease debris and coarse sediment in the pond, which will increase the benefits of the stormwater pond. Below are the project's estimated pollutant removal amounts.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.05	1.08	0.20

Project Design Considerations: Pond is on property owned by King Park West Community Association. There is adequate room on site for pond expansion, to the north and east, and some to the west. See hatched area on project map. Efforts should be made to minimize impacts to existing mature vegetation. The sediment forebays should account for approximately 10% of the pond area. The vegetative buffer should be 10-15' off of the top of bank.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.13	AC	$8,500	$1,105
Grading and Excavation	840	CY	$35	$29,400
Structural BMP Retrofit and Incidentals	1	LS	$10,000	$10,000
Embankment	25	CY	$50	$1,250
Outflow Pipe	50	LF	$125	$6,250
Rip Rap Stabilization	50	SY	$100	$5,000
Organic Compost Soil Amendment	100	CY	$40	$4,000
Plantings	1	LS	5%	$2,850
Ancillary Items	1	LS	5%	$2,850
Erosion and Sediment Control	1	LS	10%	$5,701
			Base Construction Cost	$68,406
			Mobilization (5%)	$3,420
			Subtotal 1	$71,826
			Contingency (25%)	$17,957
			Subtotal 2	$89,783
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$40,402
			Total	$130,185
			Estimated Project Cost	$140,000

PC9139 Stormwater Pond Retrofit

Address: 10697 Braddock Rd., Fairfax, Virginia
Location: University Mall Shopping Center
Land Owner: Private – Private Owner
PIN: 0681 01 0009
Control Type: Water quality and quantity control
Drainage Area: 21.85 acres
Receiving Waters: Tributary of Sideburn Branch

Description: Existing pond receives runoff from shopping center and parking lot. The stormwater is conveyed in a closed system from north to west. Runoff is also received from a subdivision to the east. The primary indicators are pollutants including nitrogen, phosphorus and total suspended solids. This project proposes retrofitting the existing pond to create an extended detention dry pond with sediment forebays.

Project Benefits: Extending the pond's detention time will provide better channel protection and promote particulate pollutant settlement. Installing the sediment forebays will reduce debris and coarse sediment in the pond and will improve the infiltration of the pond. Since this pond already provides some water quality the TSS removal will remain the same, but the TN removal and TP removal will increase by 25% and 10% respectively. Below are the project's estimated pollutant removal amounts. Below are the project's estimated pollutant removal amounts

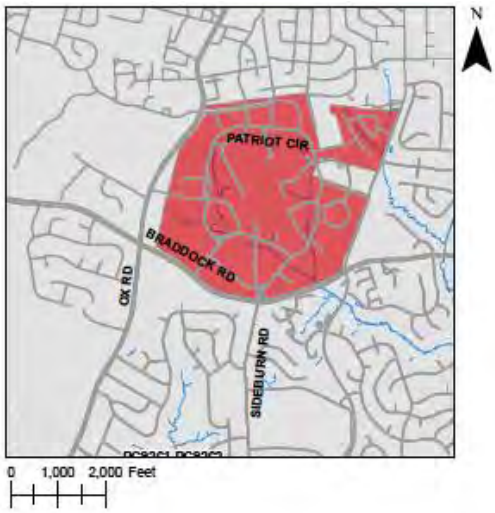
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
0.00	35.38	1.59

Project Design Considerations: Project is on private property. Property owner same as that of the shopping center area. Records show no easements on or near the property. Pond is behind a large brick fence. A large amount of impervious area drains to the pond from shopping center buildings and parking area. Efforts should be made to minimize impacts to existing mature vegetation. The sediment forebays should account for approximately 10% of the pond area. The vegetative buffer should be 10-15' off of the top of bank.

Cost:

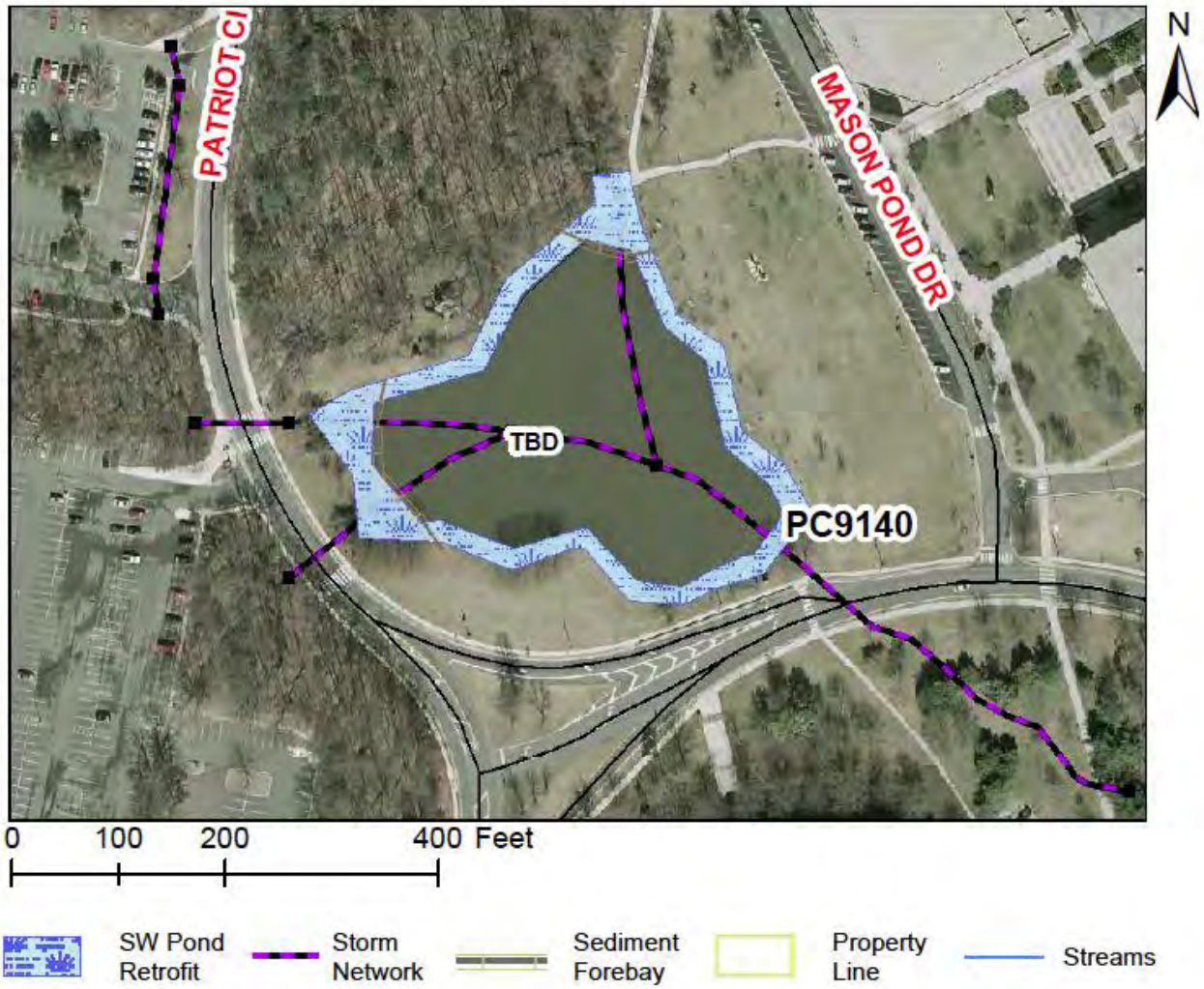
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.25	AC	$8,500	$2,125
Grading and Excavation	1500	CY	$35	$52,500
Structural BMP Retrofit and Incidentals	1	LS	$15,000	$15,000
Embankment	30	CY	$50	$1,500
Outflow Pipe	50	LF	$125	$6,250
Rip Rap Stabilization	75	SY	$100	$7,500
Organic Compost Soil Amendment	190	CY	$40	$7,600
Plantings	1	LS	5%	$4,624
Ancillary Items	1	LS	5%	$4,624
Erosion and Sediment Control	1	LS	10%	$9,248
			Base Construction Cost	$110,970
			Mobilization (5%)	$5,549
			Subtotal 1	$116,519
			Contingency (25%)	$29,130
			Subtotal 2	$145,648
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$65,542
			Total	$211,190
			Estimated Project Cost	$220,000

PC9140 Stormwater Pond Retrofit



Address: Intersection of Mason Pond Dr. and Roanoke River Lane, Fairfax, Virginia
Location: Pond near Roanoke River Lane
Land Owner: Public - George Mason University
PIN: 0682 01 0003
Control Type: Water quality and quantity control
Drainage Area: 140.03 acres
Receiving Waters: Tributary of Rabbit Branch

Description: This project proposes the retrofit of an existing wet pond at George Mason University, near Mason Pond Drive and Roanoke River Lane, to create a wetland system with sediment forebays and bench planting. The sediment forebays will provide pretreatment of stormwater runoff and the bench planting will increase the pollutant removal. The primary problem indicators are pollutants, including nitrogen, phosphorus and total suspended solids.



Project Benefits: This retrofit will modify the existing pond to increase pollutant removal and to provide adequate channel protection above the permanent pool. It will also create an environment for gravitational settling, biological uptake and microbial activity. Below are the project's estimated pollutant removal amounts.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal l(Lbs/Yr)
8.67	174.61	48.44

Project Design Considerations: A significant amount of impervious area drains to this pond, so additional treatment would be beneficial. The sediment forebays should be 10% as large as the pond. The aquatic bench should be planted 10 to 15' inward from the water's edge. The vegetative buffer should be 10 to 15' outward from the water's edge. Records do not currently show an existing easement, but the entire area is owned by George Mason University. The pond receives runoff from three pipes, and therefore would require the construction of three sediment forebays. The forebays would be created by adding berms in the pond (see map). The area of the bench plantings is shown on the map by the lighter portion of the pond on the perimeter. The existing pond is the darker inner portion.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.65	AC	$8,500	$5,525
Grading and Excavation	1000	CY	$35	$35,000
Structural BMP Retrofit and Incidentals	1	LS	$20,000	$20,000
Embankment	50	CY	$50	$2,500
Outflow Pipe	150	LF	$125	$18,750
Rip Rap Stabilization	90	SY	$100	$9,000
Organic Compost Soil Amendment	500	CY	$40	$20,000
Plantings	1	LS	5%	$5,539
Ancillary Items	1	LS	5%	$5,539
Erosion and Sediment Control	1	LS	10%	$11,078
			Base Construction Cost	$132,930
			Mobilization (5%)	$6,647
			Subtotal 1	$139,577
			Contingency (25%)	$34,894
			Subtotal 2	$174,471
			Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)	$78,512
			Total	$252,982
			Estimated Project Cost	$260,000