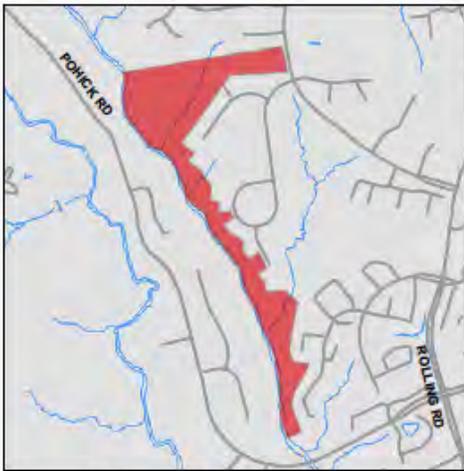
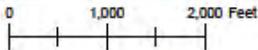


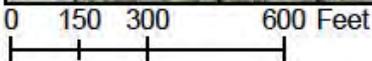
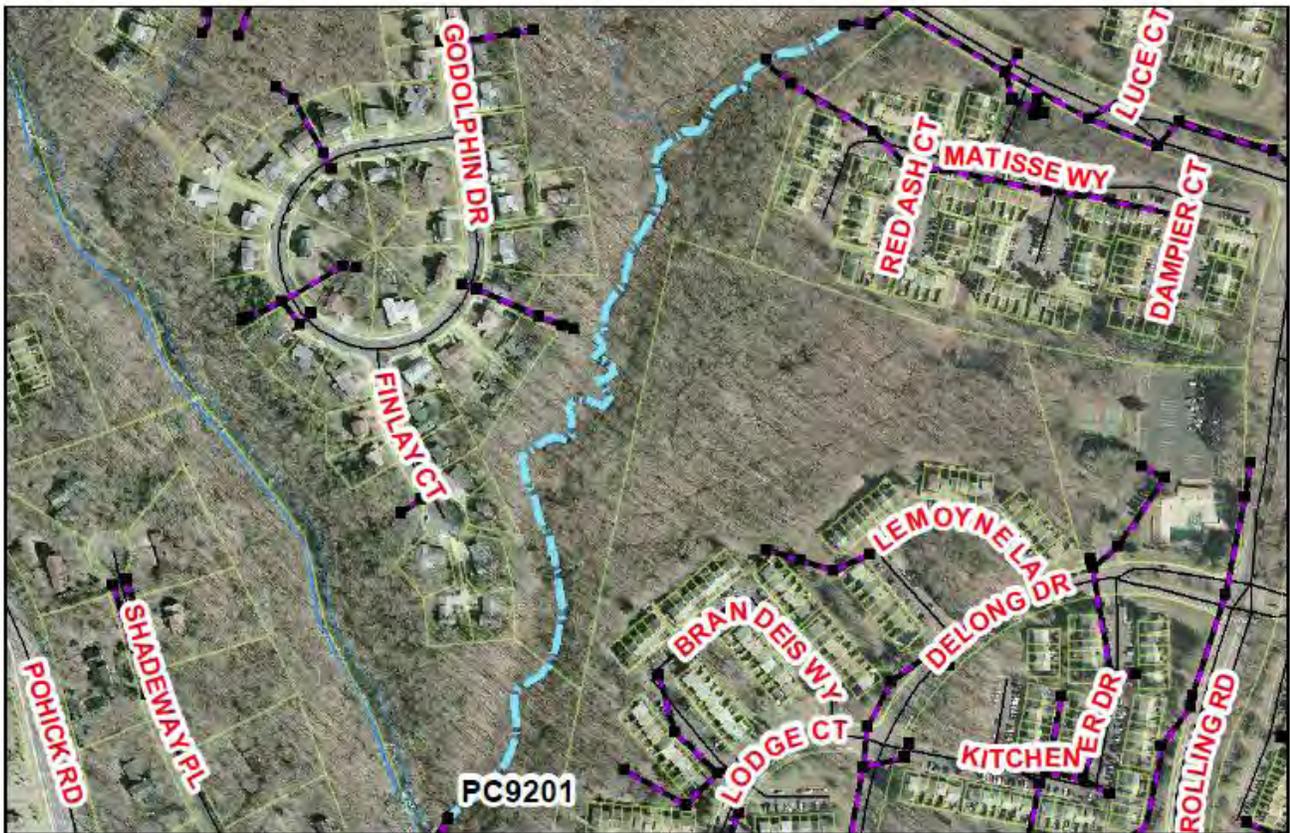
PC9201 Stream Restoration



Address: Behind 7756 Matisse Way, Springfield, Virginia
Location: Stream behind Matisse Way
Land Owner: Public/Local – FCPA
PIN: 0984 06 E, 0984 06 C
Control Type: Water quality control
Drainage Area:
Receiving Waters: Tributary of Pohick Creek



Description: This stream restoration is located west of Matisse Way and east of Godolphin Dr., and is located on Fairfax County Park Authority land. This project proposes repairing bank and bed erosion, restoring channel morphology, and reducing excessive channel meander. Stream stabilization will reduce sediment loads to the stream while maintaining capacity of the channel and controlling unwanted meander.



Project Benefits: This stream restoration will help eliminate erosion from the stream and will reduce the amount of instream sediment and the resulting pollutants. This will result in a deeper dry weather channel and better functioning stream shape. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

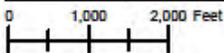
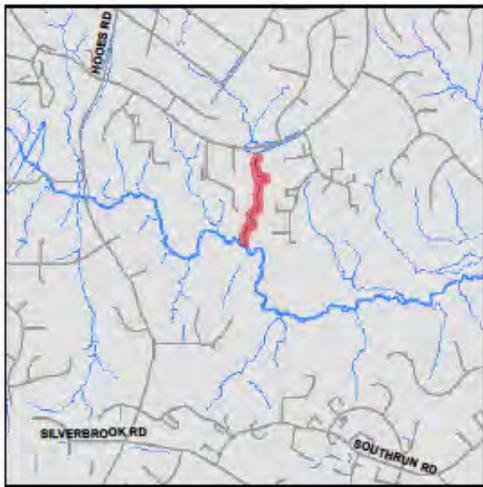
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
43.15	69.04	26.75

Project Design Considerations: The stream receives runoff from two closed storm systems at its upstream end. These outfalls are from dense townhouses with no stormwater treatment. Installing settling basins and boulder clusters would help roadway sediment settle out and reduce erosive velocities. Other measures include using streambank shaping, erosion control fabrics, and vegetation establishment.

Cost:

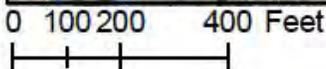
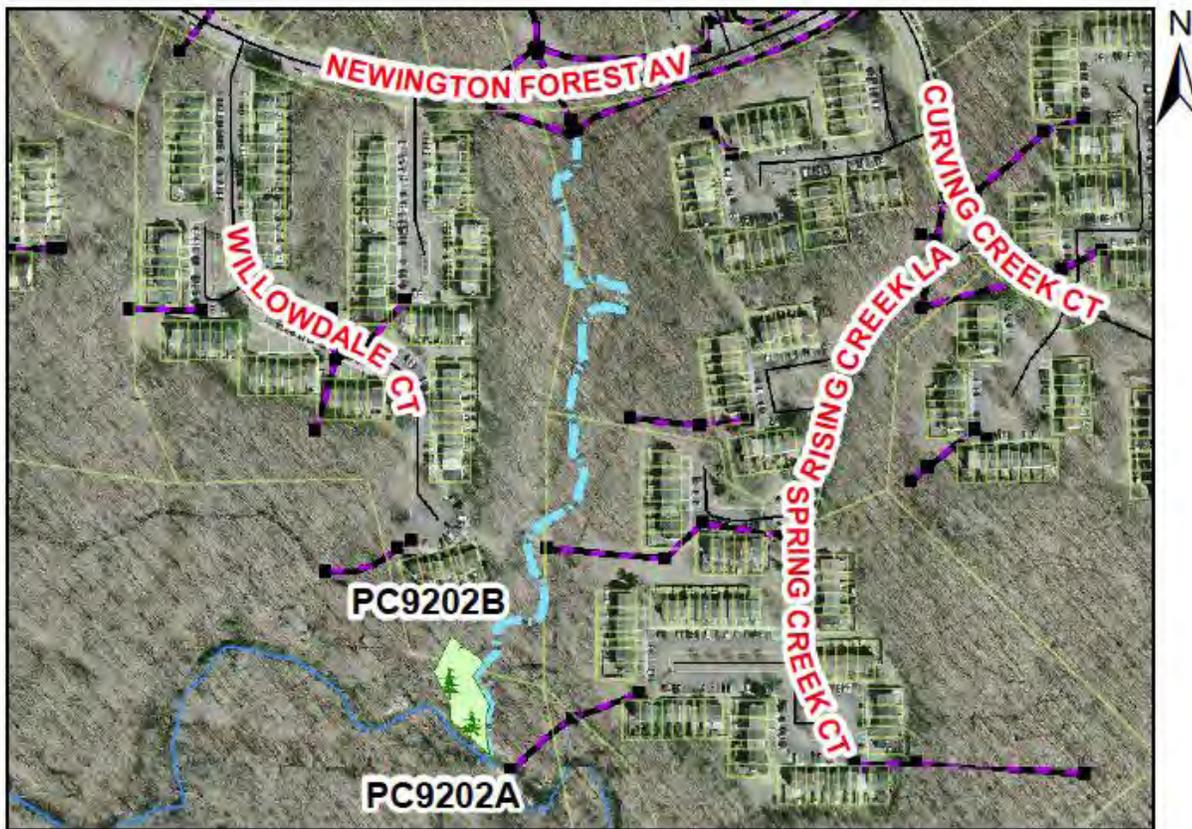
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	2381	LF	\$200	\$476,200
Clear and Grub	2.74	AC	\$10,000	\$27,382
Plantings	2.74	AC	\$25,000	\$68,454
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$67,204
Ancillary Items	1	LS	5%	\$33,602
Base Construction Cost				\$772,841
Mobilization (5%)				\$38,642
Subtotal 1				\$811,483
Contingency (25%)				\$202,871
Subtotal 2				\$1,014,353
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$456,459
Total				\$1,470,812
Estimated Project Cost				\$1,480,000

PC9202 Stream Restoration Suite



Address: Behind 8181 Willowdale Court, Fairfax, Virginia
Location: Near South Run Stream Valley Park
Land Owner: Public/Private - Fairfax County Park Authority, Newington Forest Community Association,
PIN: 0983 02 0001B, 0981 04 W, 0981 04 T, 0983 02 V
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of South Run

Description: Subproject A is a stream restoration and will repair bank and bed erosion in the stream west of Spring Creek Court and southeast of Willowdale Court. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment. Subproject B is a buffer repair near the downstream end of the stream restoration. This buffer will provide additional treatment for runoff from the adjacent townhouses. The indicators are stream bank buffer deficiencies in headwater riparian habitat.



- Stream Restoration
- Buffer Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Stream stabilization will reduce sediment loads to the stream while maintaining capacity of the stream channel and controlling unwanted meander. The buffer repair will re-establish the riparian protection areat (RPA). Increasing vegetation will provide additional filtration of pollutants and will reduce runoff by intercepting water. This will increase surface storage, promote infiltration, and minimize stream erosion. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

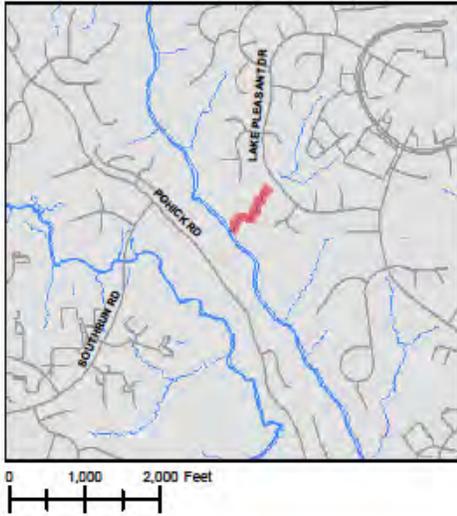
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
7.84	12.55	4.86

Project Design Considerations: Stream banks are steep and stream access is obstructed. Trees were hanging into the stream and there were many sediment deposits creating "islands." Areas were dammed. The degraded buffer area is surrounded by vegetation; therefore its deficiency is minimized. The degraded area could act as a staging point for the stream restoration. Records show no existing easements and stream appears to be in HOA open space. Project should be coordinated with outfall improvement project PC9204 (located just west of Rising Creek Court) to try and maximize the project benefits.

Cost:

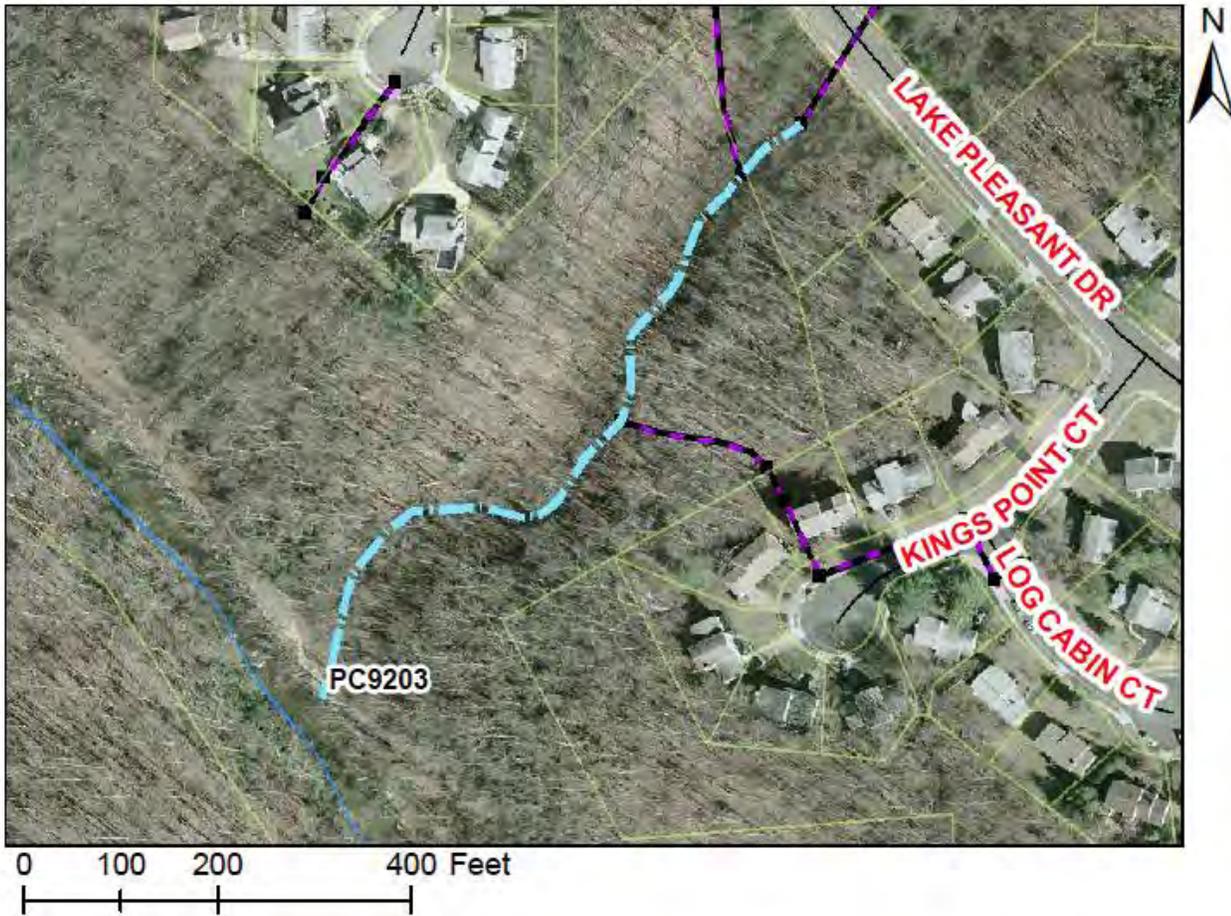
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Subproject A Stream restoration west of Spring Creek Ct.				
Construct New Channel	1510	LF	\$200	\$302,000
Clear and Grub	1.7365	AC	\$10,000	\$17,365
Plantings	1.7365	AC	\$25,000	\$43,413
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Subproject B Stream Buffer Behind Willowdale Ct.				
Plantings	0.27	AC	\$25,000	\$6,750
Organic Compost Soil Amendment	870	CY	\$40	\$34,800
Invasive Plant Eradication	1	LS	10%	\$4,155
Common Items				
Ancillary Items	1	LS	5%	\$25,424
Erosion and Sediment Control	1	LS	10%	\$50,848
Base Construction Cost				\$584,755
Mobilization (5%)				\$29,238
Subtotal 1				\$613,993
Contingency (25%)				\$153,498
Subtotal 2				\$767,491
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$345,371
Total				\$1,112,862
Estimated Project Cost				\$1,120,000

PC9203 Stream Restoration



Address: 8100 Lake Pleasant Dr. (Adj. to Kings Point Ct.), Springfield, Virginia
Location: Stream along Lake Pleasant Dr.
Land Owner: Public/Local – Fairfax County Park Authority
PIN: 0982 06 B2, 0982 06 A2
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek

Description: Stream is southwest of Lake Pleasant Drive and north of Kings Point Court. The stream conveys runoff from adjacent residential neighborhoods and flows southwest. This project proposes repairing bank and bed erosion to restore channel morphology. The primary indicator is poor channel morphology. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.



Project Benefits: Stream stabilization will help to reduce sediment loads to the stream channel and control unwanted meander. Stabilization will help in reducing stream erosion over time. Replanting will help reduce pollutant loads. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

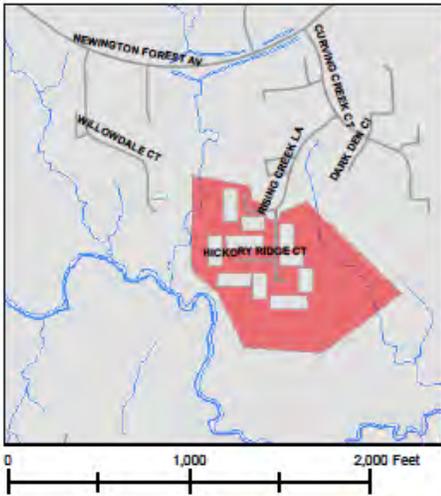
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
10.71	14.57	5.64

Project Design Considerations: While there is significant contributing impervious area, the buffer area appears well maintained. Efforts should be made to minimize the impact to this existing vegetation. A majority of the land is owned by Fairfax County Park Authority; however the farthest upstream portion is on property owned by Saratoga Community Association. No easements exist on site according to the County-provided GIS data.

Cost:

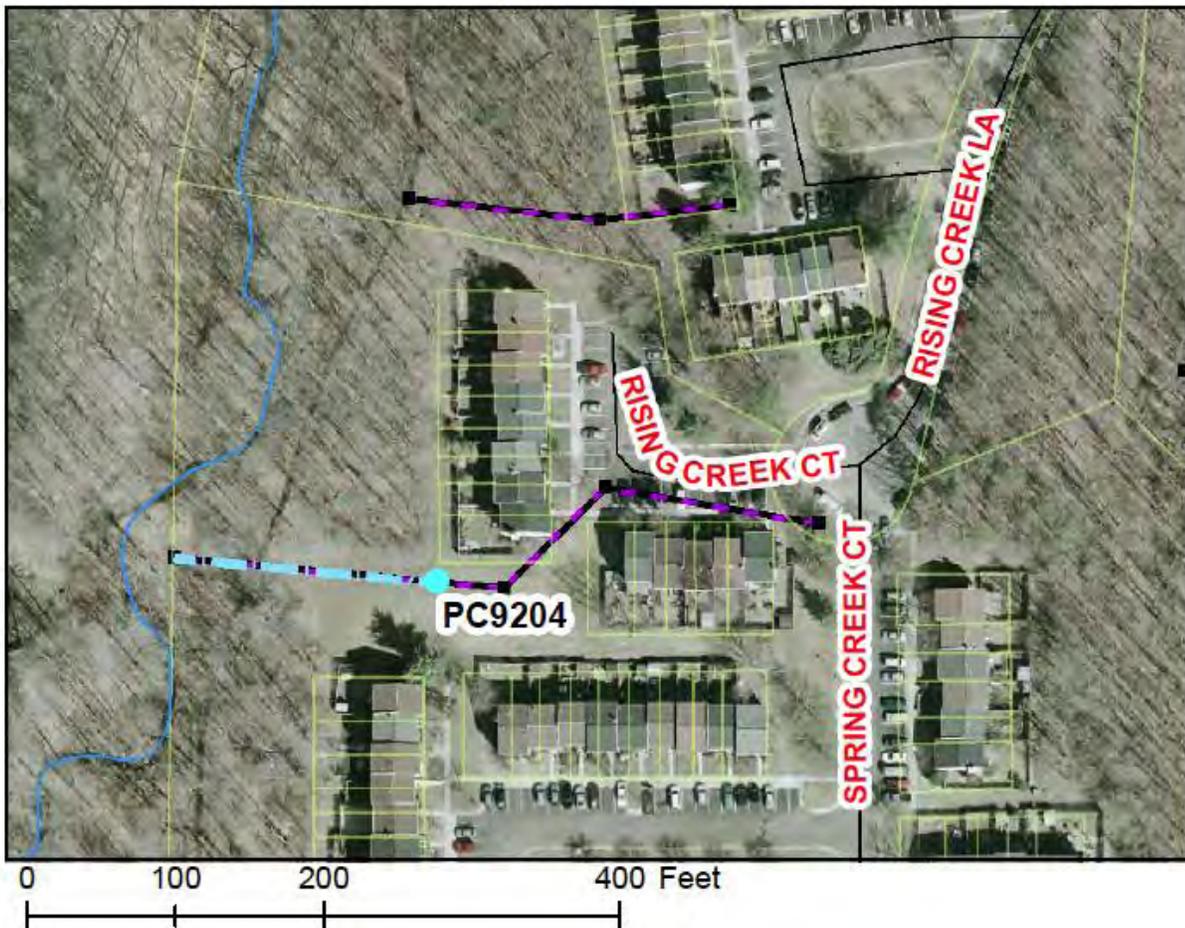
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	867	LF	\$200	\$173,400
Clear and Grub	1.00	AC	\$10,000	\$9,971
Plantings	1.00	AC	\$25,000	\$24,926
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$30,830
Ancillary Items	1	LS	5%	\$15,415
Base Construction Cost				\$354,541
Mobilization (5%)				\$17,727
Subtotal 1				\$372,268
Contingency (25%)				\$93,067
Subtotal 2				\$465,335
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$209,401
Total				\$674,736
Estimated Project Cost				\$680,000

PC9204 Stream Restoration



Address: Next to 8661 Rising Creek Court, Springfield, Virginia
Location: West of townhouses on Rising Creek Court
Land Owner: Private – Newington Forest Community Association
PIN: 0983 02 V
Control Type: Water quality control
Drainage Area: 0.74 acres
Receiving Waters: Tributary of South Run

Description: This project proposes daylighting a pipe from Rising Creek Court farther upstream with an energy dissipation device and construction of an open channel. The energy dissipation device consists of a series of step pools reinforced with either rocks or logs. The daylighting will help reduce the velocity of the water entering the stream. The primary problem indicator is poor channel morphology.



Project Benefits: Redirecting a closed system back to an aboveground channel will return the water to its natural state sooner. This will reduce runoff rates and volumes, which will help minimize stream erosion. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

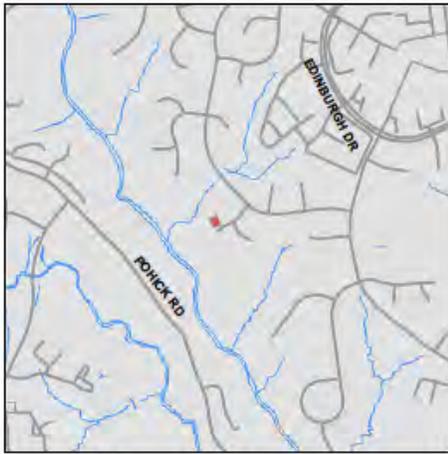
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
0.92	1.48	0.57

Project Design Considerations: The high density townhouses have a high percentage of impervious area. Much of the outfall run to be daylighted is not vegetated. The number of step pools required will be determined by the slope and length of pipe daylighted. Records do not show an existing stormwater easement, but the pipe and stream are located in the community open space. This project discharges into the stream that will be restored in project PC9202. Sequencing should be coordinated to combine efforts and minimize additional disturbances.

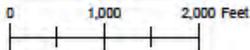
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	178	LF	\$200	\$35,600
Clear and Grub	0.20	AC	\$10,000	\$2,047
Plantings	0.20	AC	\$25,000	\$5,118
Additional Cost, First 500 LF	178	LF	\$200	\$35,600
Erosion and Sediment Control	1	LS	10%	\$7,836
Ancillary Items	1	LS	5%	\$3,918
Base Construction Cost				\$90,119
Mobilization (5%)				\$4,506
Subtotal 1				\$94,625
Contingency (25%)				\$23,656
Subtotal 2				\$118,281
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$53,227
Total				\$171,508
Estimated Project Cost				\$180,000

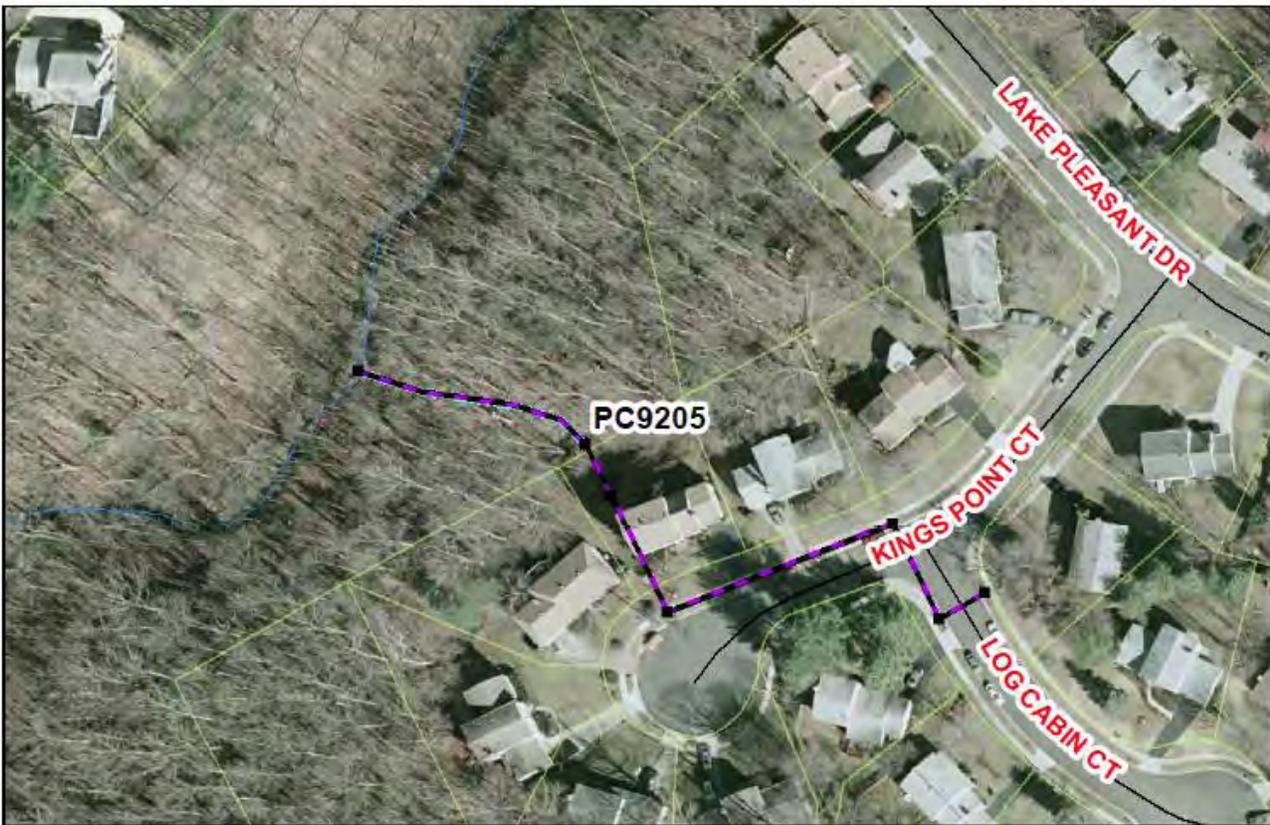
PC9205 Stream Restoration



Address: Behind 8106 Kings Point Court, Springfield, Virginia
Location: Stream near Kings Point Court
Land Owner: Public/Local – Fairfax County Park Authority
PIN: 0982 06 B2
Control Type: Water quality and quantity control
Drainage Area: 3.32 acres
Receiving Waters: Tributary of Pohick Creek



Description: Closed system collects runoff from Kings Point Court and one other cul-de-sac. The systems outfalls into a stream to the northwest. This project proposes daylighting the outfall pipe farther upstream. The primary problem indicator is poor channel morphology. This project returns the water to its natural state before entering the stream, allowing more time for the water to infiltrate and the flow velocities to decrease.



Stream Restoration Storm Network Property Line Streams

Project Benefits: Daylighting this section of the storm pipe will allow for the creation of step pools, which provides a reduction of energy in the stormwater discharge and allows for settling of some of the stormwater sediment. This project will encourage infiltration. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

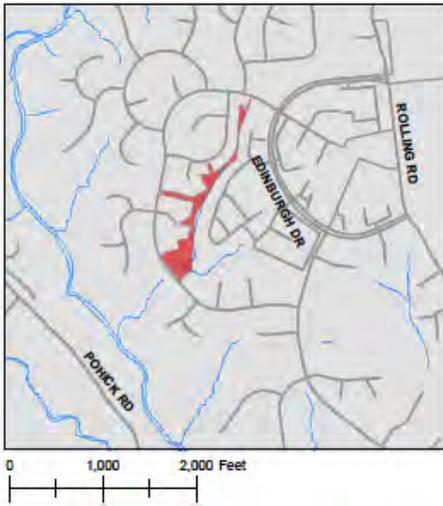
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
2.00	2.72	1.05

Project Design Considerations: This project discharges into a proposed stream restoration (PC9203). This daylighting project should be coordinated with the stream restoration project to help facilitate access to the pipe, since the pipe is located behind a single family home owned by Thomas Lambert. The slope of the land over the existing pipe is approximately 20%. A number of stepping pools will need to be used to reduce velocity of the discharge. The number of stepping pools will depend on the invert elevations of the storm pipe at the start and end of the daylighting.

Cost:

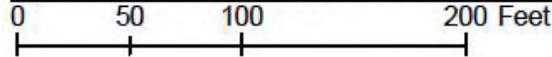
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	162	LF	\$200	\$32,400
Clear and Grub	0.19	AC	\$10,000	\$1,863
Plantings	0.19	AC	\$25,000	\$4,658
Additional Cost, First 500 LF	162	LF	\$200	\$32,400
Erosion and Sediment Control	1	LS	10%	\$7,132
Ancillary Items	1	LS	5%	\$3,566
Base Construction Cost				\$82,019
Mobilization (5%)				\$4,101
Subtotal 1				\$86,120
Contingency (25%)				\$21,530
Subtotal 2				\$107,649
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$48,442
Total				\$156,092
Estimated Project Cost				\$160,000

PC9206 Stream Restoration



Address: Next to 8021 Lake Pleasant Drive, Springfield, Virginia
Location: Stream near Lake Pleasant Dr.
Land Owner: Private – Saratoga Community Association
PIN: 0982 06 B
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek

Description: The project proposes restoring the stream just northeast of Lake Pleasant drive. The current stream has bank and bed erosion and poor channel morphology. The stream stabilization will reduce sediment loads to the stream while maintaining capacity and controlling unwanted meander. This stream segment is steep and receives runoff from townhomes and a roadway outfall. Erosion will be stabilized through the use of bank shaping, toe of slope protection, erosion control fabric, and rapid vegetation establishment.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: This stream restoration will reduce erosion and instream sediment. This will result in a deeper dry weather channel and better functioning stream shape. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

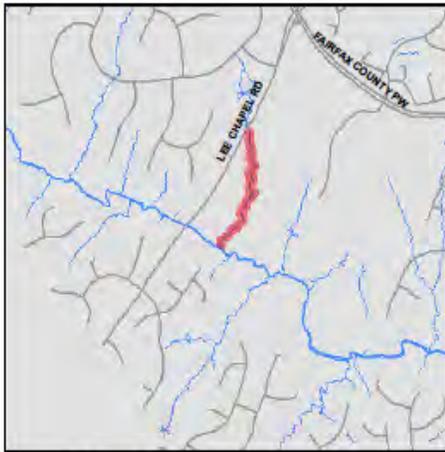
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
1.74	2.37	0.92

Project Design Considerations: This short stream segment receives flow from two branches upstream. To the north, the stream receives runoff from a row of townhouses. To the east, a cul-de-sac drains across a single family lot into the stream. The contours show the stream has a slope of approximately 7.1%. To address this steep slope, grade control measures and bank reinforcement will be required.

Cost:

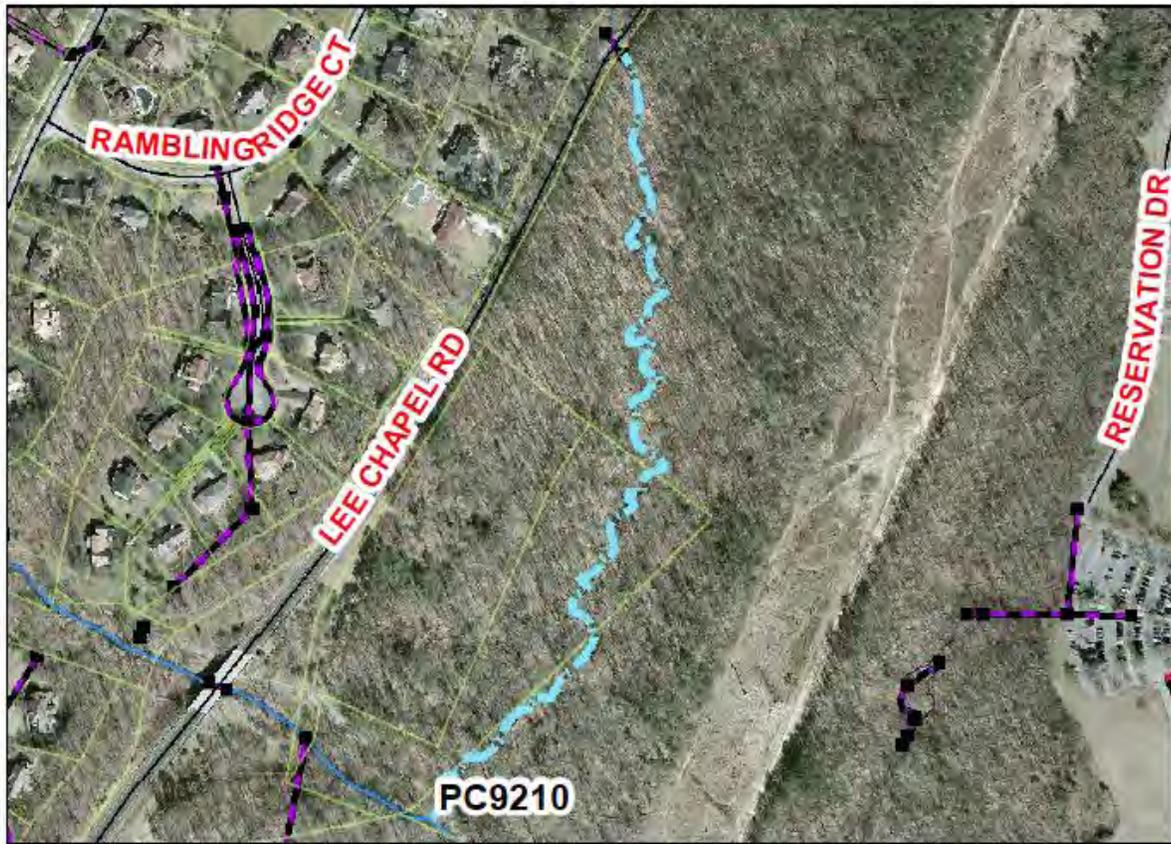
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	141	LF	\$200	\$28,200
Clear and Grub	0.16	AC	\$10,000	\$1,622
Plantings	0.16	AC	\$25,000	\$4,054
Additional Cost, First 500 LF	141	LF	\$200	\$28,200
Erosion and Sediment Control	1	LS	10%	\$6,208
Ancillary Items	1	LS	5%	\$3,104
Base Construction Cost				\$71,387
Mobilization (5%)				\$3,569
Subtotal 1				\$74,956
Contingency (25%)				\$18,739
Subtotal 2				\$93,695
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$42,163
Total				\$135,858
Estimated Project Cost				\$140,000

PC9210 Stream Restoration



Address: Behind 7801 Preakness Lane, Fairfax Station, Virginia
Location: Stream behind Oak Bridge Lane
Land Owner: Public – Fairfax County Park Authority
PIN: 0883 01 0004, 0971 01 0001A
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of South Run

Description: This project proposes repairing bank and bed erosion and restoring the channel morphology of the stream that runs parallel on the east side of Lee Chapel Road. The proposed restoration ends where the stream connects with a perpendicular stream to the south. The primary indicator is the poor channel morphology. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.



0 100 200 400 Feet

- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Stabilizing this stream will reduce erosion and instream sediment and the associated pollutants with this sediment. The stream stabilization will reduce sediment while maintaining the capacity and controlling unwanted meander of the stream. The project will not only repair existing erosion but prevent future erosion over time by implementing the measures above. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

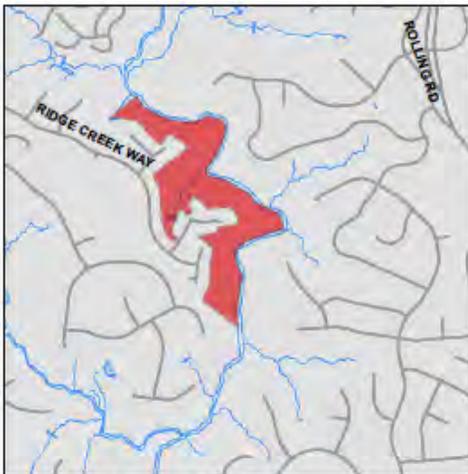
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
42.38	67.81	26.28

Project Design Considerations: This proposed project is in a densely wooded area behind homes and the South Run Recreation Center and is just west of a Dominion Virginia Power easement (open area east of stream on project map). The stream is located in Fairfax County Park Authority land. Efforts should be made to minimize impacts to existing mature vegetation. Measures implemented should address the poor channel morphology.

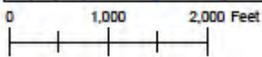
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	2198	LF	\$200	\$439,600
Clear and Grub	2.53	AC	\$10,000	\$25,277
Plantings	2.53	AC	\$25,000	\$63,193
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$62,807
Ancillary Items	1	LS	5%	\$31,403
Base Construction Cost				\$722,280
Mobilization (5%)				\$36,114
Subtotal 1				\$758,394
Contingency (25%)				\$189,598
Subtotal 2				\$947,992
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$426,597
Total				\$1,374,589
Estimated Project Cost				\$1,380,000

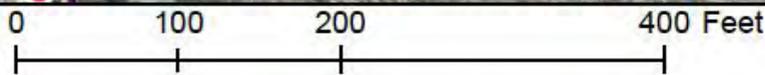
PC9211 Stream Restoration Suite



Address: Near 8000 Middlewood Place, Springfield, Virginia
Location: Stream/Buffer near Middlewood Place
Land Owner: Public/Local – Fairfax County Park Authority
PIN: 0894 24 A
Control Type: Water quality control
Drainage Area: 0.71 acres
Receiving Waters: Tributary of Pohick Creek



Description: Subproject A proposes to daylight a pipe that collects runoff at the end of Middlewood Place and pipes it south into a stream. The primary indicator is channel morphology. The pipe leading into the stream is very steep, outfalling runoff at potentially erosive velocities. Subproject B proposes re-planting upland buffer area and providing reforestation. This project was proposed due to the existing stream buffer being deficient.



Project Benefits: Daylighting this storm pipe will help poor downstream channel morphology by redirecting a closed system back to an aboveground channel, returning the water to its natural state. This will reduce velocities entering the stream and minimize stream erosion. Buffer restoration will increase vegetation for filtration of pollutants and reduce runoff by intercepting the water and increasing surface storage and infiltration. Buffers can also help provide food and temperature control for organisms in and around the stream. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

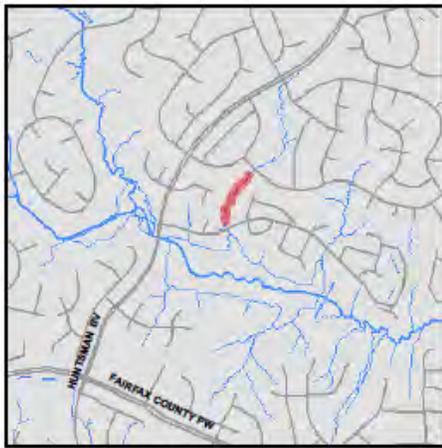
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
4.82	7.71	2.99

Project Design Considerations: Projects proposed on are Fairfax County Park Authority property. Projects should be built in conjunction with one another. The number of step pools required will be determined by the slope and length of pipe daylighted. Efforts should be made to minimize impacts to mature vegetation. Buffer area to be replanted is steep (approximately 4%). Plants should be chosen for the buffer replanting that can survive at this slope. Diameter of pipe to be daylighted is 15".

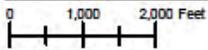
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Subproject A Stream east of Middlewood Pl.				
Construct New Channel	234	LF	\$200	\$46,800
Clear and Grub	0.27	AC	\$10,000	\$2,691
Plantings	0.27	AC	\$25,000	\$6,728
Additional Cost, First 500 LF	234	LF	\$200	\$46,800
Subproject B Stream Buffers Adjacent to Middlewood Pl.				
Plantings	0.22	AC	\$25,000	\$5,500
Organic Compost Soil Amendment	650	CY	\$40	\$26,000
Invasive Plan Eradication	1	LS	10%	\$3,150
Common Items				
Erosion and Sediment Control	1	LS	10%	\$13,452
Ancillary Items	1	LS	5%	\$6,726
Base Construction Cost				\$157,846
Mobilization (5%)				\$7,892
Subtotal 1				\$165,739
Contingency (25%)				\$41,435
Subtotal 2				\$207,173
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$93,228
Total				\$300,401
Estimated Project Cost				\$310,000

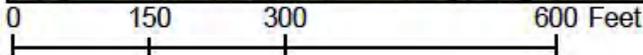
PC9214 Stream Restoration



Address: Behind 7309 Gist Court, Springfield, Virginia
Location: Stream near Gist Court
Land Owner: Public/Local – Fairfax County Park Authority
PIN: 0884 01 0009
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Middle Run



Description: The stream is between Arley Drive and Golden Ball Tavern Court. This project proposes repairing bank and bed erosion, thereby restoring channel morphology. The primary indicator is poor channel morphology. Stream stabilization will reduce sediment loads to the stream, maintaining the capacity of the stream channel and controlling unwanted meander.



Project Benefits: Reducing erosion from this stream will reduce instream sediment and its associated pollutants. Additionally, this stream receives untreated runoff from the surrounding residential areas and would benefit from improvements. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

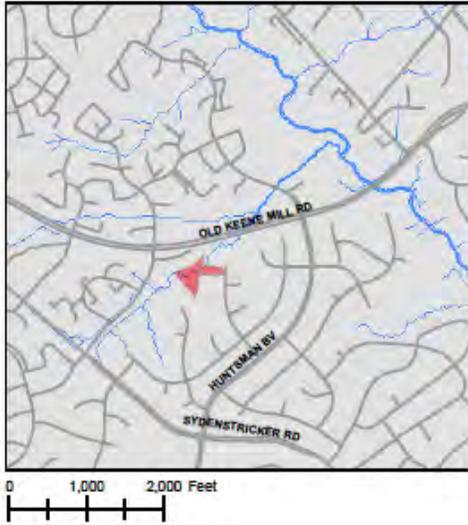
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
8.95	12.17	4.71

Project Design Considerations: The stream is located on Fairfax County Park Authority property. The stream restoration starts and ends at roadway culverts. A storm pipe discharges directly to the middle of the stream restoration. The installation of settling basins and boulder clusters at the outfalls would help roadway sediment settle out of the stormwater runoff and lessen impacts from the increased velocity caused by inflows from the roadway. Stream stabilization techniques would include streambank shaping, rootwad revetments, and rock toe reinforcements. The stream appears to have adequate buffer from the townhouses.

Cost:

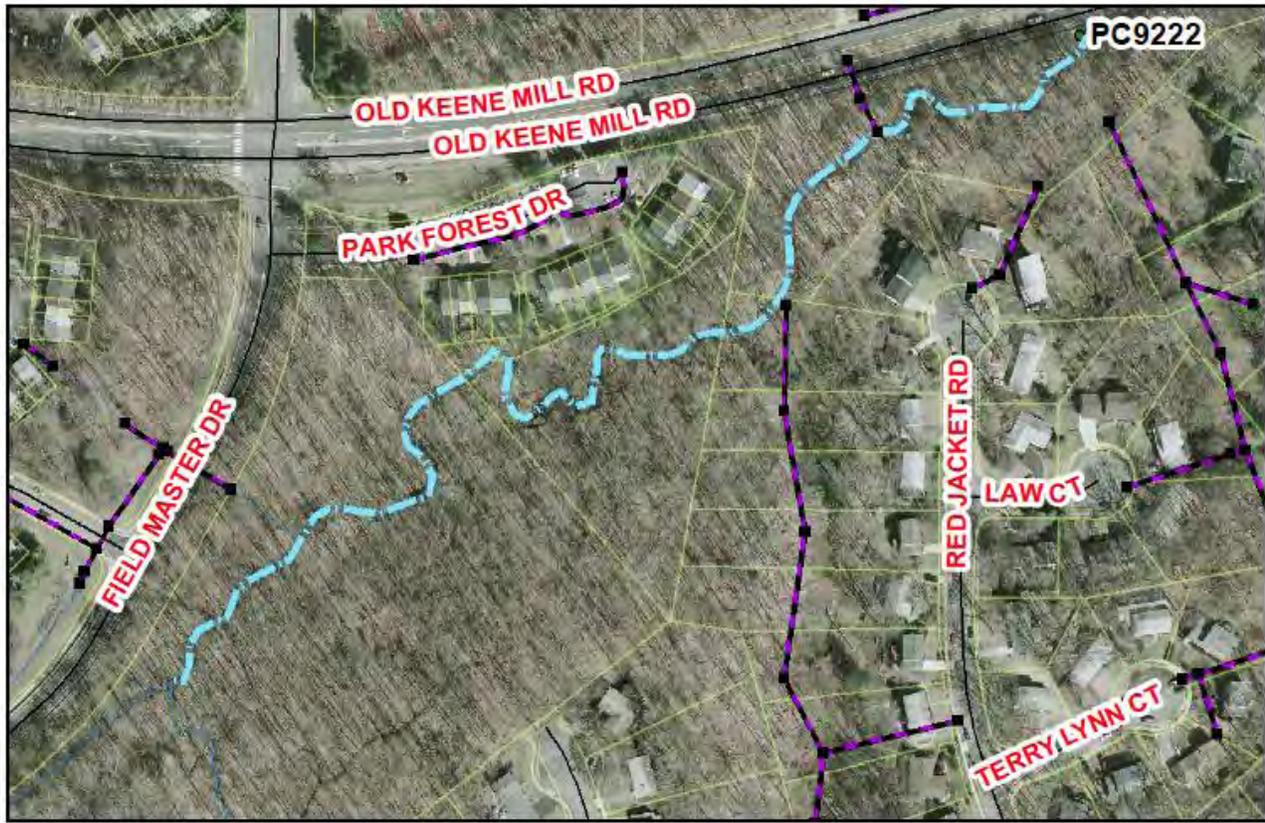
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	904	LF	\$200	\$180,800
Clear and Grub	1.04	AC	\$10,000	\$10,396
Plantings	1.04	AC	\$25,000	\$25,990
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$31,719
Ancillary Items	1	LS	5%	\$15,859
Base Construction Cost				\$364,764
Mobilization (5%)				\$18,238
Subtotal 1				\$383,002
Contingency (25%)				\$95,751
Subtotal 2				\$478,753
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$215,439
Total				\$694,191
Estimated Project Cost				\$700,000

PC9222 Stream Restoration



Address: Behind 8817 Bridle Wood Drive, Springfield, Virginia
Location: Stream near Old Keene Mill Road
Land Owner: Public/Private – Virginia Department of Transportation, Fairfax County Park Authority and Private Owner
PIN: 0882 09 A, 0882 22 A, 0882 22 B, 0882 04 0148
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek

Description: Stream flowing northeast towards Old Keene Mill Road. Stream collects runoff from several adjacent neighborhoods. This project proposes repairing bank and bed erosion to restore channel morphology. Stream stabilization will reduce sediment loads to the stream while maintaining capacity and controlling unwanted meander. The primary indicators are poor channel morphology. The stream is located on Fairfax County Park Authority land.



Project Benefits: Reducing bed and bank erosion from this stream will reduce instream sediment. Restoring this channel will help ensure the stream does not meander any closer to the townhouses. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
39.73	63.56	24.63

Project Design Considerations: This project starts just downstream of two roadway stormwater systems. This project is mostly located on Fairfax County Park Authority land, but a section of the stream crosses the northwest corner of Philip Hodges single family home lot. An easement will be needed for this section. Additionally, another section of the stream meanders near the back of a townhouse. This section should be stabilized and the buffer well vegetated. The stream receives discharge from a stormwater system that drains the houses to the west of Red Jacket Rd. This project will help reduce erosive velocities around this outfall.

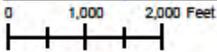
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1970	LF	\$200	\$394,000
Clear and Grub	2.27	AC	\$10,000	\$22,655
Plantings	2.27	AC	\$25,000	\$56,638
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$57,329
Ancillary Items	1	LS	5%	\$28,665
Base Construction Cost				\$659,286
Mobilization (5%)				\$32,964
Subtotal 1				\$692,251
Contingency (25%)				\$173,063
Subtotal 2				\$865,313
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$389,391
Total				\$1,254,704
Estimated Project Cost				\$1,260,000

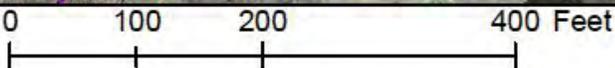
PC9223 Stream Restoration



Address: In open space between Waterside Dr. & Burke Woods Dr., Burke, Virginia
Location: Stream between Waterside Dr. & Burke Woods Dr.
Land Owner: Private – Edgewater Land Bays 2&3 Homeowners Association
PIN: 0881 28 B
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of South Run



Description: The stream outfalls into a pond northeast of Lake Meadow Drive. The stream collects runoff by sheetflow from adjacent single family housing development. The primary indicator is poor channel morphology. The project proposes repairing bank and bed erosion, thereby restoring channel morphology. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.



Project Benefits: This stream stabilization will reduce sediment loads to the stream, maintaining capacity of the stream channel and controlling unwanted meander of the stream. Repairing the stream will help minimize erosion of the streambanks over time. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
5.78	9.25	3.59

Project Design Considerations: There are two stormwater ponds downstream of this location. Property is owned by homeowners association. A stormwater drainage easement exists over this segment of stream and includes the surrounding buffers and downstream ponds. Efforts should be made to minimize impacts to existing vegetation. Streambed is lined in places with very large stones.

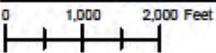
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	588	LF	\$200	\$117,600
Clear and Grub	0.68	AC	\$10,000	\$6,762
Plantings	0.68	AC	\$25,000	\$16,905
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$24,127
Ancillary Items	1	LS	5%	\$12,063
Base Construction Cost				\$277,457
Mobilization (5%)				\$13,873
Subtotal 1				\$291,330
Contingency (25%)				\$72,832
Subtotal 2				\$364,162
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$163,873
Total				\$528,035
Estimated Project Cost				\$530,000

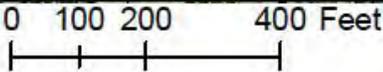
PC9225 Stream Restoration



Address: Next to 6297 Kerrydale Drive, Springfield, Virginia
Location: Stream near Kerrydale Drive
Land Owner: Private – Shannon Station Townhouse Association, Four Keene Mill Village Homeowners Association
PIN: 0784 21 M, 0882 1304 B
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek



Description: Stream is located southwest of Huntsman Boulevard. Receives runoff from adjacent neighborhoods. This project proposes repairing bank and bed erosion to restore channel morphology. The primary indicator is poor channel morphology. Stream conveys runoff from dense residential development. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Stream stabilization will reduce sediment loads while maintaining the capacity of the stream and controlling unwanted meander. Measures will be put in place to repair existing erosion and prevent future erosion over time. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

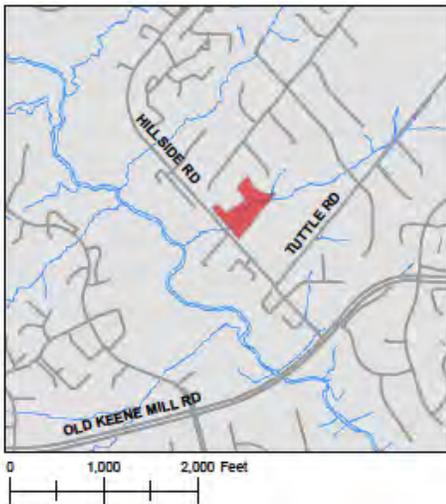
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
76.02	121.62	47.13

Project Design Considerations: The majority of the site is on property owned by Shannon Townhouse Association. A small portion of the site is on property owned by Four Keene Mill Village Homeowners Association. Per County-provided GIS, there are no existing easements on site. Efforts should be taken to minimize impacts to mature vegetation.

Cost:

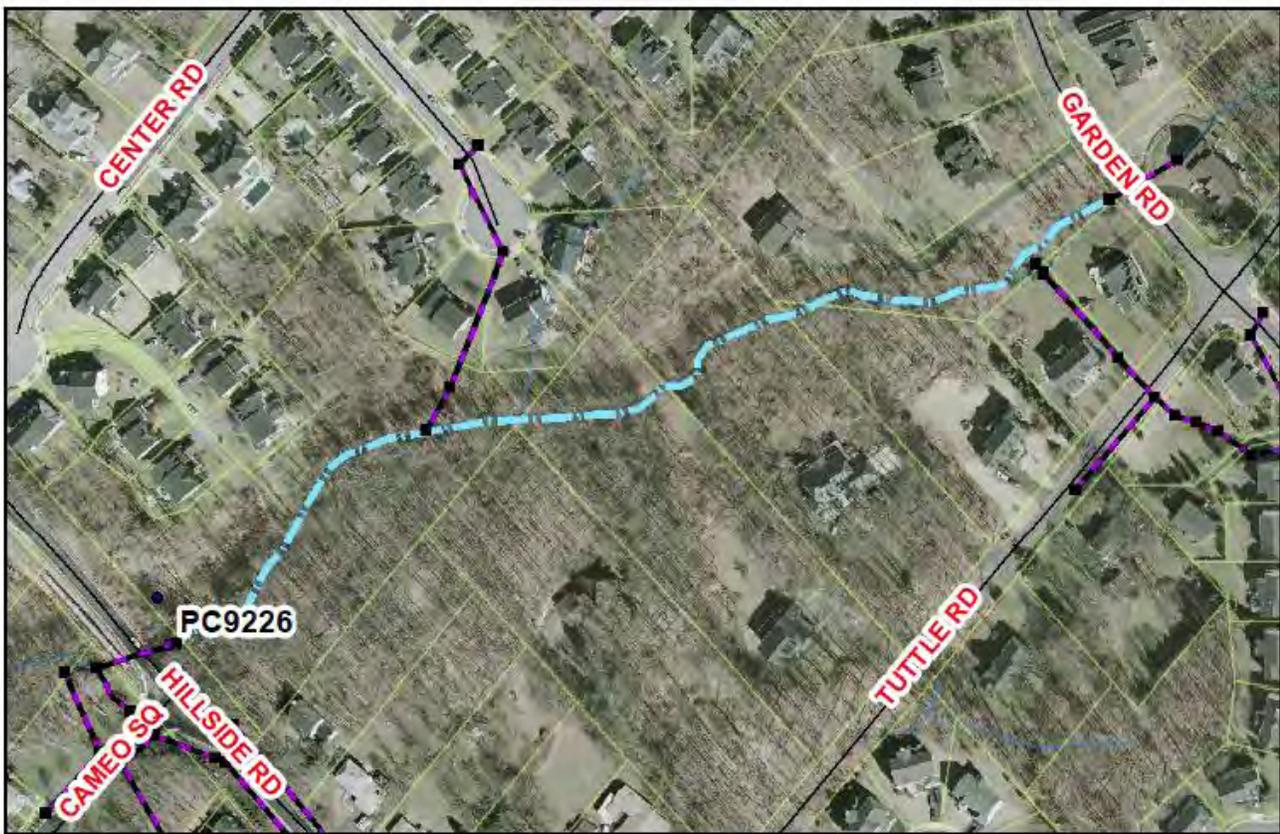
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1355	LF	\$200	\$271,000
Clear and Grub	1.56	AC	\$10,000	\$15,583
Plantings	1.56	AC	\$25,000	\$38,956
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$42,554
Ancillary Items	1	LS	5%	\$21,277
Base Construction Cost				\$489,370
Mobilization (5%)				\$24,468
Subtotal 1				\$513,838
Contingency (25%)				\$128,460
Subtotal 2				\$642,298
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$289,034
Total				\$931,331
Estimated Project Cost				\$940,000

PC9226 Stream Restoration



Address: Behind 6321 Hillside Road, Springfield, Virginia
Location: Stream near Hillside Road
Land Owner: Public/ Private – Virginia Department of Transportation, Red Fox Estate Homeowners Association, Private Owners
PIN: 0793 36 A, 0793 04 0017, 0793 04 0016, 0793 04 0015A, 0793 07 0020A
Control Type: Water quality control
Drainage Area: NA
Receiving Waters: Tributary of Pohick Creek

Description: The stream is located northeast of Hillside Road. The stream receives stormwater runoff as sheet flow from adjacent neighborhoods and three closed systems from the Red Fox Estates neighborhood. Stream restoration proposes repairing bank and bed erosion to restore channel morphology. The primary indicator is poor channel morphology. Stream stabilization will reduce sediment loads while maintaining capacity of the stream and controlling unwanted meander.



0 150 300 600 Feet

Stream Restoration Storm Network Property Line Streams

Project Benefits: Stabilizing this stream will reduce erosion and instream sediment. The restoration will also improve the stream habitat. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

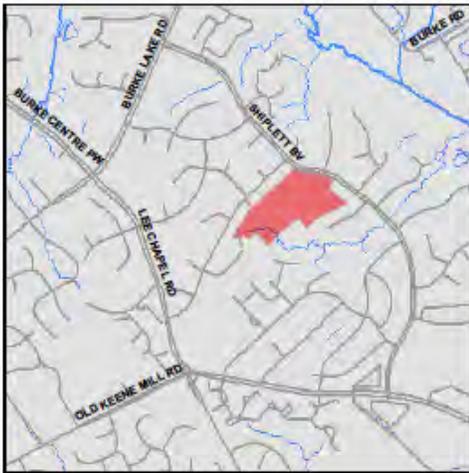
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
22.23	35.56	13.78

Project Design Considerations: Measures to stabilize this stream should include improving the three stormwater outfalls. This stream section is located on the Red Fox Estate HOA open space and the private property of four single family house lots. Construction easements will need to be secured for the private properties. Possible stream stabilization improvements include: grade control measures, streambank shaping, boulder revetments, erosion control fabric, and vegetation establishment.

Cost:

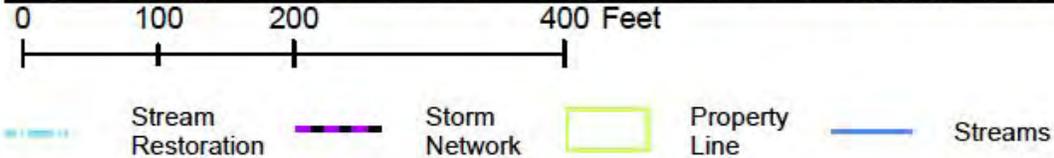
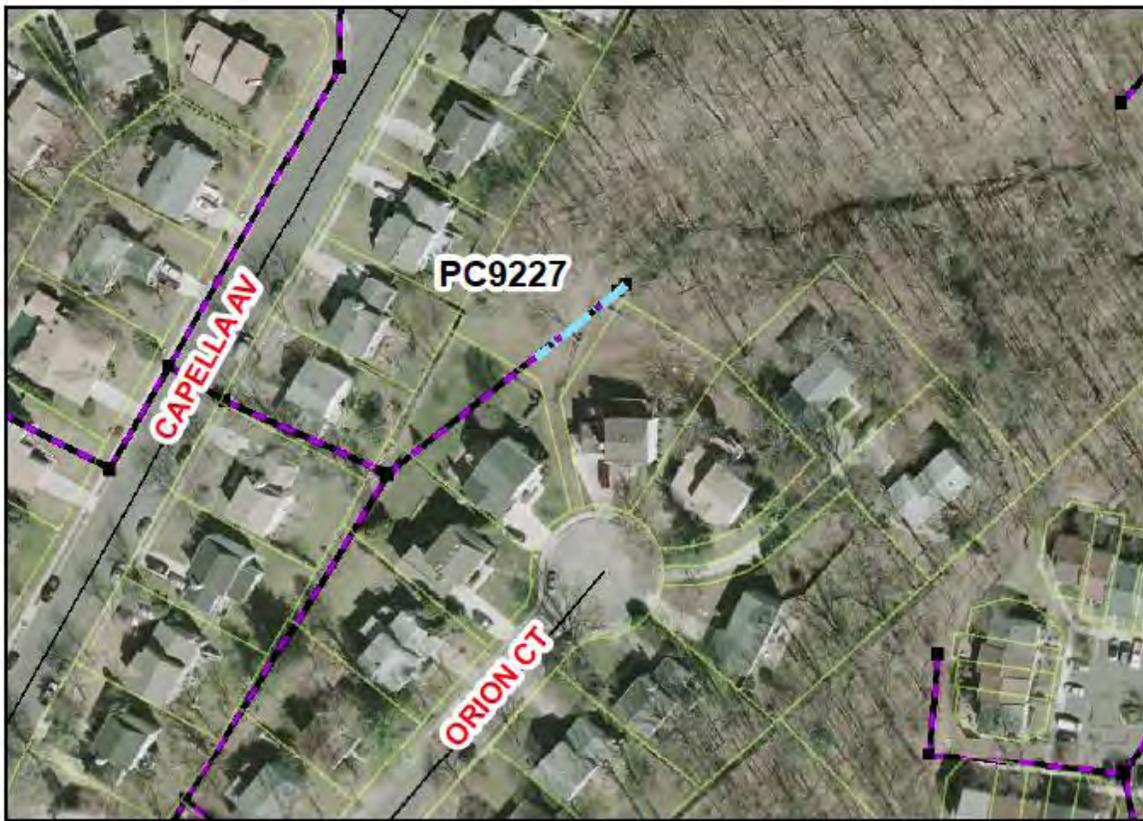
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1490	LF	\$200	\$298,000
Clear and Grub	1.71	AC	\$10,000	\$17,135
Plantings	1.71	AC	\$25,000	\$42,838
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$45,797
Ancillary Items	1	LS	5%	\$22,899
Base Construction Cost				\$526,668
Mobilization (5%)				\$26,333
Subtotal 1				\$553,002
Contingency (25%)				\$138,250
Subtotal 2				\$691,252
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$311,064
Total				\$1,002,316
Estimated Project Cost				\$1,010,000

PC9227 Stream Restoration



Address: Behind 9500 Orion Court, Burke, Virginia
Location: Daylight stream near Orion Court
Land Owner: Public/Local – Fairfax County Public School
PIN: 0784 13 A
Control Type: Water quality and quantity control
Drainage Area: 9.12 acres
Receiving Waters: Tributary of Pohick Creek

Description: A closed system collects runoff from Capella Ave. and a large surrounding area, including residential development. A pipe outfalls into the stream east of Capella Drive. This stream is in wooded area behind White Oaks Elementary School. Due to poor channel morphology, this project proposes daylighting the outfall farther upstream to restore the water to its natural state before reaching the stream. Energy dissipation devices, which will consist of a series of reinforced step pools will be put in place to reduce velocity of water entering the stream.



Project Benefits: Daylighting this storm pipe will help poor downstream channel morphology by redirecting a closed system back to an aboveground channel, returning the water to its natural state. This will reduce velocities entering stream and minimize stream erosion. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

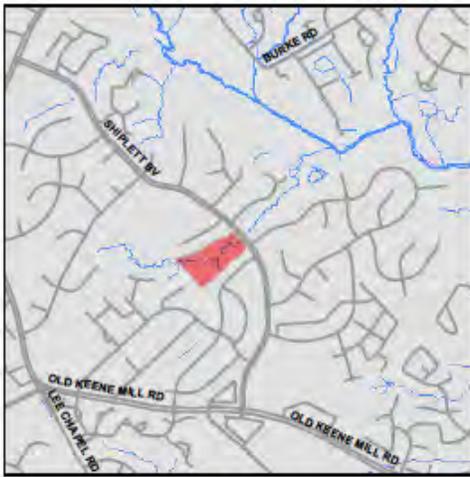
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
1.66	2.66	1.03

Project Design Considerations: This project is on Fairfax County Public School property. The number of step pools required will be determined by the slope and length of pipe daylighted. Efforts should be made to minimize impacts to mature vegetation. Daylighting will occur in open space behind several residential houses. There is an access point on Orion Court. Pipe currently outfalls at the upstream most point of the stream. Project will extend the length of the stream. Stream section to be daylighted is close to residential lot, and therefore extra precautions may need to be taken. A construction easement may need to be obtained or slope stabilization may need to be done near the residential lot.

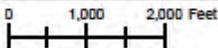
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	86	LF	\$200	\$17,200
Clear and Grub	0.10	AC	\$10,000	\$989
Plantings	0.10	AC	\$25,000	\$2,473
Additional Cost, First 500 LF	86	LF	\$200	\$17,200
Erosion and Sediment Control	1	LS	10%	\$3,786
Ancillary Items	1	LS	5%	\$1,893
Base Construction Cost				\$43,541
Mobilization (5%)				\$2,177
Subtotal 1				\$45,718
Contingency (25%)				\$11,429
Subtotal 2				\$57,147
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$25,716
Total				\$82,863
Estimated Project Cost				\$90,000

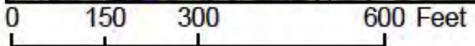
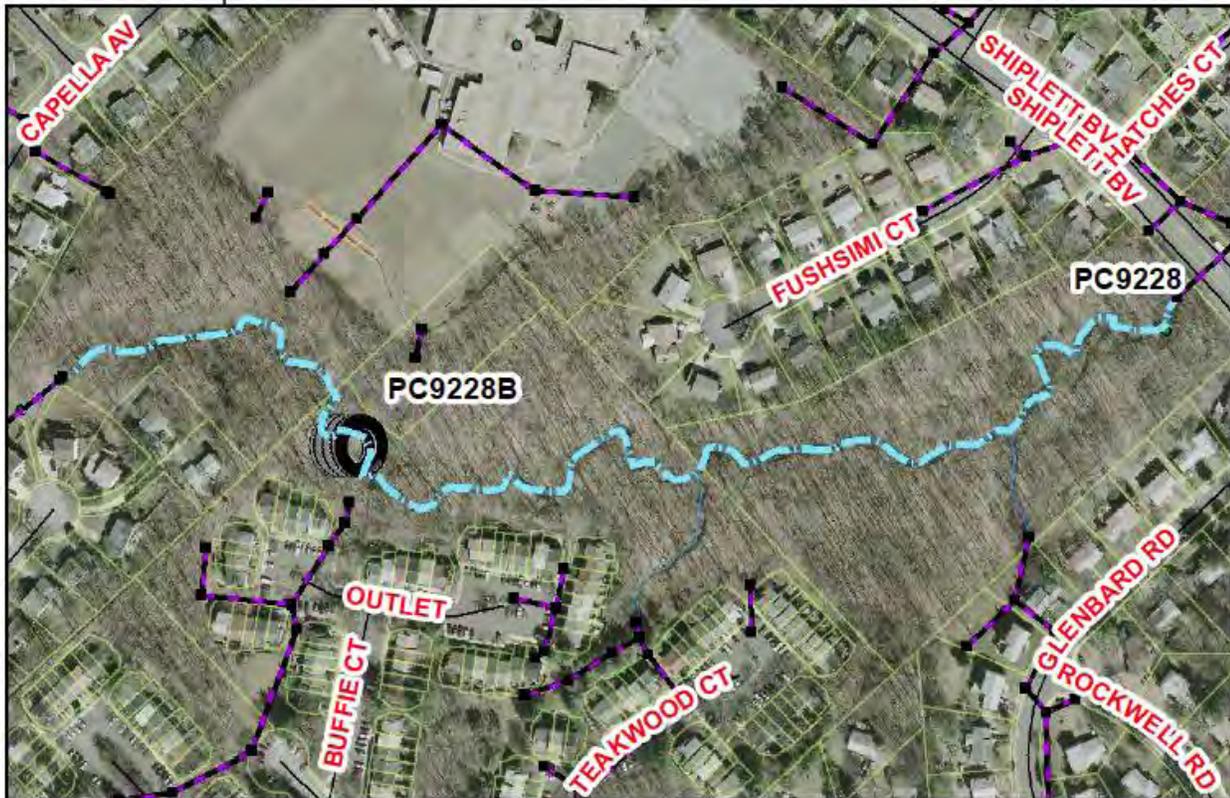
PC9228 Stream Restoration Suite



Address: Behind 6300 Glenbard Road, Burke, Virginia
Location: Stream near Glenbard Road
Land Owner: Public/Local/Private – Fairfax County Park Authority, School Board of Fairfax County, Old Mill Community Council
PIN: 0784 24 B, 0784 13 A, 0783 06 D1
Control Type: Water quality control
Drainage Area:
Receiving Waters: Tributary of Pohick Creek



Description: Subproject A is a stream restoration of the stream west of Shiplett Boulevard and northwest of Glenbard Road, and is located on Fairfax County Park Authority land. This project proposes repairing bank and bed erosion, restoring the channel morphology. Stream stabilization will reduce sediment loads to the stream while maintaining capacity of the channel and controlling unwanted meander. Subproject B is an obstruction removal in the stream north of Buffie Court and west of Orion Court. The obstruction was verified during a field visit. This project proposes to remove the obstructions blocking the stream channel to restore natural conditions. Removal of obstructions will help restore the function of the stream.



Project Benefits: Restoring this stream will reduce erosion and instream sediment. The obstruction removal would help improve the function of the stream and with coordination of the community could improve local stewardship of the stream. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

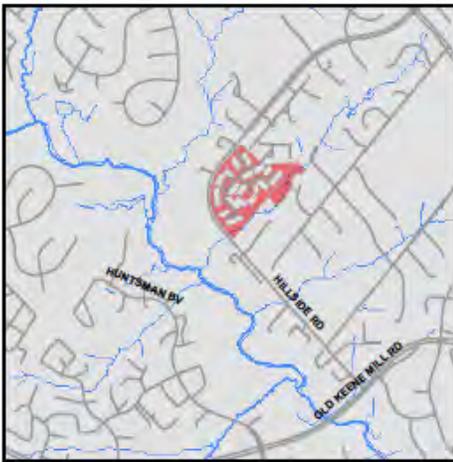
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
156.06	249.69	96.75

Project Design Considerations: Streambed is excessively wide and dry. Measures should be implemented to help restore baseflow. These measures could include rock vane deflectors, which would help concentrate flow to a stable deeper baseflow channel. During larger flows caused by storm events the water would utilize the entire streambank width. Other measures to improve water quality should include improving outfall connections to the stream for the six outfalls discharging runoff from the townhomes and single family homes. A positive condition for the success of this restoration is that there is a good existing stream buffer.

Cost:

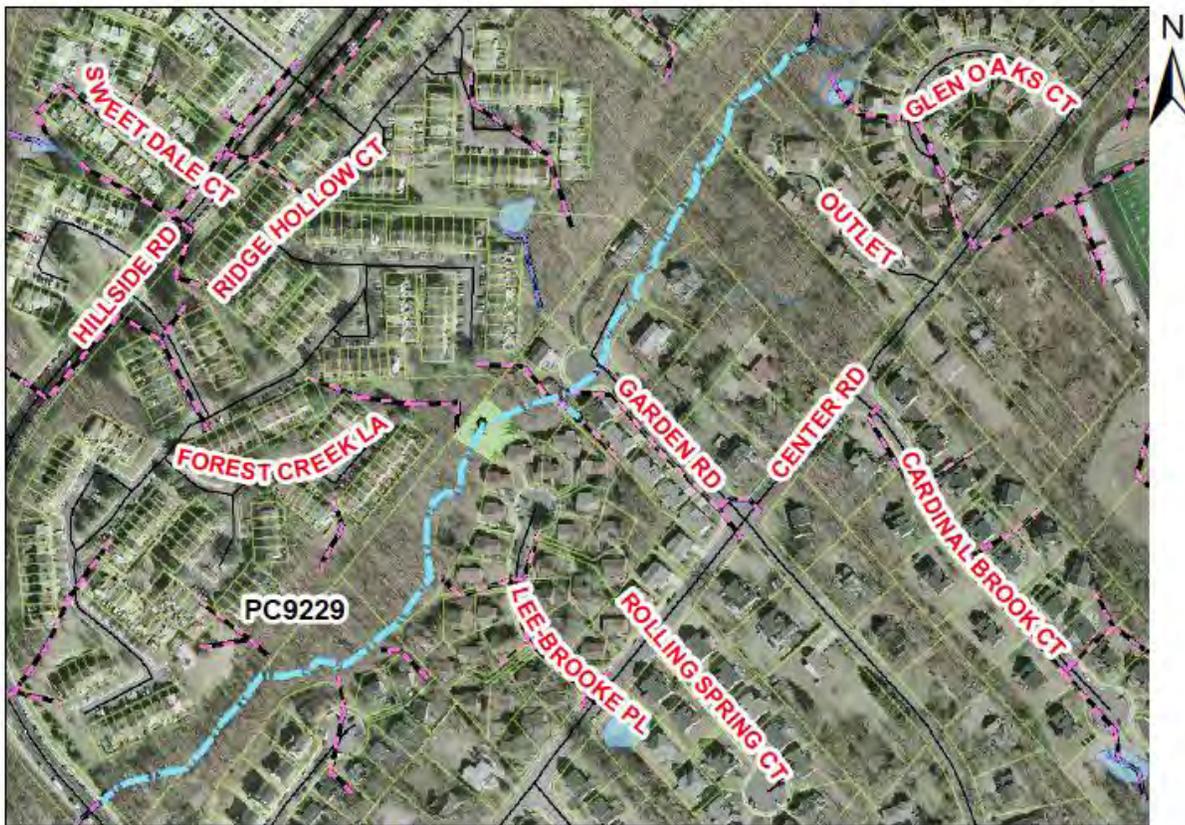
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Subproject A Stream South of Fushsimi Ct.				
Construct New Channel	2515	LF	\$200	\$503,000
Clear and Grub	2.89	AC	\$10,000	\$28,923
Plantings	2.89	LS	\$25,000	\$72,306
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$70,423
Ancillary Items	1	LS	5%	\$35,211
Subproject B Obstruction Removal Near Lakehaven La.				
Obstruction Removal	1	LS	\$5,250	\$5,250
Base Construction Cost				\$815,113
Mobilization (5%)				\$40,756
Subtotal 1				\$855,869
Contingency (25%)				\$213,967
Subtotal 2				\$1,069,836
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$481,426
Total				\$1,551,262
Estimated Project Cost				\$1,560,000

PC9229 Stream Restoration



Address: Behind 8901 Winding Hollow Way, Springfield, Virginia
Location: Stream near Winding Hollow Way
Land Owner: Private – Lee Brooke Homeowners Association, Timbers Homeowners Association
PIN: 0793 22 A, 0784 17 J
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek

Description: This Suite of project proposes restoration projects along the stream northeast of Hillside Road. Subproject A will be along the main stream, subproject B is a riparian buffer restoration, and subproject C is a daylighting of a storm pipe that outfalls to this stream. The primary indicator is poor channel morphology. The Stream receives runoff from sheet flow and closed systems from adjacent residential neighborhoods. These projects will reduce sediment loads to the stream while maintaining capacity and controlling unwanted meander.



0 200 400 800 Feet

- Stream Restoration
- Buffer Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Daylighting the storm pipe to the stream will increase infiltration and will decrease erosion near the outfall. The stream restoration will improve the other stormwater outfalls along the stream to help reduce the roadway fines from the untreated stormwater runoff. The buffer restoration will decrease the amount of pollutants following the stream. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

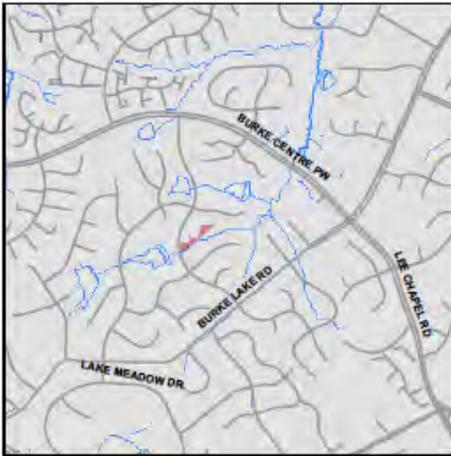
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
36.70	58.72	22.75

Project Design Considerations: The stream is behind single family homes and townhouses. The upstream section is located on Lee Brook HOA open space and the downstream section is located on Timber HOA open space. The longitudinal slope of the stream is approximately 1.6%. Grade control measures should be investigated to prevent stream incision. A culvert draining Garden Road is Upstream. The stream receives untreated runoff from nine stormwater outfalls. Stream stabilization around these outfalls will help reduce erosion. Trees are leaning into the stream due to erosion. A stream restoration project (PC9231) is also proposed upstream of Garden Road and a buffer restoration project (PC9812) is proposed northwest of the Lee Brooke PL cul-de-sac. Coordination of these projects should be investigated for cost savings.

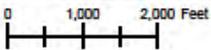
Cost:

SUBPROJECT A ITEMS	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	2533	LF	\$200	\$506,600
Clear and Grub	2.91295	AC	\$10,000	\$29,130
Plantings	2.91295	AC	\$25,000	\$72,824
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
SUBPROJECT B ITEMS	QUANTITY	UNITS	UNIT COST	TOTAL
Plantings	0.26	AC	\$25,000	\$6,500
Organic Compost Soil Amendment	725	CY	\$40	\$29,000
Invasive Plant Eradication	1	LS	10%	\$3,550
SUBPROJECT C ITEMS	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	72	LF	\$200	\$14,400
Clear and Grub	0.0828	AC	\$10,000	\$828
Plantings	0.0828	AC	\$25,000	\$2,070
COMMON ITEMS	QUANTITY	UNITS	UNIT COST	TOTAL
Erosion and Sediment Control	1	LS	10%	\$76,490
Ancillary Items	1	LS	5%	\$38,245
Base Construction Cost				\$879,636
Mobilization (5%)				\$43,982
Subtotal 1				\$923,618
Contingency (25%)				\$230,905
Subtotal 2				\$1,154,523
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$519,535
Total				\$1,674,058
Estimated Project Cost				\$1,680,000

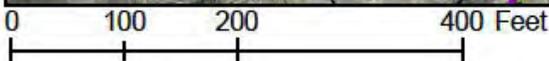
PC9230 Stream Restoration



Address: Behind 9820 Rand Drive, Burke, Virginia
Location: Stream near Rand Drive
Land Owner: Private - Burke Centre Conservancy
PIN: 0783 11 S, 0783 10 Q, 0783 10 B
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek



Description: The stream east of Wilmington Drive and north of Rand Drive has poor channel morphology. This project proposes repairing bank and bed erosion to restore channel morphology. Erosion will be stabilized through the use of bank shaping, toe of slope protection, erosion control fabric, and rapid vegetation establishment. The stream stabilization will reduce sediment loads while maintaining the capacity of the stream and controlling unwanted meander.



Project Benefits: Restoring this stream will reduce erosion and instream sediment. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

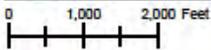
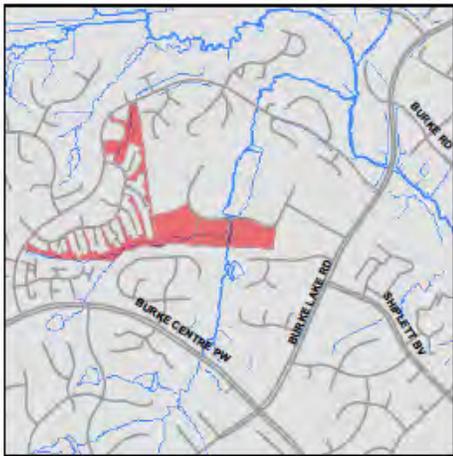
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
11.64	15.84	6.14

Project Design Considerations: Fully developed single family residential area drains to this stream with no stormwater management. The stream has a longitudinal slope of approximately 2.5%. Upstream end of restoration is Wilmington Drive culvert. Downstream of restoration is the confluence of another stream. Significant impervious area drains to the stream and there is minimal buffer between the residential area and the stream. Stream receives sheet flow from back of houses and runoff from two storm pipe outfalls. Installing settling basins at these outfalls will reduce erosive flow velocities and reduce roadway sediment.

Cost:

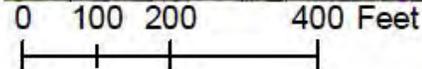
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	737	LF	\$200	\$147,400
Clear and Grub	0.85	AC	\$10,000	\$8,476
Plantings	0.85	LS	\$25,000	\$21,189
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$27,706
Ancillary Items	1	LS	5%	\$13,853
Base Construction Cost				\$318,624
Mobilization (5%)				\$15,931
Subtotal 1				\$334,555
Contingency (25%)				\$83,639
Subtotal 2				\$418,194
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$188,187
Total				\$606,381
Estimated Project Cost				\$610,000

PC9234 Stream Restoration



Address: Behind 9840 Natick Rd., Burke, Virginia
Location: Stream near Natick Rd.
Land Owner: Private – Burke Centre Conservancy, Private Homeowners
PIN: 0781 14 L, 0783 02 0009A, 0783 02 0010, 0783 02 0011
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes repairing bank and bed erosion, restoring channel morphology to a stream north of Natick Road. Stream receives runoff from a residential neighborhood by both direct runoff and from a closed system. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment. The primary indicator is poor stream stabilization.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: This project will reduce sediment loads while maintaining the capacity of the stream and controlling unwanted meander. Repairing the stream erosion will also help minimize erosion of the streambanks over time. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
51.17	81.87	31.72

Project Design Considerations: About half of the stream length to be restored is on property owned by the Burke Centre Conservancy, however the rest of the stream is on lots with private homeowners. According to County-provided GIS, no easements exist on these properties. Efforts should be made to insure that disturbance to existing mature vegetation is minimized.

Cost:

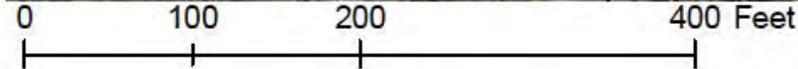
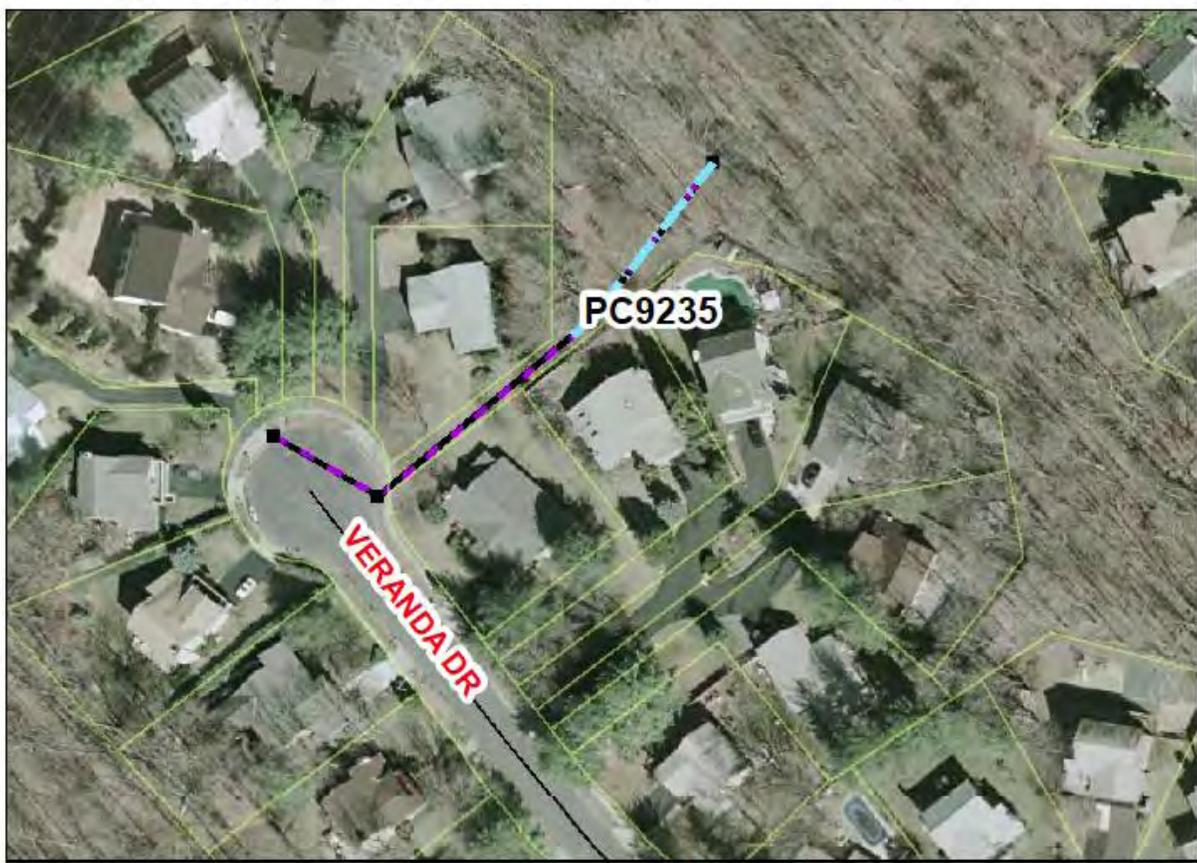
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1981	LF	\$200	\$396,200
Clear and Grub	2.28	AC	\$10,000	\$22,782
Plantings	2.28	AC	\$25,000	\$56,954
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$57,594
Ancillary Items	1	LS	5%	\$28,797
Base Construction Cost				\$662,326
Mobilization (5%)				\$33,116
Subtotal 1				\$695,442
Contingency (25%)				\$173,860
Subtotal 2				\$869,302
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$391,186
Total				\$1,260,488
Estimated Project Cost				\$1,270,000

PC9235 Stream Restoration



Address: Behind 5913 Veranda Drive, Springfield, Virginia
Location: Stream near Veranda Drive
Land Owner: Private – The Crossings Homeowners Association
PIN: 0793 16 A
Control Type: Water quality and quantity control
Drainage Area: 3.12 acres
Receiving Waters: Tributary of Pohick Creek

Description: Two inlets collect runoff from Veranda Drive and pipe it to an adjacent stream to the east. Due to poor channel morphology, this project has been proposed to daylight the pipe farther upstream by creating an open channel and using an energy dissipation device. This device consists of a series of step pools reinforced with either rocks or logs. The daylighting will help reduce the velocity of the water entering the stream.



— Stream Restoration
 - - - Storm Network
 Property Line
 — Streams

Project Benefits: Daylighting this storm pipe will help poor downstream channel morphology by redirecting a closed system back to its natural state prior to entering the stream area, thereby reducing runoff rates and minimizing stream erosion. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
2.31	3.70	1.43

Project Design Considerations: The property is owned by The Crossings Homeowners Association. There are no on-site easements according to the County-provided GIS. Efforts should be made to minimize impacts to existing mature vegetation.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	134	LF	\$200	\$26,800
Clear and Grub	0.15	AC	\$10,000	\$1,541
Plantings	0.15	AC	\$25,000	\$3,853
Additional Cost, First 500 LF	134	LF	\$200	\$26,800
Erosion and Sediment Control	1	LS	10%	\$5,899
Ancillary Items	1	LS	5%	\$2,950
Base Construction Cost				\$67,843
Mobilization (5%)				\$3,392
Subtotal 1				\$71,235
Contingency (25%)				\$17,809
Subtotal 2				\$89,043
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$40,069
Total				\$129,113
Estimated Project Cost				\$130,000

Project Benefits: This stream restoration will reduce the erosion and instream sediment load. Additionally this project will improve the two stormwater discharges outfalling to the stream, which will reduce coarse sediment from the roadway and reduce erosive velocities. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

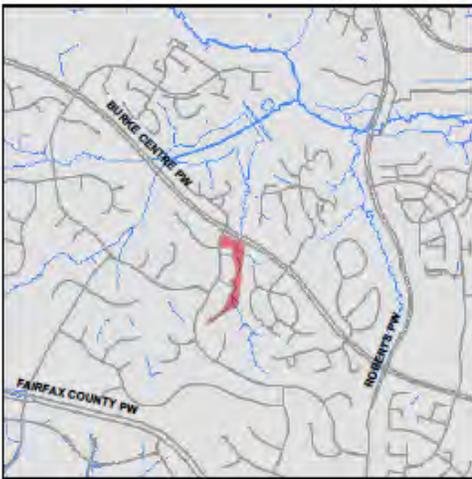
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
2.28	3.65	1.42

Project Design Considerations: This section of the stream has two outfalls discharging untreated stormwater runoff from the neighborhood roads. The outfalls will be improved through stream buffer plantings, creation of sediment ponding areas, and stream stabilization. During a field visit in the spring the stream appeared to be dry (see photos). There is evidence of erosion along the banks. Due to the location in a residential neighborhood, the buffer area is greatly reduced.

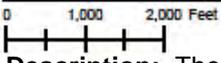
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	187	LF	\$200	\$37,400
Clear and Grub	0.22	AC	\$10,000	\$2,151
Plantings	0.22	AC	\$25,000	\$5,376
Additional Cost, First 500 LF	187	LF	\$200	\$37,400
Erosion and Sediment Control	1	LS	10%	\$8,233
Ancillary Items	1	LS	5%	\$4,116
Base Construction Cost				\$94,676
Mobilization (5%)				\$4,734
Subtotal 1				\$99,410
Contingency (25%)				\$24,852
Subtotal 2				\$124,262
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$55,918
Total				\$180,180
Estimated Project Cost				\$190,000

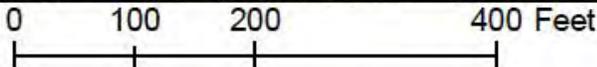
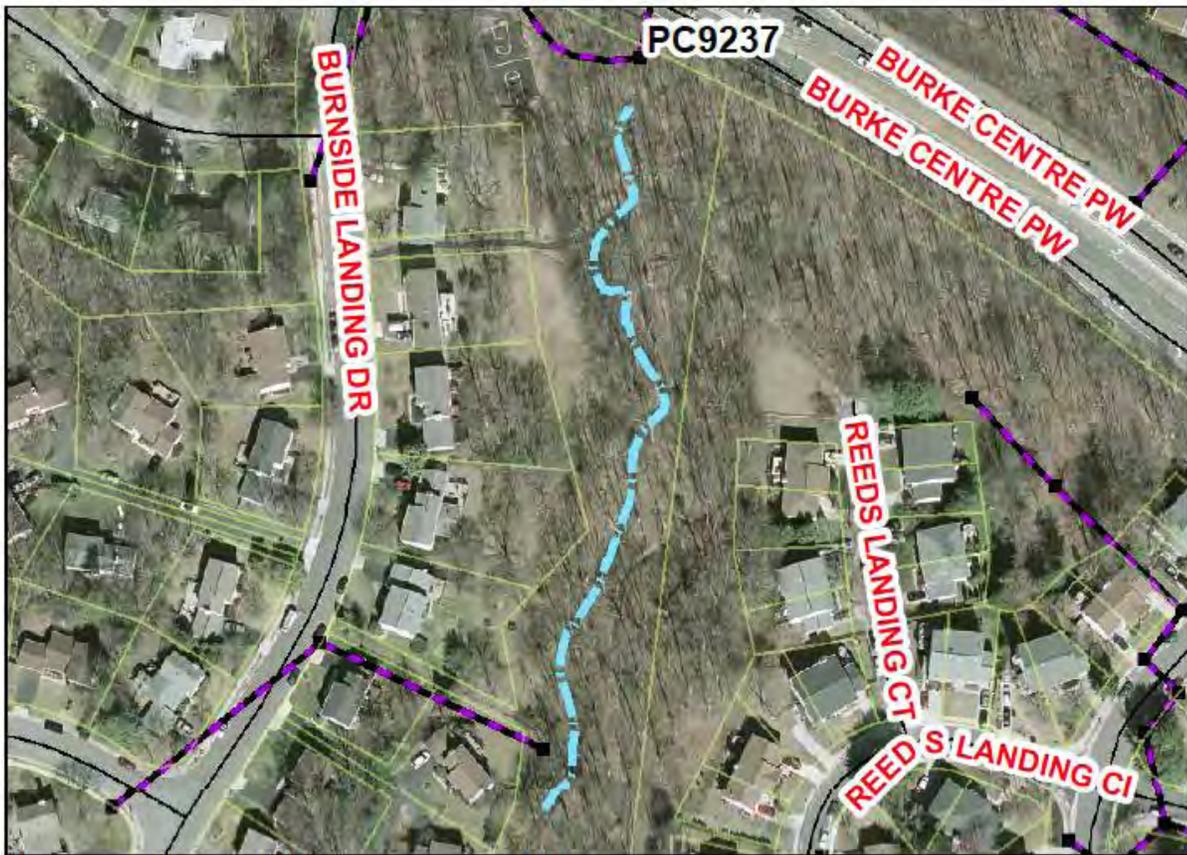
PC9237 Stream Restoration



Address: Behind 10550 Reeds Landing Ct., Burke, Virginia
Location: Stream near Reeds Landing Ct.
Land Owner: Private – Burke Centre Conservancy
PIN: 0774 07 A
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Sideburn Branch



Description: The stream runs between Reeds Landing Court and Burnside Landing Drive. Pipes discharge directly into the stream from adjacent subdivisions. This project consists of repairing bank and bed erosion and restoring channel morphology. The primary indicator is poor channel morphology. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Stream stabilization will reduce sediment loads to the stream, maintain the capacity of the stream channel and control unwanted meander. The proposed measures will repair existing erosion and prevent future erosion over time. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

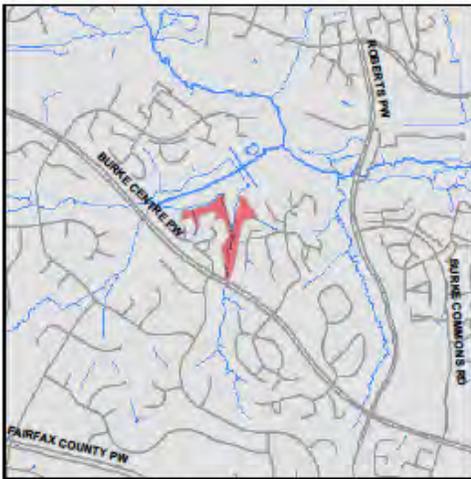
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
10.26	16.42	6.36

Project Design Considerations: Stream is on property owned by Burke Centre Conservancy. There are no easements on the property, according to County-provided GIS. Residential area is piped to stream at one location without any pre-treatment. Efforts should be taken to minimize impacts to mature vegetation and to maintain the buffer.

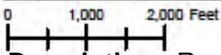
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	673	LF	\$200	\$134,600
Clear and Grub	0.77	AC	\$10,000	\$7,740
Plantings	0.77	AC	\$25,000	\$19,349
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$26,169
Ancillary Items	1	LS	5%	\$13,084
Base Construction Cost				\$300,941
Mobilization (5%)				\$15,047
Subtotal 1				\$315,989
Contingency (25%)				\$78,997
Subtotal 2				\$394,986
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$177,744
Total				\$572,729
Estimated Project Cost				\$580,000

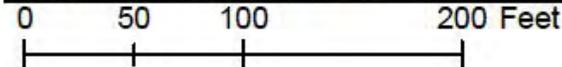
PC9239 Stream Restoration



Address: Next to 5914 Cove Landing Road, Burke, Virginia
Location: Daylight Stream near Landing Rd
Land Owner: Private - Burke Centre Conservancy
PIN: 0772 01 0044C
Control Type: Water quality and quantity control
Drainage Area: 2.05 acres
Receiving Waters: Tributary of Sideburn Branch



Description: Runoff from a residential neighborhood is collected in a closed system of pipes. Currently, a concrete channel between residential buildings conveys stormwater to a closed system that outfalls directly into the stream. This project proposes to remove a portion of the concrete channel and closed system to create a more natural channel to convey stormwater to the stream. Due to the slope, a series of check dams or step pools may be necessary to keep velocities low.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: This project will retrofit a concrete channel and closed system into a natural channel, returning the water to its natural state and helping reduce runoff rates, which will help minimize stream erosion. Runoff will also travel through the buffer and reduce pollutant loads. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
1.39	2.22	0.86

Project Design Considerations: Stormwater runoff flows down a concrete channel and eventually into a closed system. This project proposes that starting at the property line, the channel be retrofitted into a natural channel. A portion of the existing channel is in open space and the rest is in a wooded area. Efforts should be made to minimize impacts to existing mature vegetation. Step pools and check dams will be necessary to reduce velocities in the naturalized stream. Maintaining the existing walking path will be necessary. See project map and photos. The stream project is located on property owned by Burke Centre Conservancy. County records show no onsite easements.

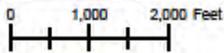
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	91	LF	\$200	\$18,200
Clear and Grub	0.10	AC	\$10,000	\$1,047
Plantings	0.10	AC	\$25,000	\$2,616
Additional Cost, First 500 LF	91	LF	\$200	\$18,200
Erosion and Sediment Control	1	LS	10%	\$4,006
Ancillary Items	1	LS	5%	\$2,003
Base Construction Cost				\$46,072
Mobilization (5%)				\$2,304
Subtotal 1				\$48,376
Contingency (25%)				\$12,094
Subtotal 2				\$60,470
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$27,211
Total				\$87,681
Estimated Project Cost				\$90,000

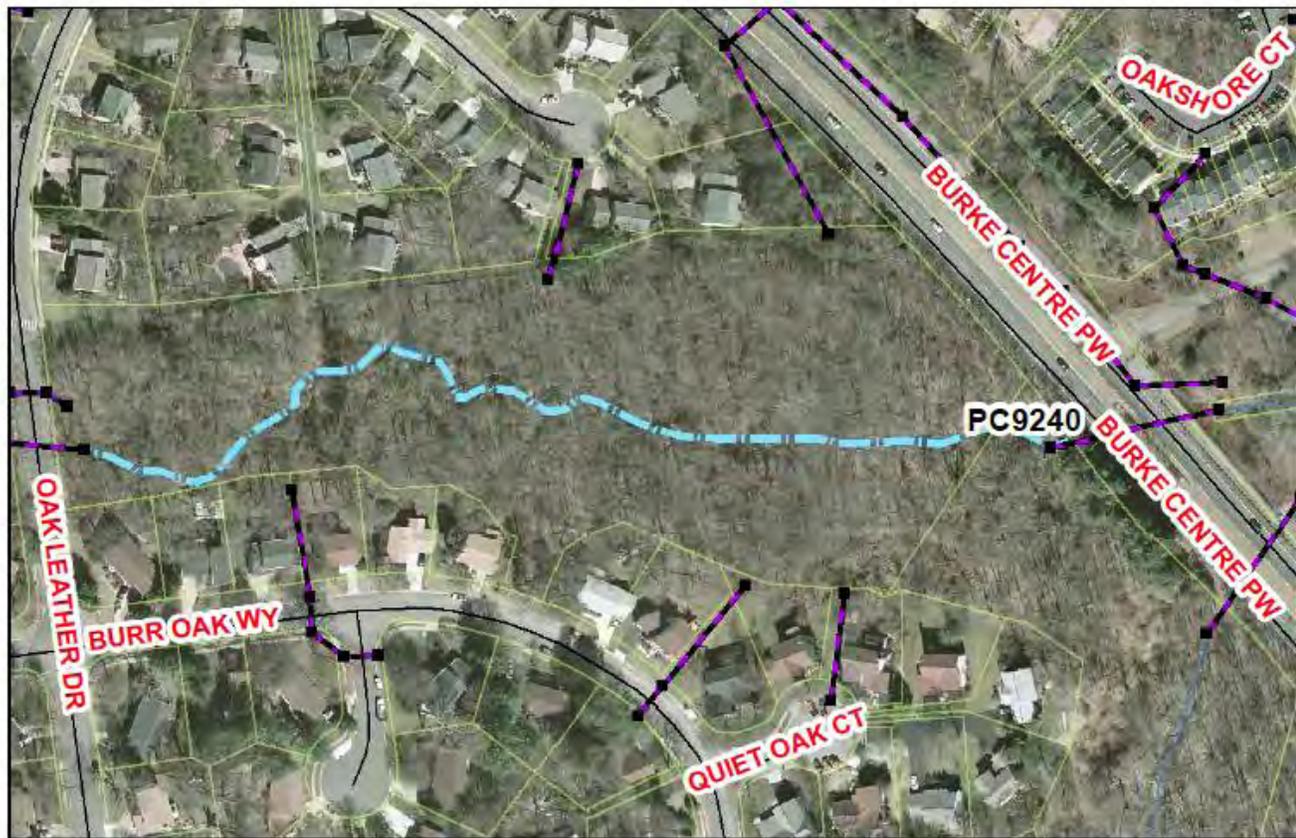
PC9240 Stream Restoration



Address: Along Burke Centre Pkwy, Near 5901 Waters Edge Landing Lane, Burke, Virginia
Location: Stream near Water Edge Landing Lane
Land Owner: Private - Burke Centre Conservancy
PIN: 0771 07 B, 0771 09 F
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Sideburn Branch



Description: This project is located upstream of the Burke Centre Parkway culvert. The stream conveys stormwater from single family homes. The primary indicator is poor channel morphology. The purpose of the project is to restore channel morphology and to add an energy dissipation device. This will reduce sediment loads to the stream, while maintaining capacity of the stream channel and controlling unwanted meandering of the stream.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Restoring this stream will reduce instream sediment and its associated pollutants. Additionally, installing an energy dissipation basin downstream of the culvert at Oak Leather Drive will reduce erosion at the outfall. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

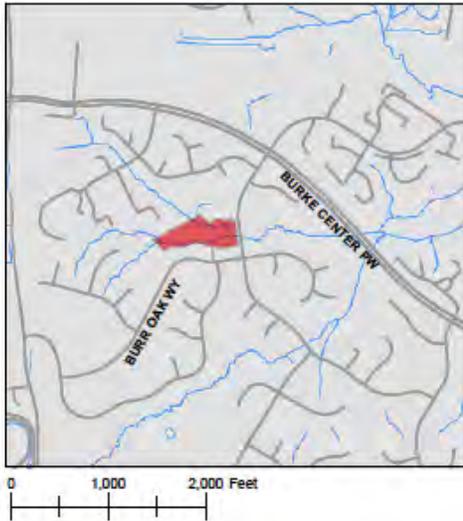
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
27.84	44.54	17.26

Project Design Considerations: This stream conveys water from two culverts at Oak Leather Drive. The stream has a longitudinal slope of approximately 1.6%. Erosion will be stabilized through the use of bank shaping, toe of slope protection, erosion control fabrics, and rapid vegetation establishment. The stream receives untreated runoff from two stormwater outfalls that are not directly connected to the main stream bed. The stream has meandered close to the back property line of one of the single family homes. Bank stability should be ensured at this point to prevent any further meander. This project is downstream of another stream restoration, PC9241. These projects should be coordinated to ensure maximum benefit.

Cost:

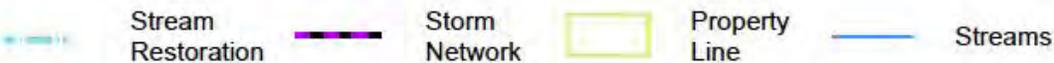
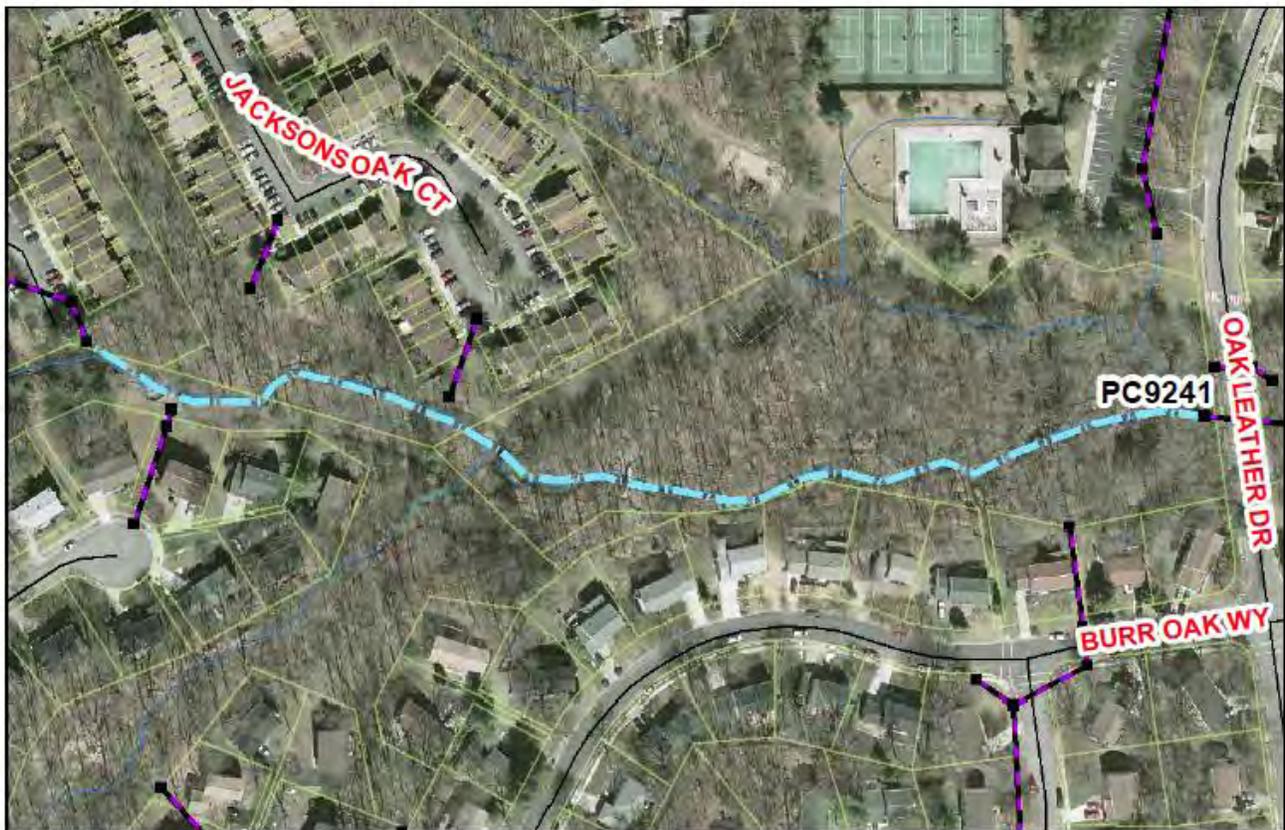
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1214	LF	\$200	\$242,800
Clear and Grub	1.40	AC	\$10,000	\$13,961
Plantings	1.40	AC	\$25,000	\$34,903
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$39,166
Ancillary Items	1	LS	5%	\$19,583
Base Construction Cost				\$450,413
Mobilization (5%)				\$22,521
Subtotal 1				\$472,934
Contingency (25%)				\$118,233
Subtotal 2				\$591,167
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$266,025
Total				\$857,192
Estimated Project Cost				\$860,000

PC9241 Stream Restoration



Address: Behind 10734 Burr Oak Way, Burke, Virginia
Location: Stream near Burr Oak Way
Land Owner: Private –Burke Centre Conservancy (open space)
PIN: 0771 07 A
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Sideburn Branch

Description: The stream is upstream of a culvert under Oak Leather Drive. The stream conveys runoff from neighborhood and community recreation facilities. Stream stabilization will repair bank and bed erosion and restore stream morphology. This project will also improve the five direct stormwater outfalls to the stream bed. This project will focus on insuring proper buffers from the dense residential areas.



Project Benefits: Restoring this stream will reduce erosion and instream sediment. Additionally, improving the five outfalls will help reduce fines from the roadway. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

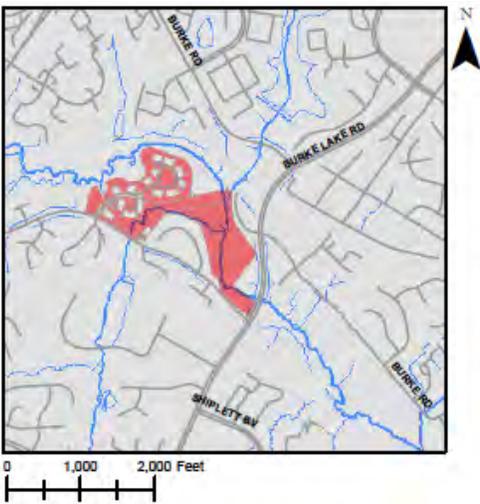
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
26.50	42.40	16.43

Project Design Considerations: The stream is located on Burke Centre Conservancy open space, but the stream runs close to the back property line of some of the single family homes and townhouses. Based on the County’s GIS contours, the stream might have meandered from its original stream bed and is now closer to the houses. Measures should be implemented to ensure proper stream buffers are maintained. The five stormwater outfalls should be reviewed and improved to ensure stable stream morphology. Possible improvements to the outfalls include installing settling basins and boulder clusters. Erosion will be stabilized through the use of bank shaping, toe of slope protection, erosion control fabrics, and rapid vegetation establishment.

Cost:

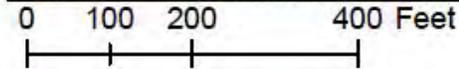
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1323	LF	\$200	\$264,600
Clear and Grub	1.52	AC	\$10,000	\$15,215
Plantings	1.52	AC	\$25,000	\$38,036
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$41,785
Ancillary Items	1	LS	5%	\$20,893
Base Construction Cost				\$480,528
Mobilization (5%)				\$24,026
Subtotal 1				\$504,555
Contingency (25%)				\$126,139
Subtotal 2				\$630,693
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$283,812
Total				\$914,506
Estimated Project Cost				\$920,000

PC9242 Stream Restoration



Address: Behind 5753 Burke Towne Ct, Burke, Virginia
Location: Stream near Burke Towne Ct.
Land Owner: Public/Local – Fairfax County Park Authority
PIN: 0781 19 A, 0781 21 B, 0781 21 A, 0781 13 A3
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes the repair of bank and bed erosion to a stream north of Burke Towne Court. The primary indicator is poor channel morphology. Stream receives runoff from adjacent residential neighborhood. The stream stabilization will reduce sediment loads while maintaining capacity of the stream and controlling unwanted meander. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Stabilizing this stream will reduce erosion and instream sediment. The stream stabilization will reduce sediment while maintaining the capacity and controlling unwanted meander of the stream. Project will not only repair existing erosion but prevent future erosion over time by implementing the measures above. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

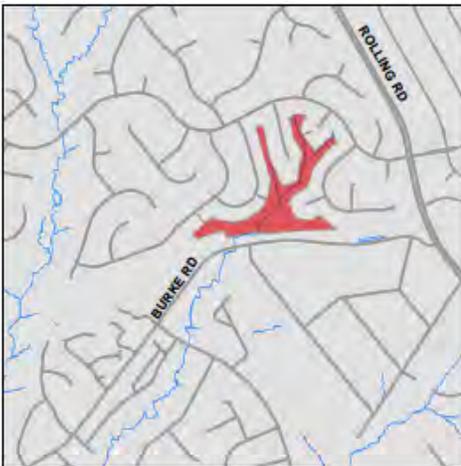
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
28.21	45.13	17.49

Project Design Considerations: Stream restoration starts at downstream point of culvert under Coffey Woods Road and extends to intersection with another stream. Stream runs close to dense residential development on Burke Towne Court and Mason Bluff Court. Stream is in dense woods. Efforts should be made to minimize impacts to existing mature vegetation.

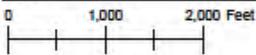
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1785	LF	\$200	\$357,000
Clear and Grub	2.05	AC	\$10,000	\$20,528
Plantings	2.05	AC	\$25,000	\$51,319
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$52,885
Ancillary Items	1	LS	5%	\$26,442
Base Construction Cost				\$608,173
Mobilization (5%)				\$30,409
Subtotal 1				\$638,582
Contingency (25%)				\$159,645
Subtotal 2				\$798,227
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$359,202
Total				\$1,157,430
Estimated Project Cost				\$1,160,000

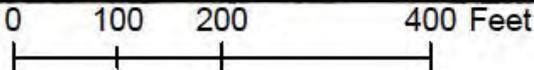
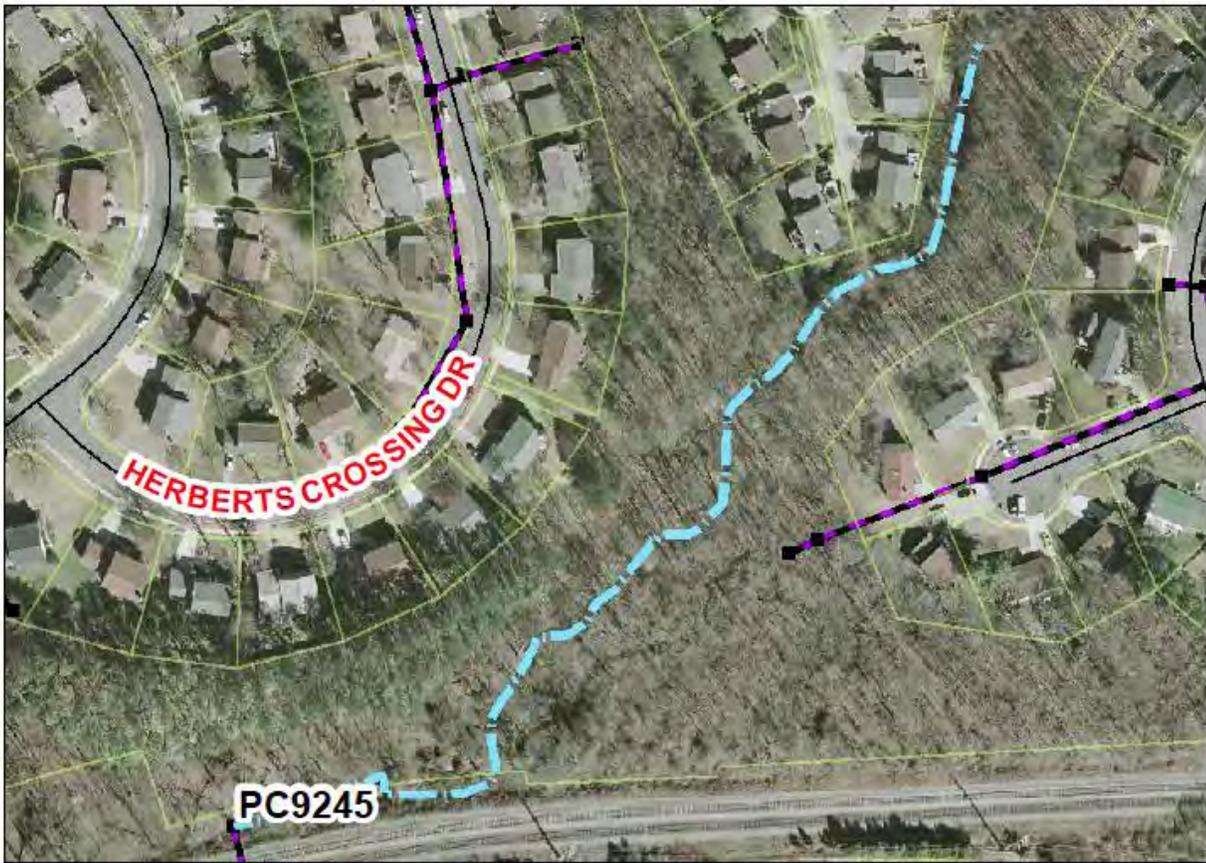
PC9245 Stream Restoration



Address: 5621 Herbert's Crossing Dr., Burke, Virginia
Location: Stream behind Herbert's Crossing Dr.
Land Owner: Private – Signal Hill Homeowners Association, Southern Railway
PIN: 0782 14 A, 0782 01 0047
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek



Description: This project proposes repairing bank and bed erosion to restore channel morphology of the stream north of Burke Road. Primary indicator is poor channel morphology. Stream conveys runoff from adjacent single family residential neighborhoods to the stream through closed systems or direct runoff. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Stream stabilization will reduce sediment loads to the stream while maintaining the capacity of the channel and controlling unwanted meander. Repairing the stream erosion will also help minimize erosion of the streambanks over time. Erosion needs to be minimized, especially because of proximity to private homes. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

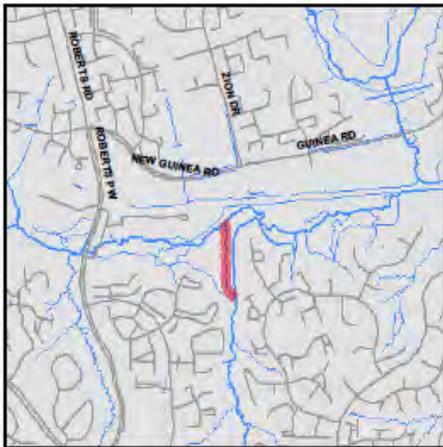
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
43.15	69.04	26.75

Project Design Considerations: Stream area is surrounded by significant dense residential development. Property is owned by Signal Hill Homeowners Association and does not have any easements on it, according to County-provided GIS. Efforts should be made to minimize impacts to existing vegetation. Portions of stream are very close to private lots and roadways. Upstream portion of stream (as shown) is a concrete channel.

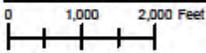
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1209	LF	\$200	\$241,800
Clear and Grub	1.39	AC	\$10,000	\$13,904
Plantings	1.39	AC	\$25,000	\$34,759
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$39,046
Ancillary Items	1	LS	5%	\$19,523
Base Construction Cost				\$449,032
Mobilization (5%)				\$22,452
Subtotal 1				\$471,483
Contingency (25%)				\$117,871
Subtotal 2				\$589,354
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$265,209
Total				\$854,563
Estimated Project Cost				\$860,000

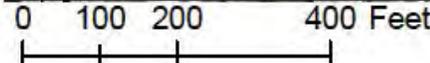
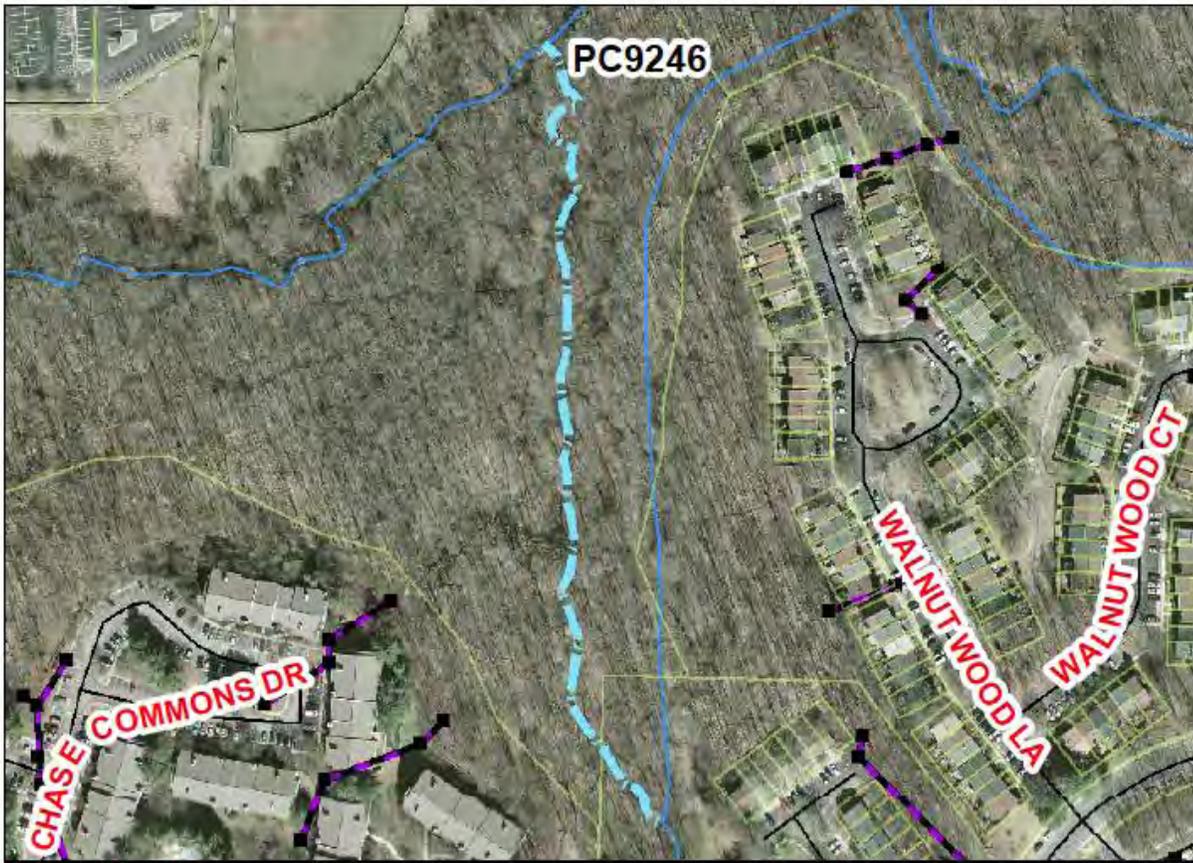
PC9246 Stream Restoration



Address: Behind 6001 Burke Commons Rd., Burke, Virginia
Location: Stream near Burke Commons Rd.
Land Owner: Private – Burke Centre Conservancy
PIN: 0772 01 0019B, 0772 09 C
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Sideburn Branch



Description: This project proposes bank and bed erosion repair to improve poor channel morphology of a stream east of Roberts Parkway and south of the railroad tracks. Stream conveys runoff from adjacent dense residential development. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Stream restoration will reduce sediment loads while maintaining capacity and controlling unwanted meander. The proposed measures will repair existing erosion and prevent future erosion. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

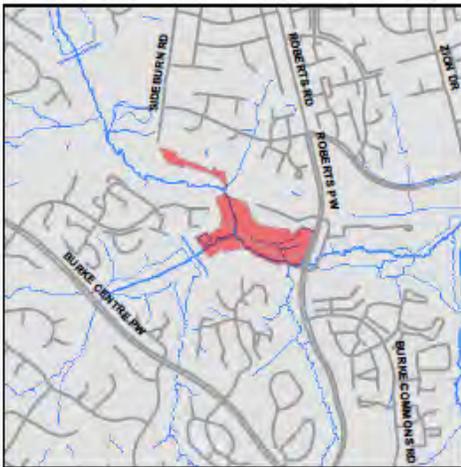
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
43.15	69.04	26.75

Project Design Considerations: Project located in wooded area behind houses. Throughout length of stream restoration, there are several footbridges crossing the water. Per a site visit, it was evident that some erosion control was in place. The bed of the stream is covered in large stones. There are several areas of significant sediment deposition. Efforts should be taken to minimize impacts to mature vegetation.

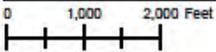
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1143	LF	\$200	\$228,600
Clear and Grub	0.34	AC	\$10,000	\$3,400
Plantings	0.34	AC	\$25,000	\$8,500
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$34,050
Ancillary Items	1	LS	5%	\$17,025
Base Construction Cost				\$391,575
Mobilization (5%)				\$19,579
Subtotal 1				\$411,154
Contingency (25%)				\$102,788
Subtotal 2				\$513,942
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$231,274
Total				\$745,216
Estimated Project Cost				\$750,000

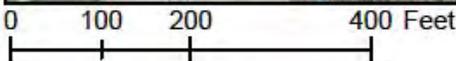
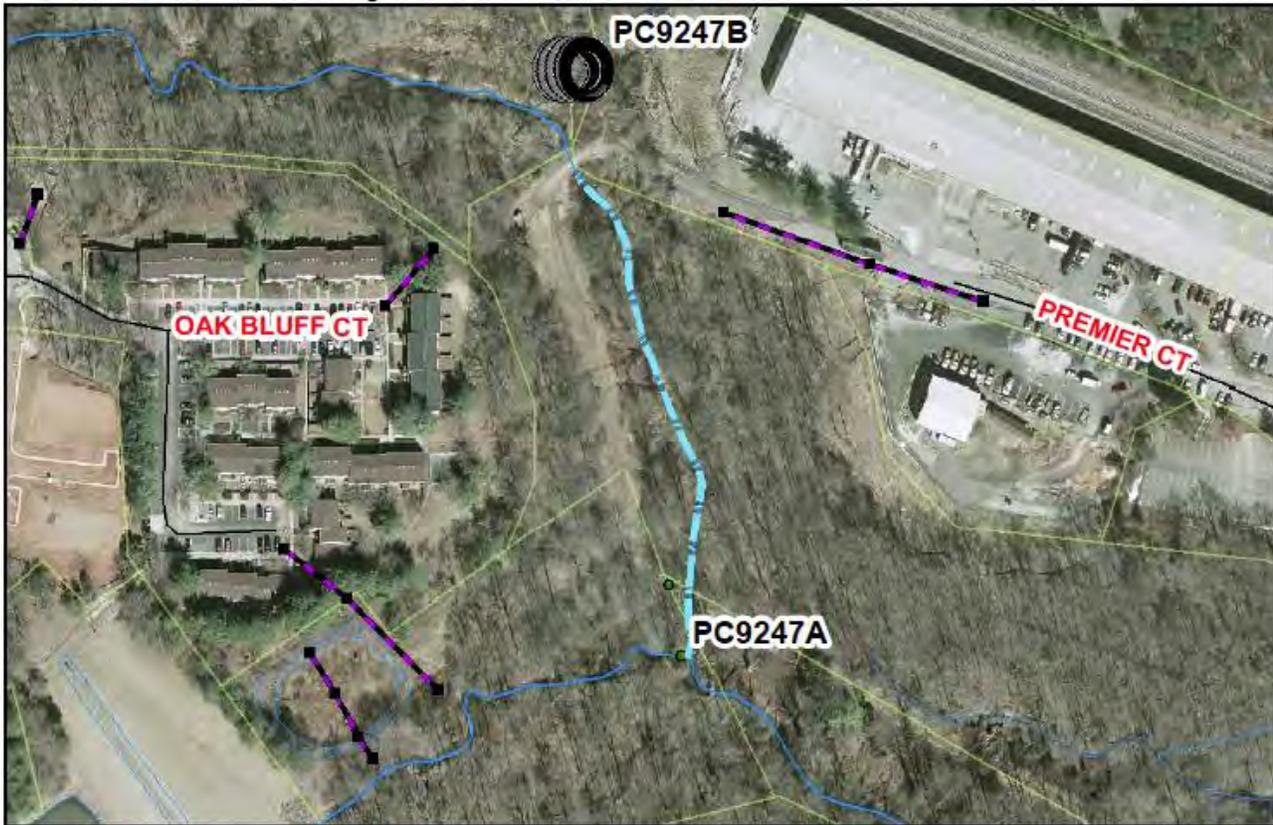
PC9247 Stream Restoration Suite



Address: 10400 Premier Ct., Burke, Virginia
Location: Stream near Premier Ct.
Land Owner: Private - Burke Centre Conservancy
PIN: 0772 01 0061C, 0772 01 0062, 0772 01 0062, 0772 01 0058B
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Sideburn Branch



Description: Subproject A is a stream restoration and will repair bed and bank erosion in the stream southwest of Premier Court at the VRE Station. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment. Subproject B is an obstruction removal southeast of Ships Curve Lane. Primary indicators are flood complaints which have been field verified. This project proposes the removal of obstructions blocking the stream channel to restore natural conditions.



- Stream Restoration
- Storm Network
- - - Buffer Restoration
- Property Line
- Streams

Project Benefits: Stabilizing this stream will reduce instream sediment and its associated pollutants. The proposed measures will repair the erosion that has occurred over time and help minimize and prevent future erosion. The obstruction removal will help restore the function of the stream by removing existing unnatural impediments. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

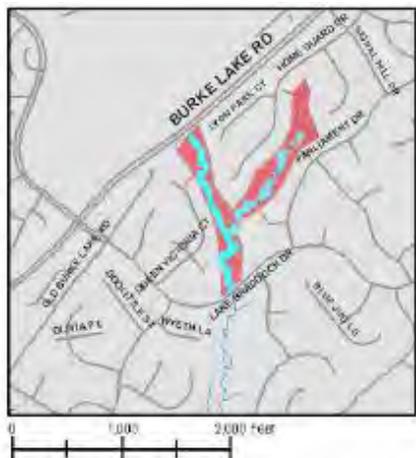
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
11.81	18.90	7.32

Project Design Considerations: Stream is accesible by a non-paved road. Stream is in a heavily wooded area and measures should be taken to minimize impacts to trees . Obstructions appear to be relatively small in size. Records show no stormwater easements. Project is located on private land owned by Burke Centre Conservancy. This suite of projects is located upstream of another stream restoration project, PC9243. Coordination of these project might result in additional benefits.

Cost:

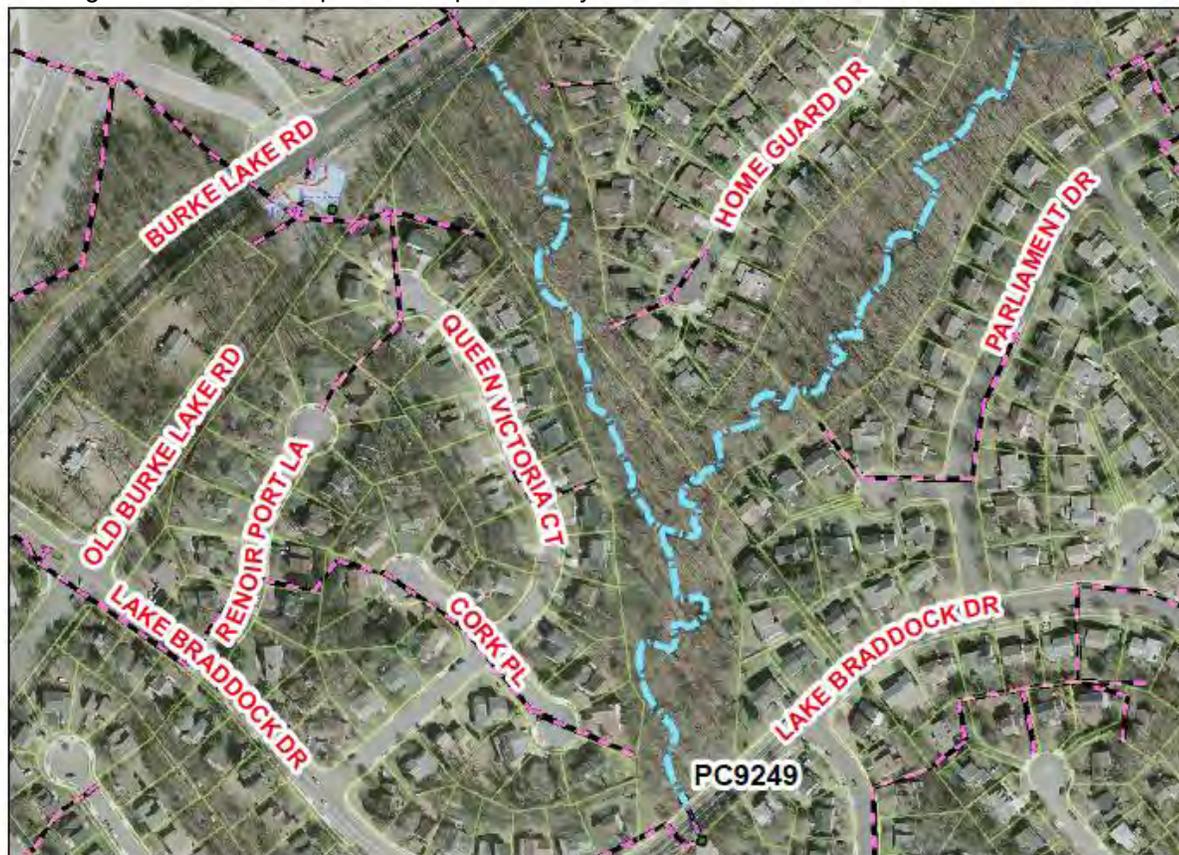
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Subproject A Stream Stabilization Behind Cove Landing Road				
Construct New Channel	574	LF	\$200	\$114,800
Clear and Grub	0.66	AC	\$10,000	\$6,600
Plantings	0.66	AC	\$25,000	\$16,500
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$23,790
Ancillary Items	1	LS	5%	\$11,895
Subproject B Dumpsite Removal near VRE Burke Centre Sta.				
Dumpsite Removal	1	LS	\$5,250	\$5,250
Base Construction Cost				\$278,835
Mobilization (5%)				\$13,942
Subtotal 1				\$292,777
Contingency (25%)				\$73,194
Subtotal 2				\$365,971
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$164,687
Total				\$530,658
Estimated Project Cost				\$540,000

PC9249 Stream Restoration



Address: Behind 5565 Queen Victoria Court, Burke, Virginia
Location: Stream near Queen Victoria Court
Land Owner: Private – Southport Homeowners Association, Signal Hill Homes Association
PIN: 0782 19 A, 0782 16 C, 0782 14 B
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek

Description: This project is proposed on the stream northwest of Parliament Drive and east of Queen Victoria Court, including the outfalls from Lake Braddock Secondary School and Braddock Road, extending to Lake Braddock Drive. This project is proposed to repair bank and bed erosion through the use of bank shaping, toe of slope protection, erosion control fabric and rapid vegetation establishment. The primary indicator is poor channel morphology and macro invertebrate. Stream stabilization will reduce sediment loads while maintaining capacity and controlling unwanted meander. It will also improve safety of a foot path/trail heavily used by Lake Braddock Secondary School students for educational activities and travelling to/from school, as well as for recreation and travelling to/from Metro bus public transportation by residents of several homeowner associations



Project Benefits: Restoring this impaired stream will reduce erosion and instream sediment and the phosphorus and nitrogen pollutants associated with the erosion. Below are the estimated pollutant removal amounts for this project. Also this restoration will improve the three stormwater outfalls to this section of the stream and will reduce the roadway sediment loading to the stream. This project will also provide educational benefit on the importance of proper stormwater management through posting of signage about the project. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

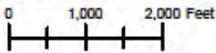
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
191.81	306.89	118.92

Project Design Considerations: This restoration is located in the Signal Hills and Southport Homeowners open space. It appears that the surrounding development has no stormwater facilities. This area appears completely developed, so the channel's geomorphology should be stable making this site favorable for stream improvements. Possible stream bank repair measures include rootwad revetments, streambank shaping, erosion control fabrics, or live stakes. This stream is adjacent to a trail used by the Lake Braddock Secondary School. Improving this stream will prevent further stream encroachment on the trail. This project is located downstream of the new stormwater project PC9141 and upstream of the outfall improvement project PC9704.

Cost:

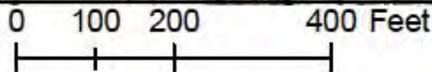
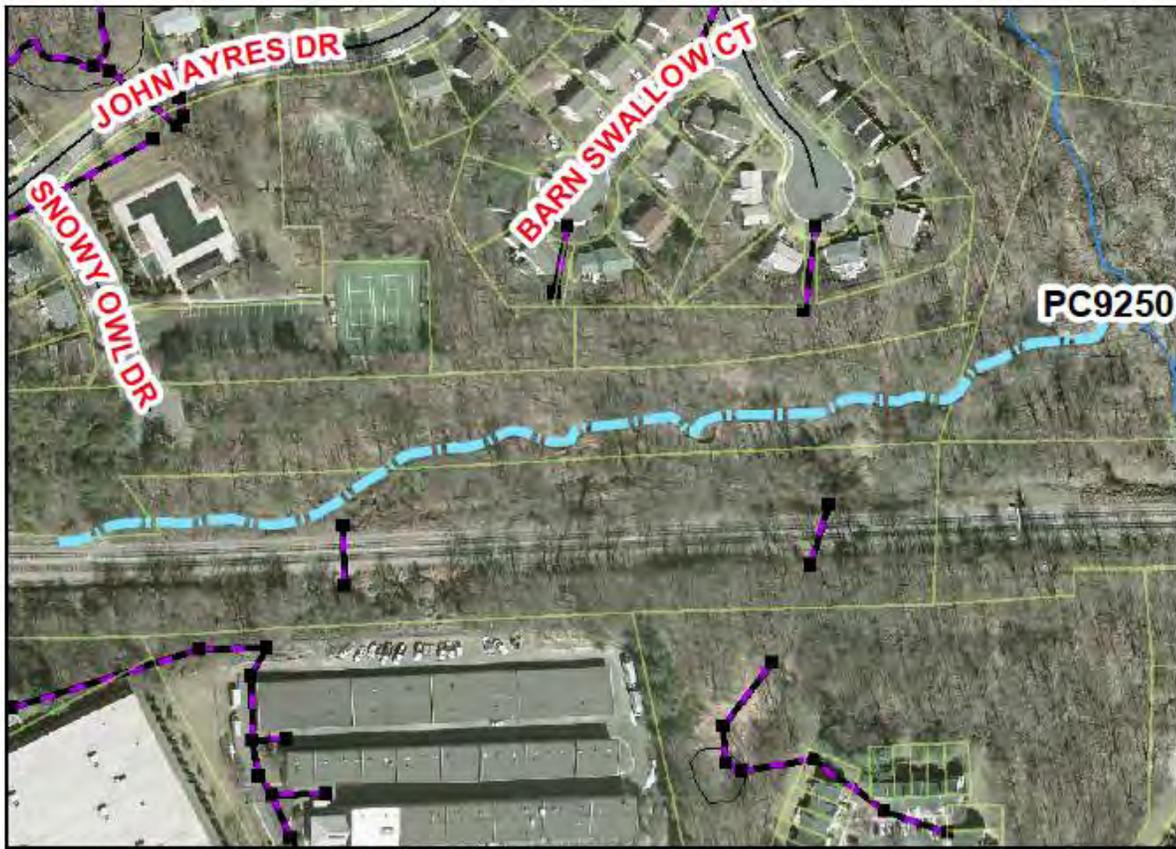
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	3353	LF	\$200	\$670,600
Clear and Grub	3.86	AC	\$10,000	\$38,560
Plantings	3.86	AC	\$25,000	\$96,399
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$90,556
Ancillary Items	1	LS	5%	\$45,278
Base Construction Cost				\$1,041,392
Mobilization (5%)				\$52,070
Subtotal 1				\$1,093,462
Contingency (25%)				\$273,365
Subtotal 2				\$1,366,827
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$615,072
Total				\$1,981,899
Estimated Project Cost				\$1,990,000

PC9250 Stream Restoration



Address: Behind 10602 Goldeneye Lane, Fairfax, Virginia
Location: Stream near Goldeneye Lane
Land Owner: Public/Local – Fairfax County Park Authority, Fairfax County Government, Southern Railway
PIN: 0772 01 0001, 0771 12 A, 0771 01 0058
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Sideburn Branch

Description: The stream is south of Golden Eye Lane and north of the railroad tracks. The stream receives runoff from adjacent neighborhoods. This project proposes to repair bank and bed erosion and restore channel morphology. The primary indicator is poor channel morphology. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.



Stream Restoration Storm Network Property Line Streams

Project Benefits: This restoration will reduce the sediment loads to the stream while maintaining capacity and controlling the meandering. The proposed measures will help repair existing erosion and prevent future erosion over time. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

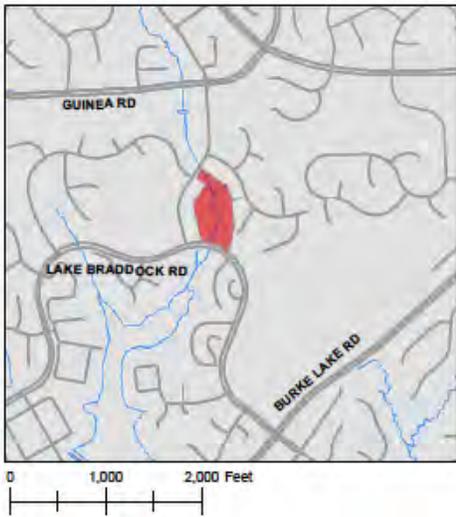
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
85.65	137.04	53.10

Project Design Considerations: Stream is on property owned by Fairfax County Park Authority, Fairfax County Government and Southern Railway. The stream runs parallel to railroad tracks. Efforts should be made to minimize impacts to mature vegetation. Coordination with Southern Railway will be necessary to ensure there will be no impacts to the tracks.

Cost:

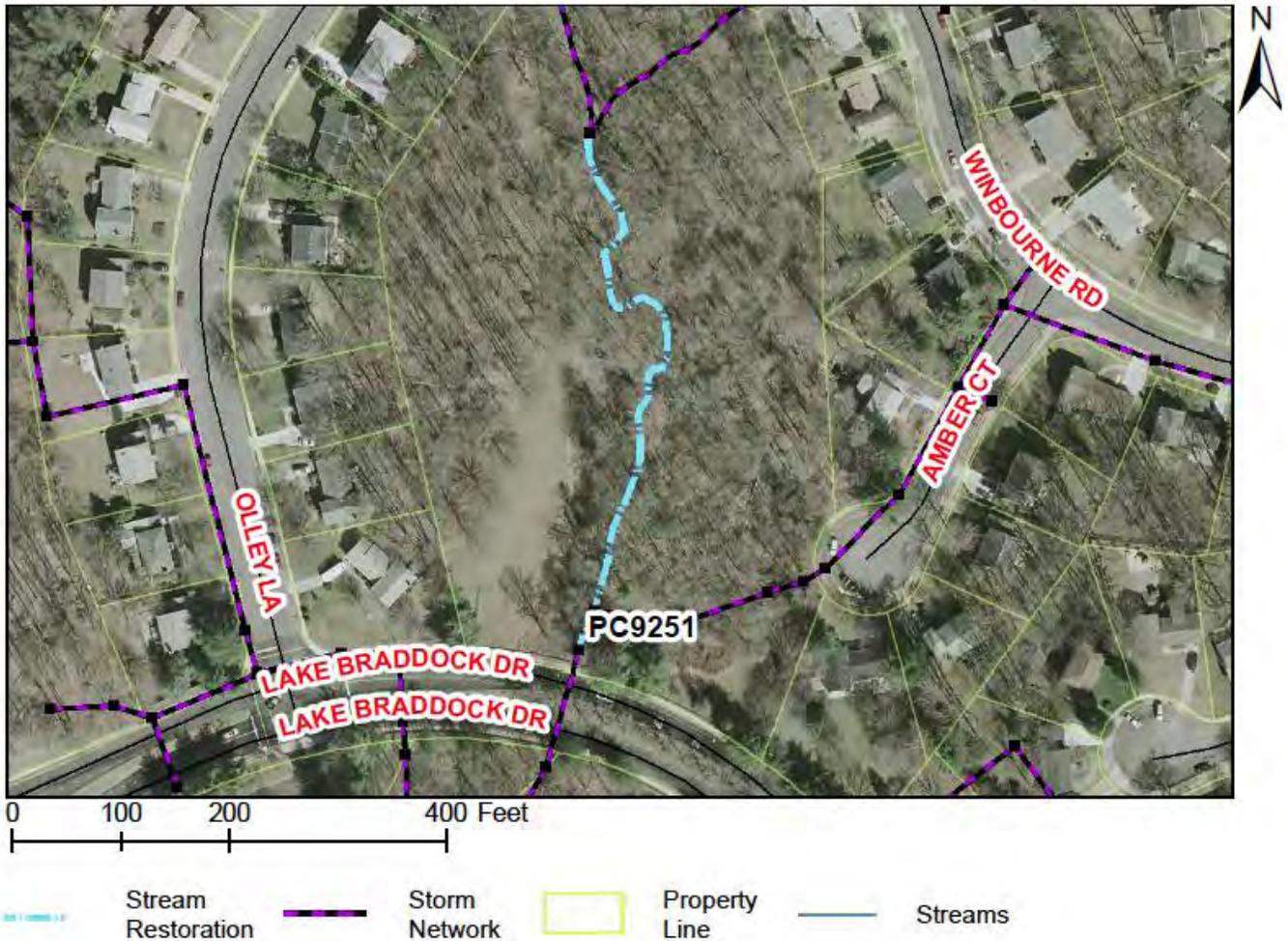
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1471	LF	\$200	\$294,200
Clear and Grub	1.69	AC	\$10,000	\$16,917
Plantings	1.69	AC	\$25,000	\$42,291
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$45,341
Ancillary Items	1	LS	5%	\$22,670
Base Construction Cost				\$521,419
Mobilization (5%)				\$26,071
Subtotal 1				\$547,490
Contingency (25%)				\$136,872
Subtotal 2				\$684,362
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$307,963
Total				\$992,325
Estimated Project Cost				\$1,000,000

PC9251 Stream Restoration



Address: Behind 9313 Winbourne Road, Burke, Virginia
Location: Stream near Winbourne Road
Land Owner: Private – Lake Braddock Community Association
PIN: 0694 10 A
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek

Description: The stream is located between Olley Lane and Winbourne Road. The stream conveys runoff from adjacent roads and single family residential neighborhoods. Stream conveys runoff from both a closed system and sheet flow from roads and homes to the north, east and west. The banks of the existing stream are significantly eroded. This project proposes repairing bank and bed erosion to restore channel morphology.



Project Benefits: This stream stabilization will reduce sediment loads to the stream, maintain the capacity of the stream channel, and control unwanted meander. These measures will help reduce the erosion that is occurring over time. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
8.23	13.16	5.10

Project Design Considerations: Existing stream bed is dry and appears to have been reinforced with riprap in sections. The restoration will focus on improving the connection of the three storm pipes to the stream. Areas of streambed erosions will be stabilized by using bank shaping techniques such as rock toe enforcements, bank revegetation, and erosion control fabric reinforcements. The stream is located on open space property.

Cost:

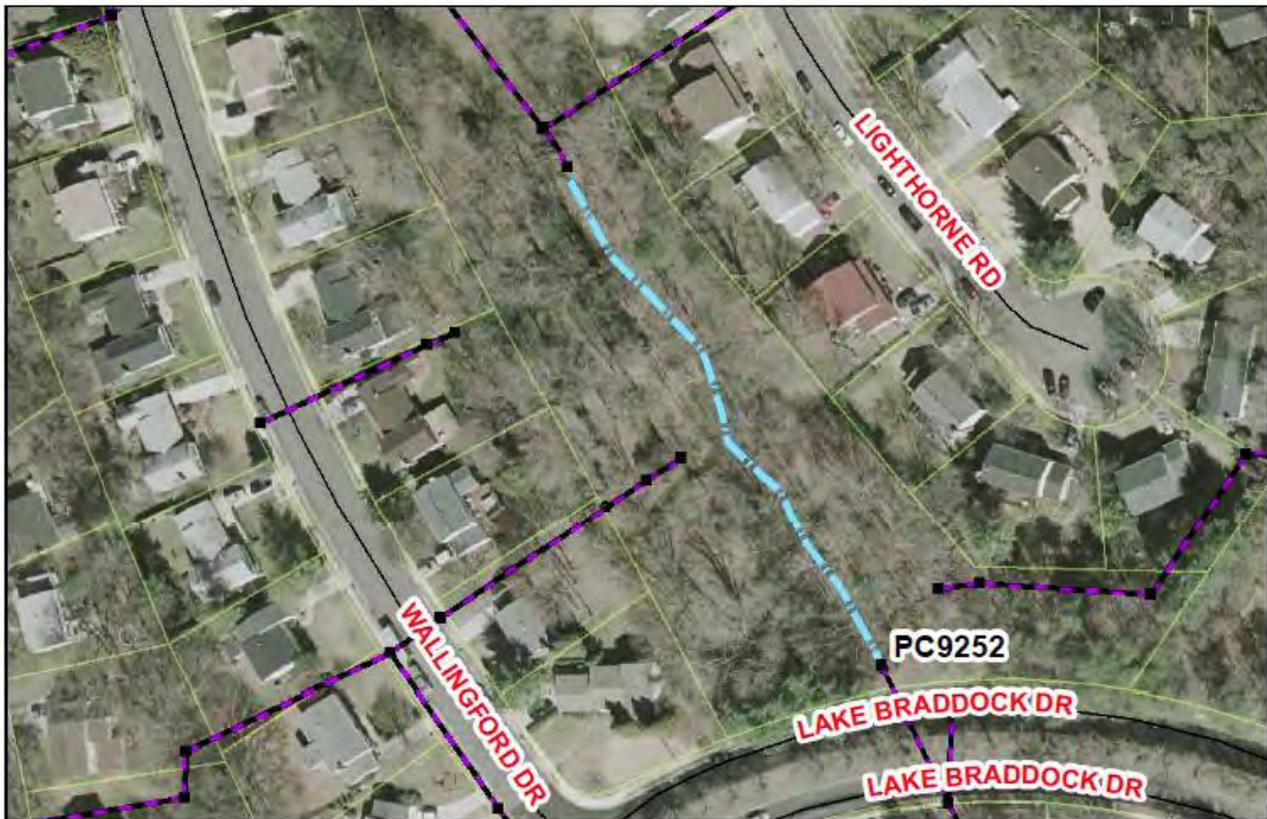
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	564	LF	\$200	\$112,800
Clear and Grub	0.65	AC	\$10,000	\$6,486
Plantings	0.65	AC	\$25,000	\$16,215
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$23,550
Ancillary Items	1	LS	5%	\$11,775
Base Construction Cost				\$270,826
Mobilization (5%)				\$13,541
Subtotal 1				\$284,367
Contingency (25%)				\$71,092
Subtotal 2				\$355,459
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$159,957
Total				\$515,416
Estimated Project Cost				\$520,000

PC9252 Stream Restoration



Address: Next to 9535 Wallingford Drive, Burke, Virginia
Location: Stream near Wallingford Drive
Land Owner: Private – Lake Braddock Homeowners Association
PIN: 0693 06 G
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek

Description: This project proposes repairing bank and bed erosion to restore channel morphology of the stream near Wallingford Drive. Stream stabilization will reduce sediment loads to the stream while maintaining the capacity and controlling unwanted meander. Erosion will be stabilized through the use of bank shaping, toe of slope protection, erosion control fabric, and rapid vegetation establishment. Stream is adjacent to the roadway.



— Stream Restoration
 - - - Storm Network
 Property Line
 — Streams

Project Benefits: This stream restoration will reduce erosion and instream sediment. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

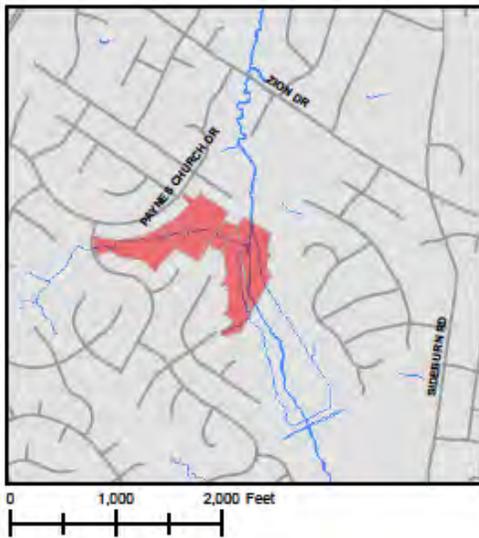
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
3.50	5.59	2.17

Project Design Considerations: This stream is located in the Lake Braddock open space and is near a stream daylighting project (PC9253 – middle left of restoration length) and a bioswale project (PC9544C – southeast of cul-de-sac). This project should be coordinated with the other project to maximize its benefits and minimize costs. This stream receives runoff from an upstream culvert and two other storm pipe outfalls.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	393	LF	\$200	\$78,600
Clear and Grub	0.45	AC	\$10,000	\$4,520
Plantings	0.45	AC	\$25,000	\$11,299
Additional Cost, First 500 LF	393	LF	\$200	\$78,600
Erosion and Sediment Control	1	LS	10%	\$17,302
Ancillary Items	1	LS	5%	\$8,651
Base Construction Cost				\$198,971
Mobilization (5%)				\$9,949
Subtotal 1				\$208,920
Contingency (25%)				\$52,230
Subtotal 2				\$261,149
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$117,517
Total				\$378,667
Estimated Project Cost				\$380,000

PC9254 Stream Restoration



Address: Behind 10757 John Turley Place, Fairfax, Virginia
Location: Stream near John Turley Place
Land Owner: Public/Local – Fairfax County Park Authority
PIN: 0683 01 0035F, 0683 05 A2, 0683 01 0035B, 0683 05 A, 0683 05 B, 0683 05 C
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Sideburn Branch

Description: The project consists of restoration of a stream that discharges into Woodglen Pond. The primary indicator is poor channel morphology. This project proposes restoring the stream by repairing bank and bed erosion and restoring channel morphology. This will reduce sediment loads to the stream while maintaining capacity of the stream channel and controlling unwanted meander of the stream. Erosion will be stabilized through the use of bank shaping, toe of slope protection, erosion control fabric, and rapid vegetation establishment.



Project Benefits: This stream restoration will reduce erosion and instream sediment. This project will stabilize banks and reestablish the streambed away from the single family homes. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

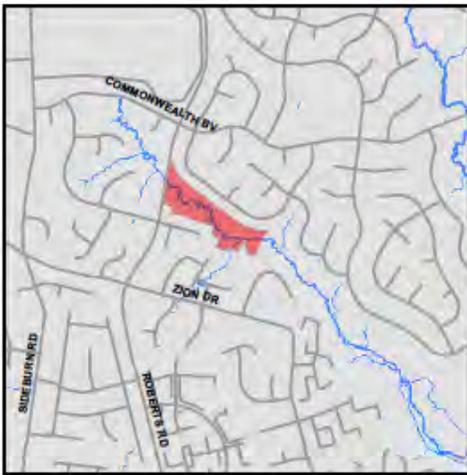
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
123.13	197.00	76.34

Project Design Considerations: This stream restoration is bordered on the upstream end by a culvert under Broadwater Drive and two stormwater system outfalls. Going east, the stream has meandered too close to the back property line of houses near another stormwater outfall. This outfall should be improved to include a settling basin and the stream channel should be directed farther south. The other three stormwater outfall connections should be improved to ensure a stable connection to the stream.

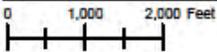
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1566	LF	\$200	\$313,200
Clear and Grub	1.80	AC	\$10,000	\$18,009
Plantings	1.80	AC	\$25,000	\$45,023
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$47,623
Ancillary Items	1	LS	5%	\$23,812
Base Construction Cost				\$547,666
Mobilization (5%)				\$27,383
Subtotal 1				\$575,050
Contingency (25%)				\$143,762
Subtotal 2				\$718,812
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$323,465
Total				\$1,042,277
Estimated Project Cost				\$1,050,000

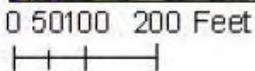
PC9256 Stream Restoration



Address: Behind 5351 Brandon Ridge Way, Fairfax, Virginia
Location: Stream near Brandon Ridge Way
Land Owner: Public/Local - Fairfax County Park Authority
PIN: 0684 09 E1
Control Type: Water quality control
Drainage Area:
Receiving Waters: Tributary of Rabbit Branch



Description: The stream north of Windsor Hills Drive has indicators of poor channel morphology. In order to improve the channel, this project proposes repairing bank and bed erosion. This stream is located on Fairfax County Park Authority land. The stream receives water from adjacent residential neighborhoods. The stormwater is collected in pipes and receives no treatment before discharging to the stream. Stream stabilization will reduce sediment while maintaining capacity of the channel and controlling unwanted meander.



Project Benefits: Restoring this stream will reduce erosion and instream sediment. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

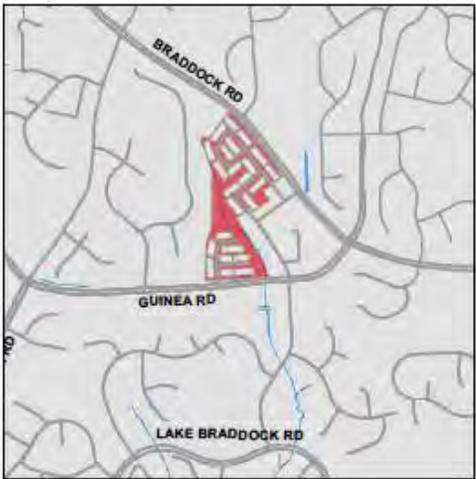
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal I(Lbs/Yr)
19.94	31.90	12.36

Project Design Considerations: The residential area surrounding the stream has been developed long enough for the stream channel to adapt to convey the increased flows of the development. Grade control measures such as step pools and rock cross vanes should be implemented to ensure the future stability of the stream. Streambank shaping techniques such as erosion control fabrics and vegetation establishment should be included to stabilize exposed soil and prevent erosion and sediment loading to the stream. Additionally, outfall improvements can be made at the storm pipe connections to the stream bed.

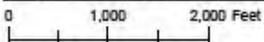
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1659	LF	\$200	\$331,800
Clear and Grub	1.91	AC	\$10,000	\$19,079
Plantings	1.91	AC	\$25,000	\$47,696
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$49,857
Ancillary Items	1	LS	5%	\$24,929
Base Construction Cost				\$573,361
Mobilization (5%)				\$28,668
Subtotal 1				\$602,029
Contingency (25%)				\$150,507
Subtotal 2				\$752,536
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$338,641
Total				\$1,091,178
Estimated Project Cost				\$1,100,000

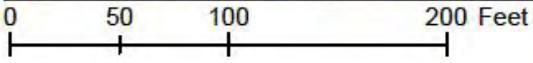
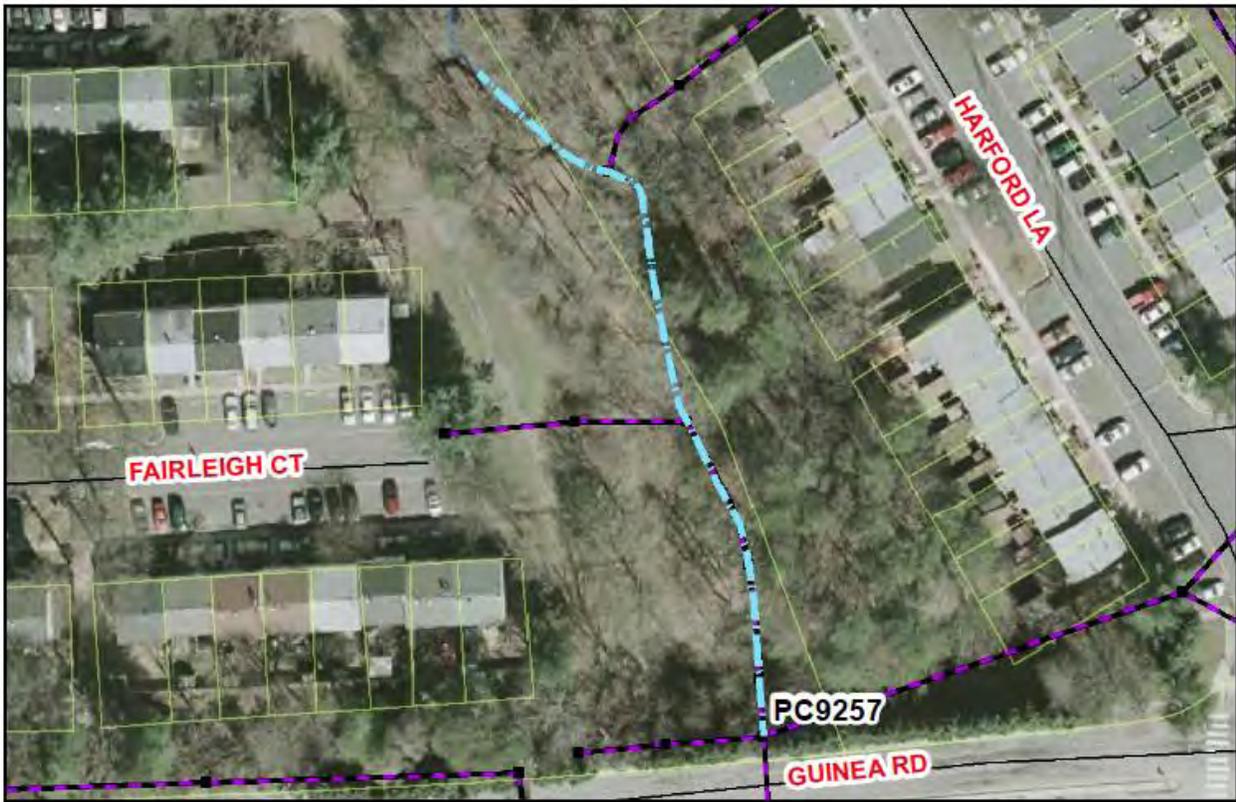
PC9257 Stream Restoration



Address: Next to 9404 Fairleigh Court, Burke, Virginia
Location: Stream near Fairleigh Court
Land Owner: Private –Lake Braddock Community Association
PIN: 0694 11 C, 0694 11 D
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Pohick Creek



Description: This project consists of restoration of a stream near Fairleigh Court, which receives runoff from closed storm systems that drain residential neighborhoods. The primary indicator is poor channel morphology. Stream stabilization will reduce sediment loads to the stream while maintaining stream capacity and controlling



Stream Restoration Storm Network Property Line Streams

Project Benefits: This stream restoration will reduce erosion and instream sediment. Improving the storm pipe outfalls to stream bed connections will help reduce sediment from the untreated roadway runoff. Daylighting the storm pipe will allow for greater infiltration, baseflow, and a decrease in stormwater temperature. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
5.13	8.21	3.18

Project Design Considerations: Project is just downstream of another pipe daylighting project, PC9258. Both projects are located on Lake Braddock open space. This stream is believed to be a primary source of downstream sediment. In fact, the dry pond downstream has recently been cleaned, but there is concern of the pond having insufficient infiltration of stormwater due to sediment clogging the pond floor. Daylighting the upstream storm system and creating sediment forebays for the storm outfalls will help reduce sediment, improve water quality, and increase infiltration. Currently the stream is dry, eroded, and has debris (see photo).

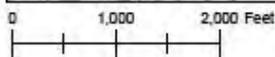
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	352	LF	\$200	\$70,400
Clear and Grub	0.40	AC	\$10,000	\$4,048
Plantings	0.40	AC	\$25,000	\$10,120
Additional Cost, First 500 LF	352	LF	\$200	\$70,400
Erosion and Sediment Control	1	LS	10%	\$15,497
Ancillary Items	1	LS	5%	\$7,748
Base Construction Cost				\$178,213
Mobilization (5%)				\$8,911
Subtotal 1				\$187,124
Contingency (25%)				\$46,781
Subtotal 2				\$233,905
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$105,257
Total				\$339,162
Estimated Project Cost				\$340,000

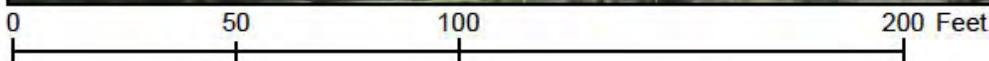
PC9258 Stream Restoration



Address: Next to 5101 Dahlgreen Place, Burke, Virginia
Location: Stream near Dahlgreen Place
Land Owner: Private – Lake Braddock Community Association
PIN: 0694 11 D
Control Type: Water quality and quantity control
Drainage Area: 4.98 acres
Receiving Waters: Tributary of Pohick Creek



Description: This project proposes daylighting a pipe from a residential neighborhood (Dahlgreen Place) farther upstream. The primary indicator is poor channel morphology. This project will return the water to its natural state. This will reduce the velocity at which stormwater enters the stream. Additionally, the daylighting will provide more opportunity for the stormwater to infiltrate. This will help reduce runoff rates and stream erosion.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Restoring this stream will lessen the amount of erosion downstream and result in less instream sediment. Daylighting this pipe will allow the stormwater to return to a natural state earlier, which will allow the water to infiltrate better and will help reduce erosive velocities. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
1.65	2.64	1.02

Project Design Considerations: This project is located in Lake Braddock Community open space. Records show no easements. Stormwater runoff from these townhouses receives no treatment before being directly discharged to the stream. The existing outfall is reinforced with rip rap, but still shows signs of scour from erosive velocities. Daylighting the existing pipe farther upstream would increase the chance for the stormwater to infiltrate and for vegetation to absorb/ breakdown some of the pollutants. Depending on the slope of the pipe, stepping pools may be required. Other measures at this site could be the creation of storage below the outfall.

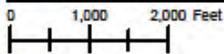
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	113	LF	\$200	\$22,600
Clear and Grub	0.13	AC	\$10,000	\$1,300
Plantings	0.13	AC	\$25,000	\$3,249
Additional Cost, First 500 LF	113	LF	\$200	\$22,600
Erosion and Sediment Control	1	LS	10%	\$4,975
Ancillary Items	1	LS	5%	\$2,487
Base Construction Cost				\$57,210
Mobilization (5%)				\$2,861
Subtotal 1				\$60,071
Contingency (25%)				\$15,018
Subtotal 2				\$75,089
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$33,790
Total				\$108,879
Estimated Project Cost				\$110,000

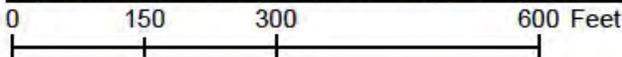
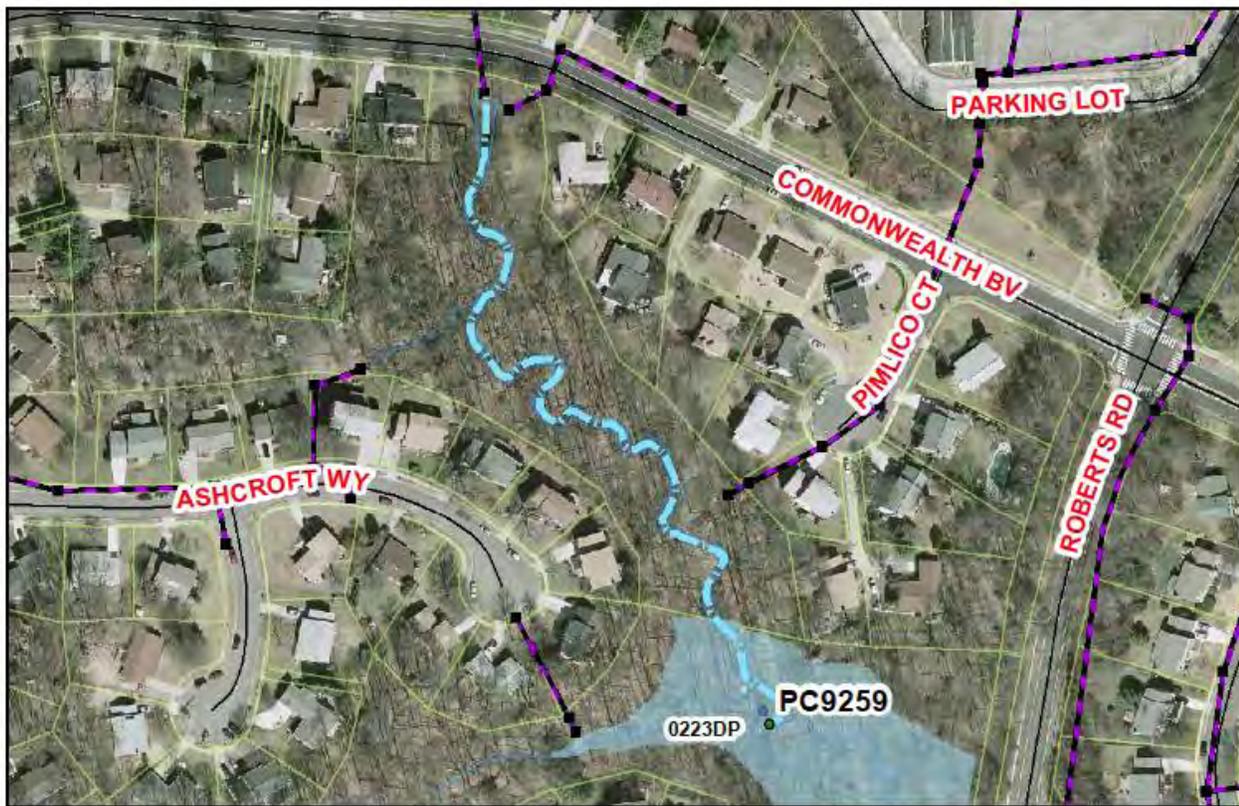
PC9259 Stream Restoration



Address: Behind 5220 Nottinghill Lane, Fairfax, Virginia
Location: Stream near Nottinghill Lane
Land Owner: Private – Kings Park West Community Association
PIN: 0684 09 C, 0684 09 A
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Rabbit Branch



Description: This project proposes the repair of bank and bed erosion to a stream that discharges to the existing pond 0223DP. The stream is located in a wooded open space. The primary indicator is poor channel morphology. Stream stabilization will reduce sediment loads to the stream while maintaining capacity. Stabilizing this stream will help reduce the sediment to the pond.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Reducing erosion from this stream will reduce instream sediment and its associated pollutants. Stabilizing the stream will lessen the sediment load to the downstream pond and will decrease the maintenance necessary for the pond. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

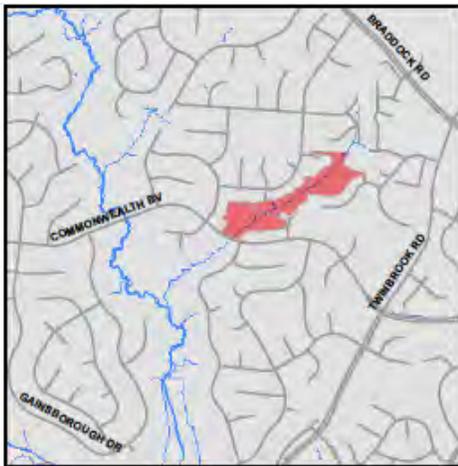
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
11.43	18.28	7.08

Project Design Considerations: This stream conveys water upstream of Commonwealth Blvd. Additionally, the stream receives untreated roadway runoff from closed pipes at Pimlico Court and Commonwealth Blvd. The stream is located in Kings Park West open space. This restoration should be coordinated with the stormwater pond retrofit of 0223DP (PC9135). Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.

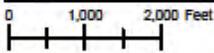
Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1100	LF	\$200	\$220,000
Clear and Grub	1.27	AC	\$10,000	\$12,650
Plantings	1.27	AC	\$25,000	\$31,625
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$36,428
Ancillary Items	1	LS	5%	\$18,214
Base Construction Cost				\$418,916
Mobilization (5%)				\$20,946
Subtotal 1				\$439,862
Contingency (25%)				\$109,966
Subtotal 2				\$549,828
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$247,422
Total				\$797,250
Estimated Project Cost				\$800,000

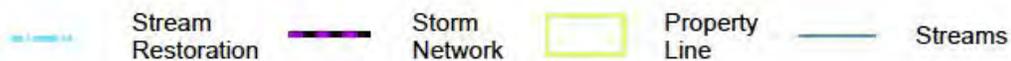
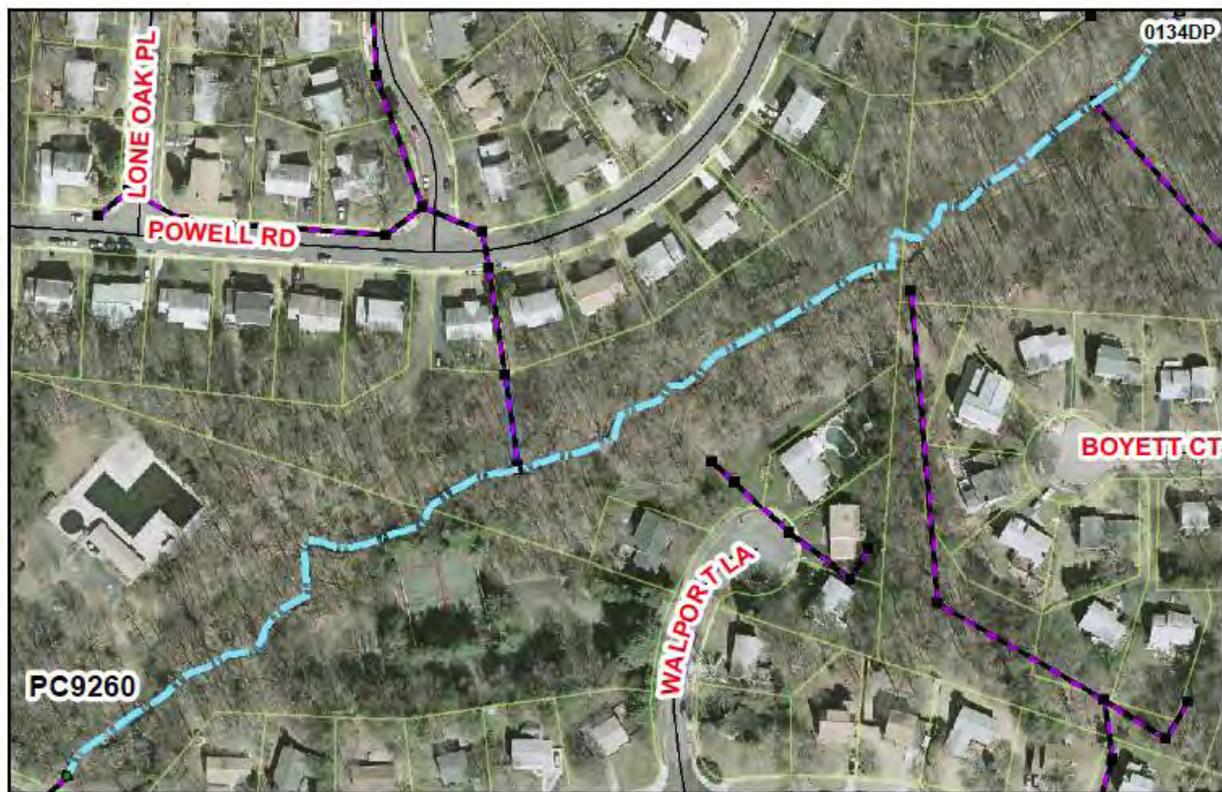
PC9260 Stream Restoration



Address: Near 9800 Commonwealth Blvd., Fairfax, Virginia
Location: Stream near Commonwealth Blvd.
Land Owner: Private –Twinbrook HOA, Maywood Terrace HOA, Commonwealth Swim Club Inc.
PIN: 0693 09 E, 0693 07 A1, 0693 05 B
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Rabbit Branch



Description: The stream runs parallel to Powell Road towards Commonwealth Boulevard and has indicators of poor channel morphology. This project proposes to repair bank and bed erosion and restore channel morphology. Stream stabilization will reduce sediment loads to the stream while maintaining capacity of the channel and controlling unwanted meander. Erosion will be stabilized through the use of bank shaping, toe of slope protection, erosion control fabrics, and rapid vegetation establishment.



Project Benefits: Restoring this stream will reduce instream sediment and its associated pollutants. Additionally, improving the five stream outfalls will help reduce erosive velocities in the stream. Below are the stream's estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

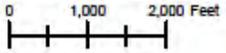
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
15.25	24.40	9.46

Project Design Considerations: This restoration is downstream of the proposed stormwater pond retrofit of 0134DP (Project PC9137). The stream restoration should be coordinated with PC9137 to help maximize the benefits of both projects. This stream has a longitudinal slope of approximately 1.8% and receives runoff from four stormwater outfalls. Three of the outfalls appear to directly discharge to the stream and one is slightly disconnected. Settling basins for these outfalls would reduce flow velocities and allow for some instream settling of any roadway fines. Records show no easements for the stream. This project will need to be coordinated between the three private entities of Twinbrook HOA, Maywood Terrace HOA, and Commonwealth Swim Club Inc.

Cost:

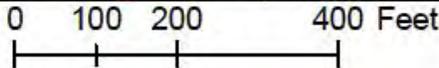
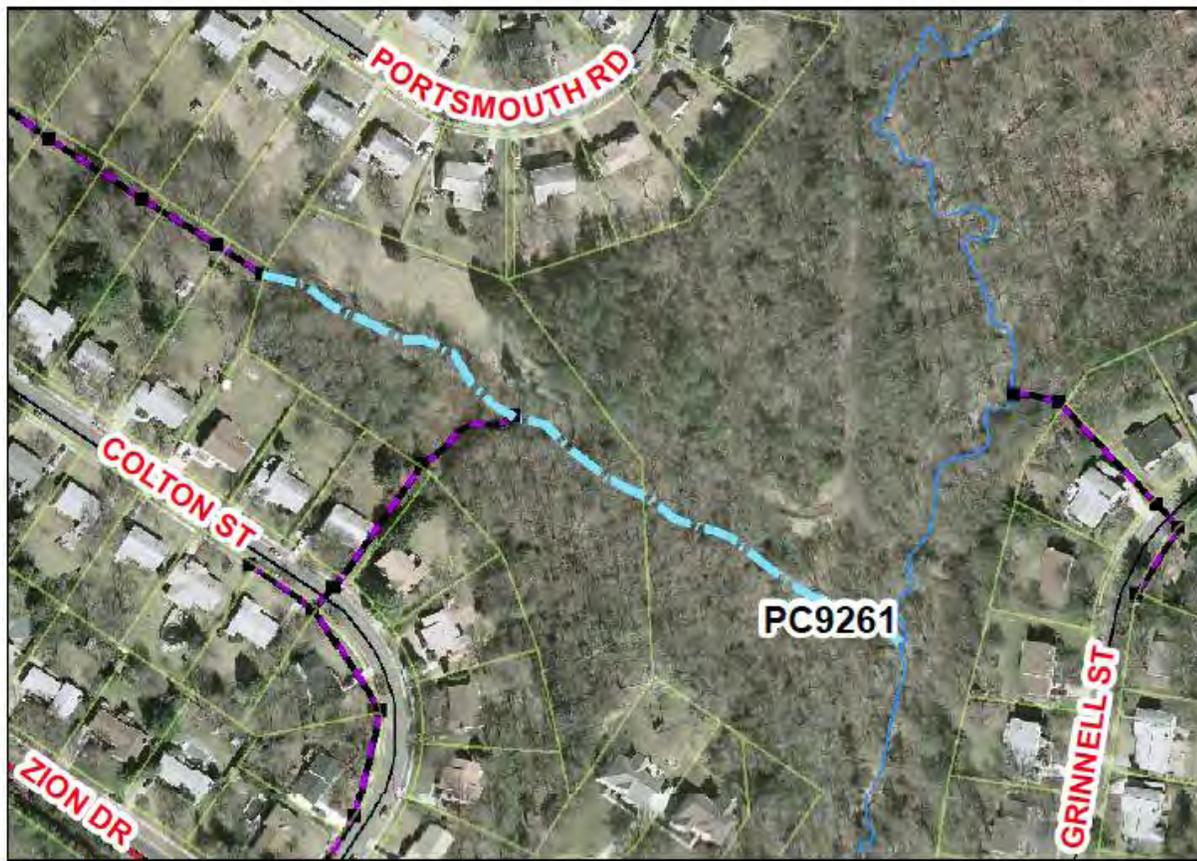
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1673	LF	\$200	\$334,600
Clear and Grub	1.92	AC	\$10,000	\$19,240
Plantings	1.92	AC	\$25,000	\$48,099
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$50,194
Ancillary Items	1	LS	5%	\$25,097
Base Construction Cost				\$577,229
Mobilization (5%)				\$28,861
Subtotal 1				\$606,090
Contingency (25%)				\$151,523
Subtotal 2				\$757,613
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$340,926
Total				\$1,098,539
Estimated Project Cost				\$1,100,000

PC9261 Stream Restoration



Address: Behind 5214 Grinnell Street, Fairfax, Virginia
Location: Stream near Grinnell St. (northwest reach)
Land Owner: Public/Local – Fairfax County Park Authority
PIN: 0683 0408 A, 0683 0407 B
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Sideburn Branch

Description: This project proposes restoration of a stream running parallel to Colton Street. The project consists of repairing bank and bed erosion and restoring channel morphology. The primary indicator is poor channel morphology. Stream conveys runoff from adjacent residential development. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics, and rapid vegetation establishment.



— Stream Restoration
 - - - Storm Network
 Property Line
 — Streams

Project Benefits: Stream stabilization of this stream segment will reduce sediment loads while maintaining capacity and controlling unwanted meander. Measures will be put in place to repair existing erosion and prevent future erosion over time. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

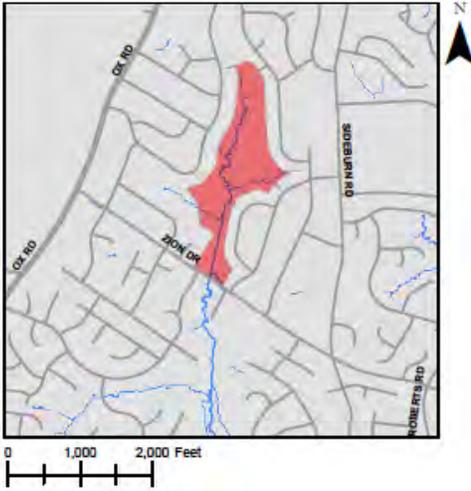
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
7.64	12.23	4.74

Project Design Considerations: The section of stream to be restored is entirely on property owned by Fairfax County Park Authority. The adjacent residential area is piped into the stream without any pre-treatment. During restoration of this stream great effort will be taken to minimize impacts to mature vegetation and to maintain the buffer.

Cost:

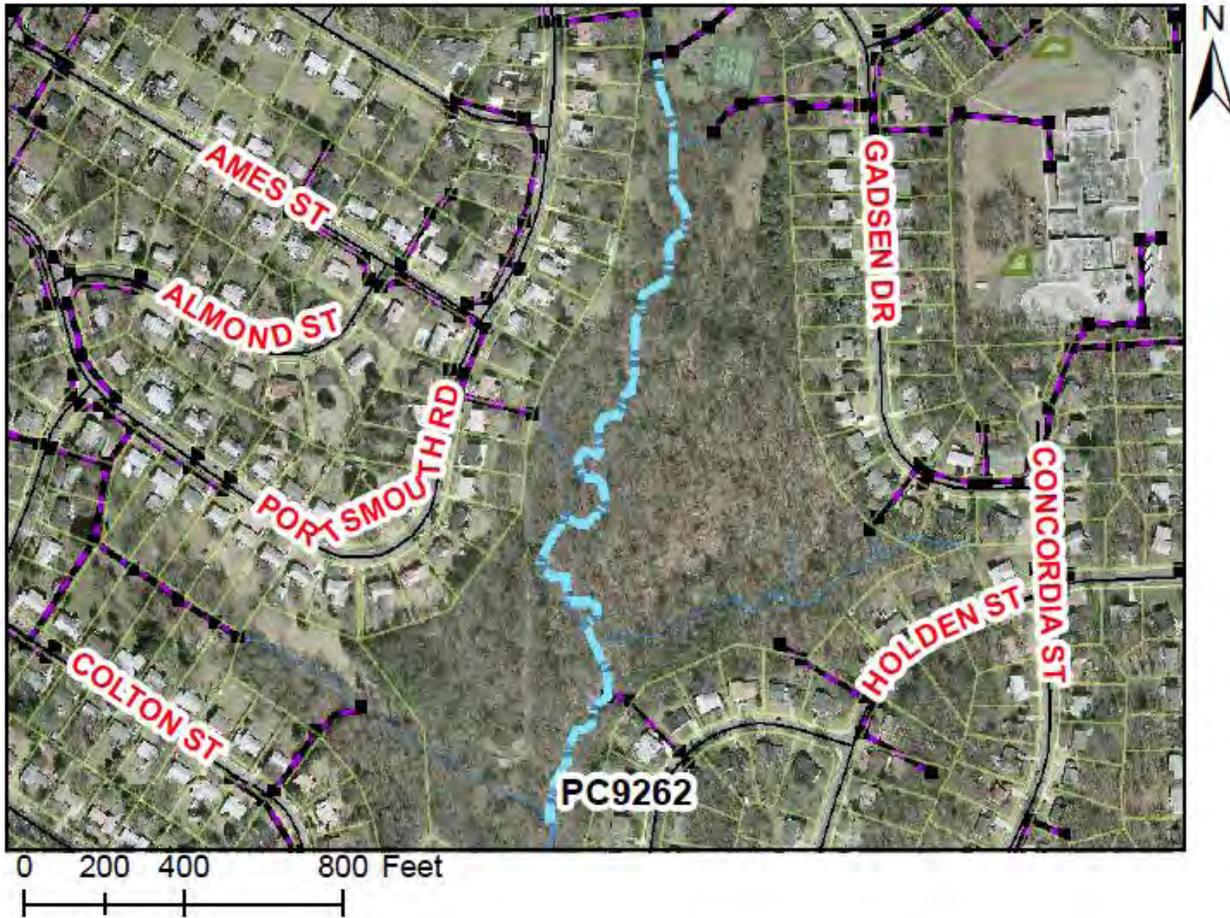
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	938	LF	\$200	\$187,600
Clear and Grub	1.08	AC	\$10,000	\$10,787
Plantings	1.08	AC	\$25,000	\$26,968
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$32,535
Ancillary Items	1	LS	5%	\$16,268
Base Construction Cost				\$374,158
Mobilization (5%)				\$18,708
Subtotal 1				\$392,866
Contingency (25%)				\$98,216
Subtotal 2				\$491,082
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$220,987
Total				\$712,069
Estimated Project Cost				\$720,000

PC9262 Stream Restoration



Address: Behind 5214 Grinnell Street, Fairfax, Virginia
Location: Stream near Grinnell Street (northeast reach)
Land Owner: Public/Local – Fairfax County Park Authority
PIN: 0683 0407 B
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Sideburn Branch

Description: The stream is east of Portsmouth Road and west of Gadsen Drive and flows to the south. The stream collects runoff from adjacent residential neighborhoods and a school to the north, east and west. This project proposes the repair and restoration of bank and bed erosion, some of which is severe. Erosion will be stabilized through the use of bank shaping, toe protection, erosion control fabrics and rapid vegetation establishment.



— Stream Restoration
 - - - Storm Network
 Property Line
— Streams

Project Benefits: The stream stabilization will reduce sediment loads to the stream and maintain the capacity of the stream channel to control unwanted meander. Restoration will reduce erosion over time and improve the overall condition of the stream and buffers. Stream also runs very close to adjacent residential neighborhoods and erosion could eventually have impacts on homes. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

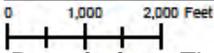
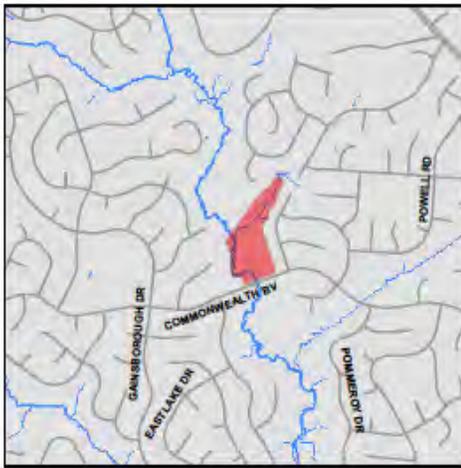
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
92.15	147.45	57.14

Project Design Considerations: Residential area outfalls through a closed system without any treatment. Runoff may be entering stream areas at a high velocity causing erosion. Some outfalls daylight close to the stream without very much buffer. The entire area of restoration is on property owned by Fairfax County Park Authority.

Cost:

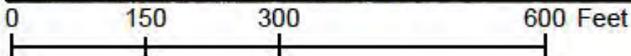
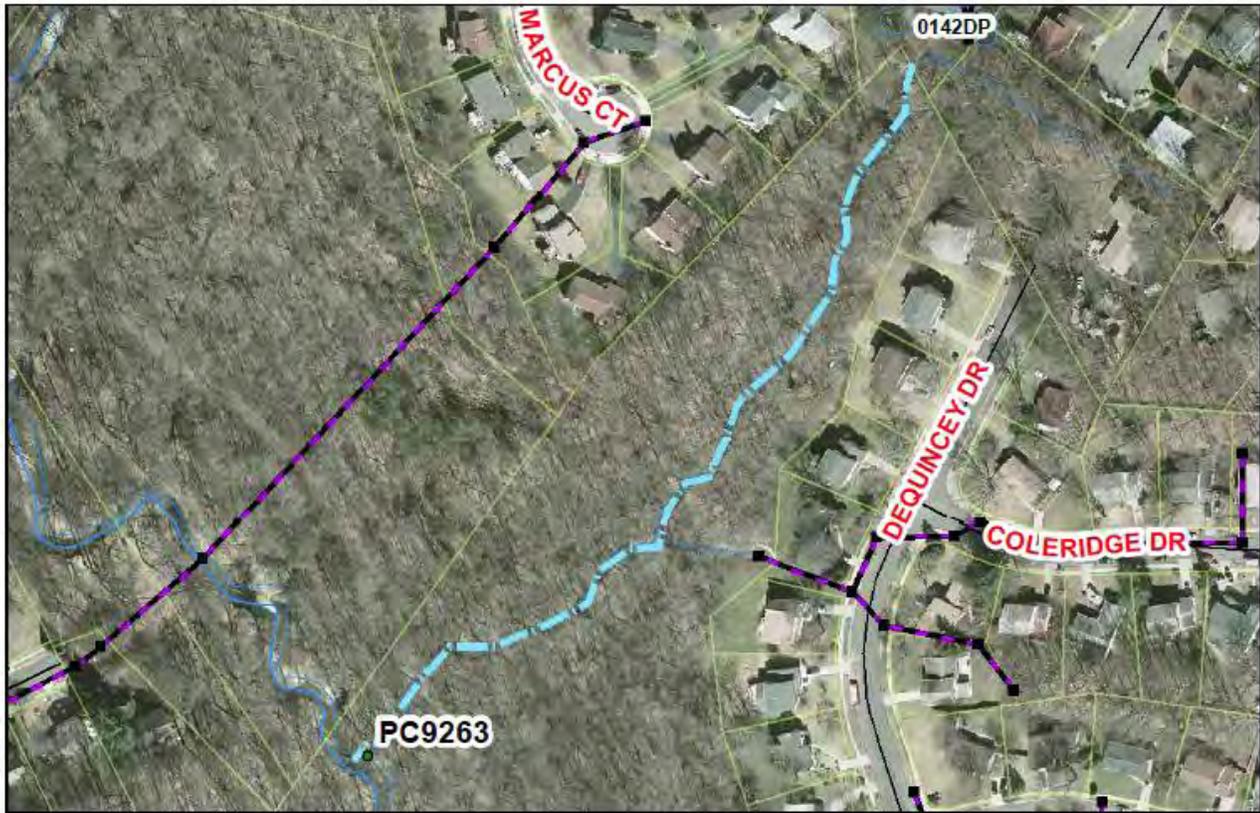
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	2464	LF	\$200	\$492,800
Clear and Grub	2.83	AC	\$10,000	\$28,336
Plantings	2.83	AC	\$25,000	\$70,840
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$69,198
Ancillary Items	1	LS	5%	\$34,599
Base Construction Cost				\$795,772
Mobilization (5%)				\$39,789
Subtotal 1				\$835,561
Contingency (25%)				\$208,890
Subtotal 2				\$1,044,451
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$470,003
Total				\$1,514,454
Estimated Project Cost				\$1,520,000

PC9263 Stream Restoration



Address: Behind 5802 Dequinney Dr., Fairfax, Virginia
Location: Stream near Dequinney Dr.
Land Owner: Public/Local – Fairfax County Park Authority
PIN: 0693 05 E
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Rabbit Branch

Description: The stream west of Dequinney Drive shows indications of poor channel morphology. This project proposes improving channel morphology by repairing bed and bank erosion. These repairs will include streambed shaping, rock toe reinforcement, erosion control fabric, and revegetation in degraded areas. The stream currently conveys water from three different sources; sheet flow from adjacent neighborhoods, untreated stormwater from a closed storm system outfall, and the outfall from a dry pond. Stream stabilization will reduce sediment loads, maintain capacity of the stream channel, and control unwanted meander.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: The elimination of bed and bank erosion will reduce instream sediment and result in a reduction of the nitrogen and phosphorus associated with the sediment. Additionally, this project will provide an opportunity to ensure proper operation of dry pond 0142DP. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

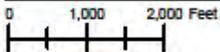
TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
12.30	19.67	7.62

Project Design Considerations: This project is located on Fairfax County Park Authority property, so no additional easement will be necessary. Because the stream is located behind single family houses, measures should be incorporated to ensure a proper stream buffer. The upstream dry pond’s design and maintenance should be reviewed in coordination with this stream restoration. Grade control measures should be investigated due to this stream having a longitudinal slope of approximately 1.9%.

Cost:

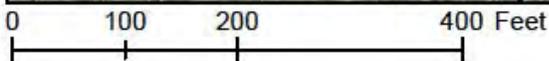
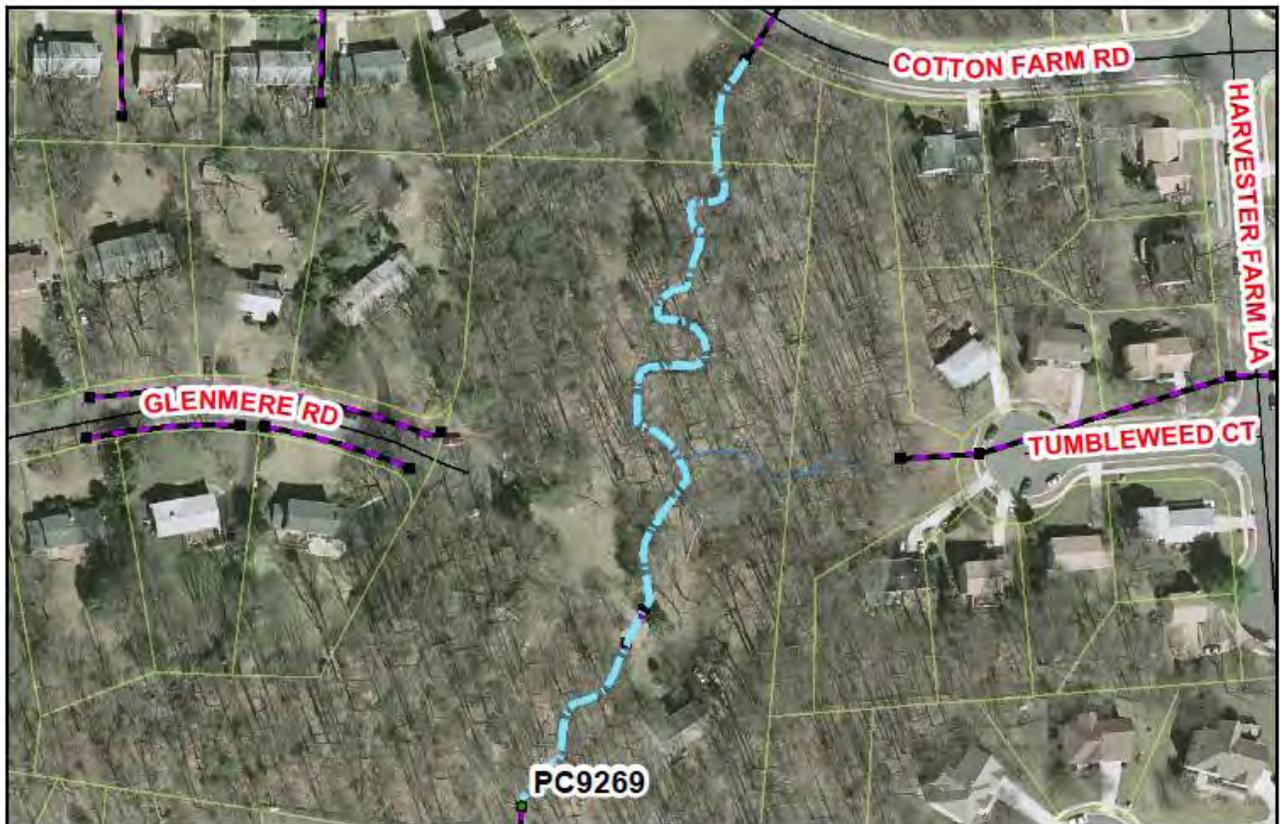
ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	1099	LF	\$200	\$219,800
Clear and Grub	1.26	AC	\$10,000	\$12,639
Plantings	1.26	AC	\$25,000	\$31,596
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$36,403
Ancillary Items	1	LS	5%	\$18,202
Base Construction Cost				\$418,640
Mobilization (5%)				\$20,932
Subtotal 1				\$439,572
Contingency (25%)				\$109,893
Subtotal 2				\$549,465
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$247,259
Total				\$796,724
Estimated Project Cost				\$800,000

PC9269 Stream Restoration



Address: Next to 10159 Red Spruce Drive, Fairfax, Virginia
Location: Stream near Red Spruce Drive
Land Owner: Private – Hickory Farms Community Association, Private Owner
PIN: 0691 08 D1, 0682 01 0012A
Control Type: Water quality control
Drainage Area: N/A
Receiving Waters: Tributary of Rabbit Branch

Description: The stream is east of Glenmere Road and south of Cotton Farm Road and outfalls into 0588DP. Due to poor channel morphology, this project proposes repairing bank and bed erosion. Stream stabilization will reduce sediment loads to the stream while maintaining the capacity of the channel and controlling unwanted meander of the stream.



- Stream Restoration
- Storm Network
- Property Line
- Streams

Project Benefits: Stabilizing this stream will reduce instream sediment and its associated pollutants. Below are the stream’s estimated instream sediment pollutant amounts that will be eliminated after the stream restoration.

TSS Removal (Tons/Yr)	TN Removal (Lbs/Yr)	TP Removal (Lbs/Yr)
11.32	18.11	7.02

Project Design Considerations: Stream starts in HOA open space near Cotton Farm Road, but then crosses a single family home lot. The stream bank should be stabilized to prevent further meander near Cotton Farm Road. Erosion will be stabilized through the use of bank shaping, toe of slope protection, erosion control fabrics, and rapid vegetation establishment. The stream flows through a private driveway culvert and discharges into a dry pond. The dry pond’s outfall structure is large with no water quality orifice (See photo). Modification to the structure should be investigated during stream restoration design to help increase baseflow and reduce erosion in the stream overall.

Cost:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Construct New Channel	872	LF	\$200	\$174,400
Clear and Grub	1.00	AC	\$10,000	\$10,028
Plantings	1.00	AC	\$25,000	\$25,070
Additional Cost, First 500 LF	500	LF	\$200	\$100,000
Erosion and Sediment Control	1	LS	10%	\$30,950
Ancillary Items	1	LS	5%	\$15,475
Base Construction Cost				\$355,923
Mobilization (5%)				\$17,796
Subtotal 1				\$373,719
Contingency (25%)				\$93,430
Subtotal 2				\$467,149
Engineering Design, Surveys, Land Acquisition, Utility Relocations and Permits (45%)				\$210,217
Total				\$677,365
Estimated Project Cost				\$680,000