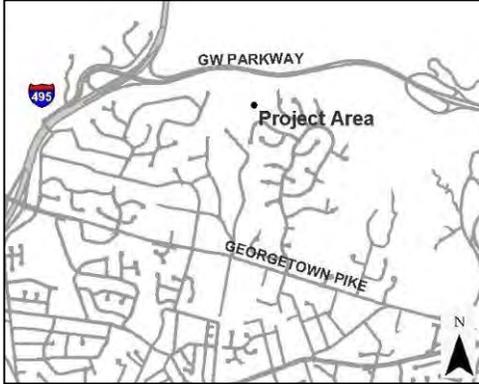


## Project: DE9102 BMP Retrofit Project



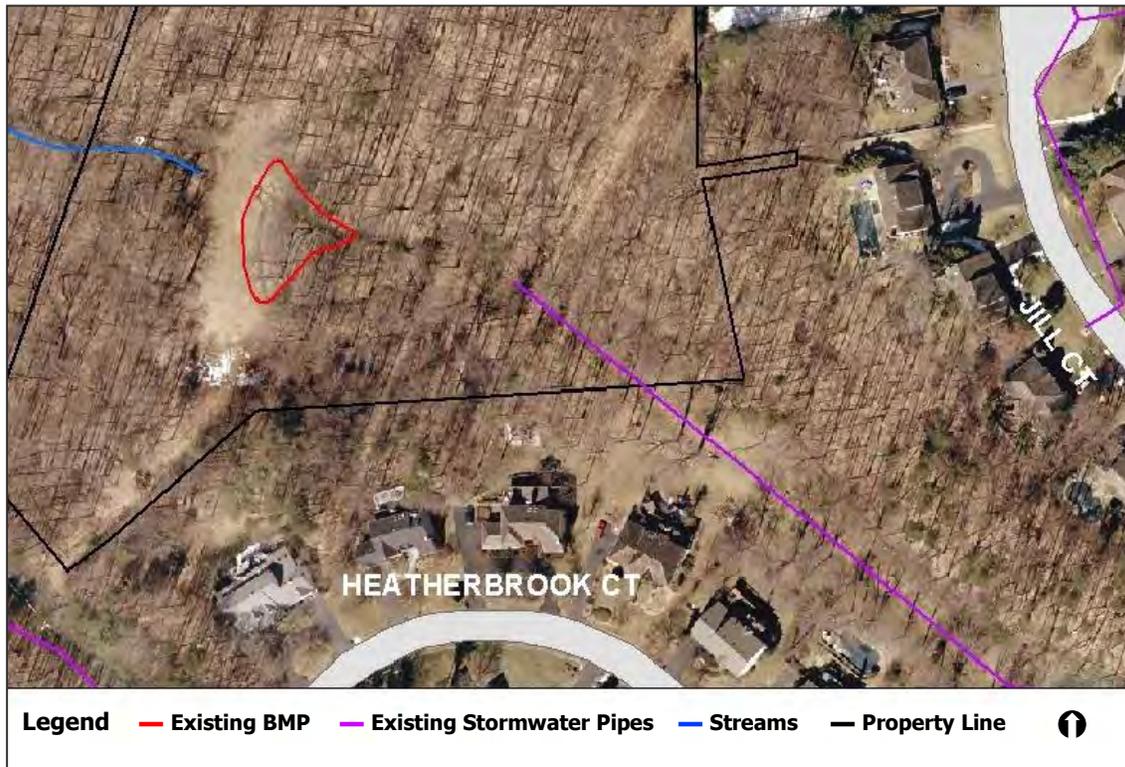
Vicinity Map

**Address:** West of 6617 Jill Court  
**Location:** Langley Oaks Neighborhood  
**Land Owner:** Langley Oaks HOA  
**PIN:** 0212 07 K  
**County Facility ID:** None  
**Control Type:** Water Quantity  
**Drainage Area:** 24.2 acres  
**Stream Name:** Dead Run

**Description:** The existing dry detention pond was designed to provide water quantity control only. Increase the storage volume of the pond by increasing the surface area. Retrofit the pond by modifying the outlet structure to detain the one-year storm event and adding a shallow wetland.

**Potential Benefits:** An estimated 12.1 lbs/yr of phosphorus will be removed and 0.4 acres of wetland habitat will be provided. All of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** There are minimal environmental permitting requirements for this project. The facility can be accessed from Jill Court and Heatherbrook Court. An easement will not be required. Impacts to trees will be minimized.



Project Area Map



Site Photo: Facing west towards the embankment.

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Structural BMP Retrofit and Incidentals	1	LS	\$11,000.00	\$11,000.00
Grading and Excavation	580	CY	\$35.00	\$20,300.00
Clear and Grub	0.1	AC	\$5,000.00	\$500.00
Shallow Wetland	300	SY	\$2.00	\$600.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
Landscaping	1	LS	\$2,000.00	\$2,000.00
			Base Construction Cost	\$37,400.00
			Mobilization (5%)	\$1,870.00
			<b>Subtotal 1</b>	\$39,270.00
			Contingency (25%)	\$9,817.50
			<b>Subtotal 2</b>	\$49,087.50
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$22,089.38
			<b>Estimated Project Cost</b>	<b>\$80,000.00</b>

## Project: DE9106 BMP Retrofit Project



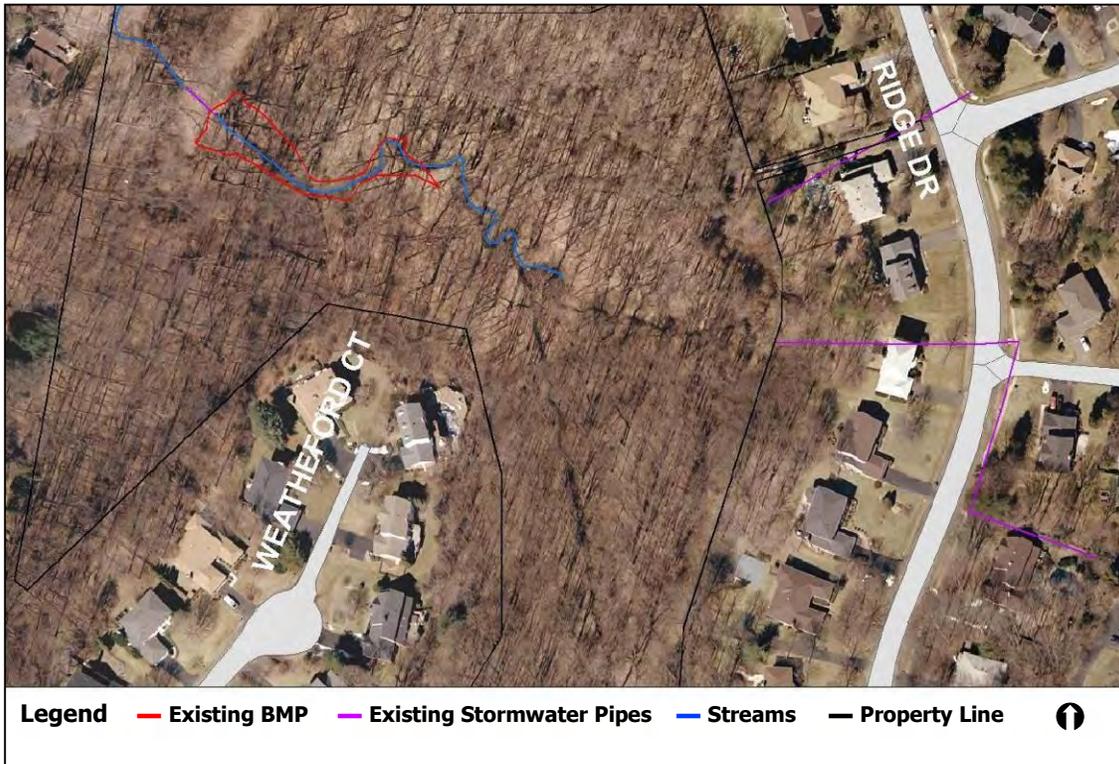
*Vicinity Map*

**Address:** West of 908 Ridge Drive  
**Location:** Langley Oaks Neighborhood  
**Land Owner:** Langley Oaks HOA  
**PIN:** 0214 18 C  
**County Facility ID:** 0066DP  
**Control Type:** Water Quantity  
**Drainage Area:** 30.2 acres  
**Stream Name:** Unnamed tributary to Dead Run

**Description:** The existing dry detention pond was designed to provide water quantity control only. The outlet structure will be modified to provide water quality treatment and to detain the one-year storm event.

**Potential Benefits:** An estimated 15.1 lbs/yr of phosphorus will be removed and all of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** Stream Restoration Project DE9204 is also along this stream reach. Coordination and sequencing of these projects should be considered. This project is in the Chesapeake Bay Resource Protection Area which has special permitting requirements. The facility can be accessed from Ridge Drive. An easement will not be required. Impacts to trees will be minimized.



*Project Area Map*



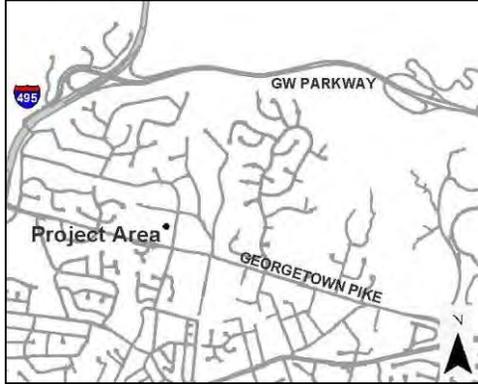
*Site Photo: Looking west towards the outlet of the facility.*

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Structural BMP Retrofit and Incidentals	1	LS	\$11,000.00	\$11,000.00
Landscaping	1	LS	\$2,000.00	\$2,000.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
			Base Construction Cost	\$16,000.00
			Mobilization (5%)	\$800.00
			<b>Subtotal 1</b>	\$16,800.00
			Contingency (25%)	\$4,200.00
			<b>Subtotal 2</b>	\$21,000.00
Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)				\$9,450.00
			<b>Estimated Project Cost</b>	<b>\$40,000.00</b>

**Project Status:** The embankment for this pond has been identified as needing repair under the county's Dam Safety Program. Project FX4000 - DE001 will address the repair and is currently in the design phase. Water quality elements may be added to the pond as part of the project.

## Project: DE9107 BMP Retrofit Project



*Vicinity Map*

**Address:** 926 and 930 Douglass Drive  
**Location:** Langley Forest Neighborhood  
**Land Owner:** Private Residential  
**PIN:** 0214 06 0040C and 0041B  
**County Facility ID:** None  
**Control Type:** Water Quality  
**Drainage Area:** 4.9 acres  
**Stream Name:** Unnamed tributary to Dead Run

**Description:** Retrofit the existing wet pond by modifying the outlet structure to detain the one-year storm event.

**Potential Benefits:** No additional phosphorus will be removed but all of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** Stream Restoration Project DE9244 is downstream of this facility. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. The facility can be accessed from Douglass Drive. An easement will be required. Impacts to trees will be minimized.



*Project Area Map*

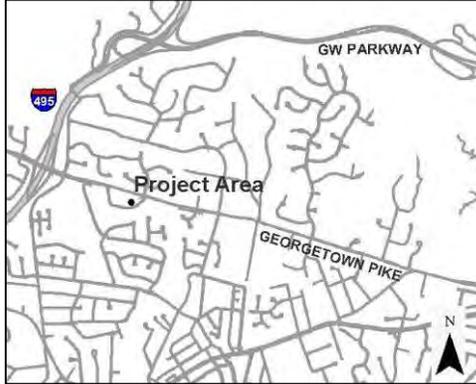


*Site Photo: Looking north towards the pond outlet*

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Structural BMP Retrofit and Incidentals	1	LS	\$6,000.00	\$6,000.00
Landscaping	1	LS	\$2,000.00	\$2,000.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
			Base Construction Cost	\$11,000.00
			Mobilization (5%)	\$550.00
			<b>Subtotal 1</b>	\$11,550.00
			Contingency (25%)	\$2,887.50
			<b>Subtotal 2</b>	\$14,437.50
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$6,496.88
			<b>Estimated Project Cost</b>	<b>\$30,000.00</b>

## Project: DE9109 BMP Retrofit Project



Vicinity Map

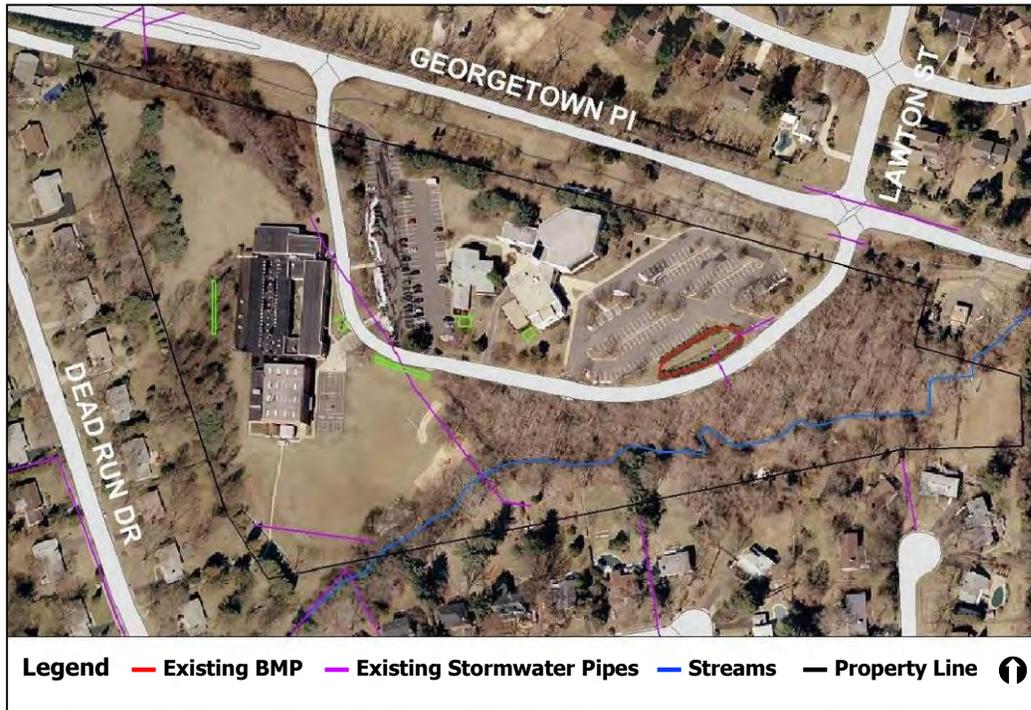
<b>Address:</b>	7001 Georgetown Pike
<b>Location:</b>	Saint Lukes Catholic Church
<b>Land Owner:</b>	Private Organization
<b>PIN:</b>	0214 01 0006
<b>County Facility ID:</b>	DP0122
<b>Control Type:</b>	Water Quantity
<b>Drainage Area:</b>	4.2 acres
<b>Stream Name:</b>	Unnamed tributary to Dead Run

**Description:** The dry detention pond was designed to provide water quantity control only. Retrofit the pond by modifying the outlet structure to detain a portion of the one-year storm event, adding a shallow wetland, and adding bioretention areas in grass areas near the church and school.

Also install two bioswales, one of which will replace a portion of a paved ditch.

**Potential Benefits:** An estimated 9.6 lbs/yr of phosphorus will be removed and 0.1 acres of wetland habitat will be provided. Approximately 87 percent of the runoff from the one-year storm event will be stored in the dry pond to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** Stream Restoration Project DE9244 is adjacent to this project. Coordination and sequencing of these projects should be considered. A portion of the dry pond is in a floodplain and the Chesapeake Bay Resource Protection Area which have special permitting requirements. The facility is accessible from Georgetown Pike. An easement will be required. Impacts to trees will be minimized.



Project Area Map



Site Photo: Potential bioretention area south of the school.

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Structural BMP Retrofit and Incidentals	1	LS	\$6,000.00	\$6,000.00
Grading and Excavation	460	CY	\$35.00	\$16,100.00
Bioretention	240	SY	\$250.00	\$60,000.00
Shallow Wetland	180	SY	\$2.00	\$360.00
Erosion and Sediment Control	1	LS	\$6,000.00	\$6,000.00
Landscaping	1	LS	\$2,000.00	\$2,000.00
			Base Construction Cost	\$90,460.00
			Mobilization (5%)	\$4,523.00
			<b>Subtotal 1</b>	<b>\$94,983.00</b>
			Contingency (25%)	\$23,745.75
			<b>Subtotal 2</b>	<b>\$118,728.75</b>
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$53,427.94
			<b>Estimated Project Cost</b>	<b>\$180,000.00</b>

## Project: DE9111 BMP Retrofit Project



Vicinity Map

**Address:** 6801 Georgetown Pike  
**Location:** Saint Johns Episcopal Church  
**Land Owner:** Private Organization  
**PIN:** 0214 01 0015  
**County Facility ID:** BR002 and BR003  
**Control Type:** Water Quantity  
**Drainage Area:** 2.0 acres  
**Stream Name:** Unnamed tributary to Dead Run

**Description:** The existing bioretention areas are not receiving runoff from the parking lots as designed. Retrofit the bioretention areas by redirecting the runoff from the parking lots and planting a 10 foot wide buffer vegetation strip around the three bioretention areas.

**Potential Benefits:** An estimated 1.9 lbs/yr of phosphorus will be removed and 0.1 acres of wetland habitat will be provided.

**Project Design Considerations:** There are minimal environmental permitting requirements for this project. The facility can be accessed from Douglass Drive. An easement will be required. Impacts to trees will be minimized.



Project Area Map



Site Photo: Bioretention facility at the northeast corner of the property.

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Grading and Excavation	120	CY	\$35.00	\$4,200.00
Buffer Vegetation	350	SY	\$2.00	\$700.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
Landscaping	1	LS	\$2,000.00	\$2,000.00
			Base Construction Cost	\$9,900.00
			Mobilization (5%)	\$495.00
			<b>Subtotal 1</b>	\$10,395.00
			Contingency (25%)	\$2,598.75
			<b>Subtotal 2</b>	\$12,993.75
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$5,847.19
			<b>Estimated Project Cost</b>	<b>\$20,000.00</b>

## Project: DE9112 New BMP Project



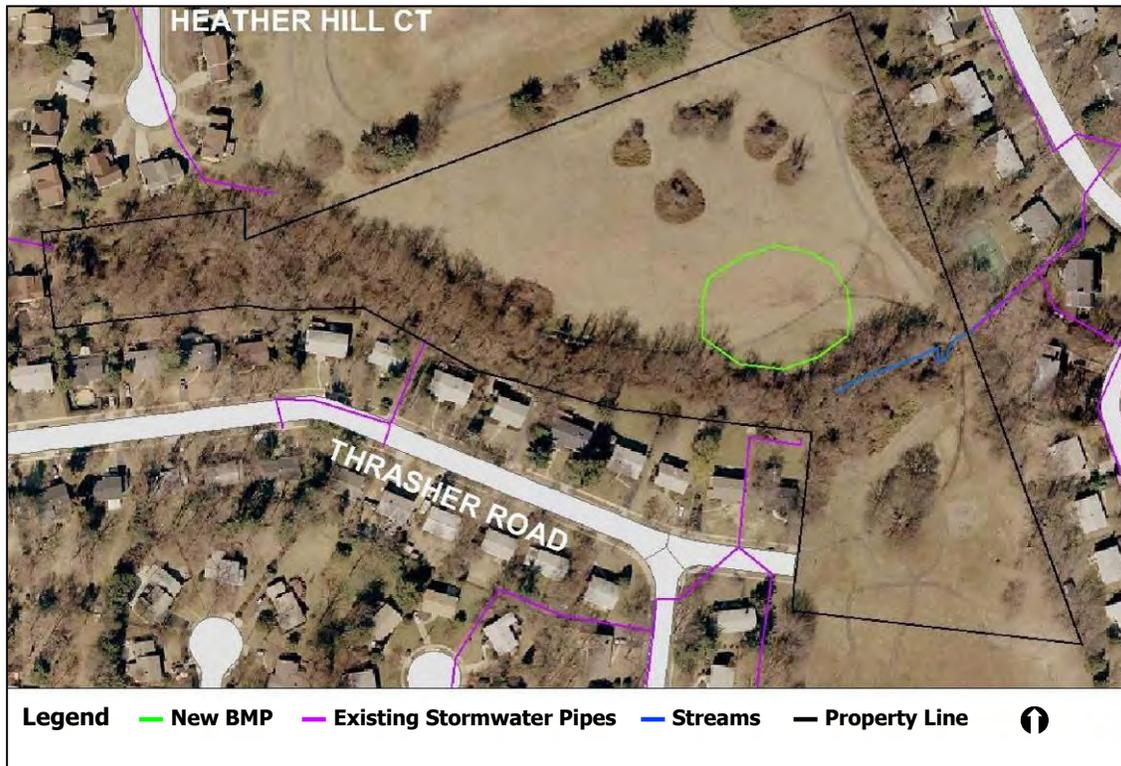
*Vicinity Map*

**Address:** 7098 Thrasher Place  
**Location:** Churchill Road Park  
**Land Owner:** Fairfax County Park Authority  
**PIN:** 0213 01 0067B  
**Drainage Area:** 21.8 acres  
**Stream Name:** Unnamed tributary to Dead Run

**Description:** There are no existing stormwater controls in this area. Construct a dry detention BMP that will provide water quantity control and water quality treatment.

**Potential Benefits:** An estimated 10.9 lbs/yr of phosphorus will be removed and all of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** Buffer Restoration Project DE9310 is adjacent to this site and Stream Restoration Project DE9244 is downstream of this site. Coordination and sequencing of these projects should be considered. A portion of this project site is in the Chesapeake Bay Resource Protection Area which has special permitting requirements. The site can be accessed from Thrasher Place. An easement will not be required. The BMP design should minimize tree removal.



*Project Area Map*

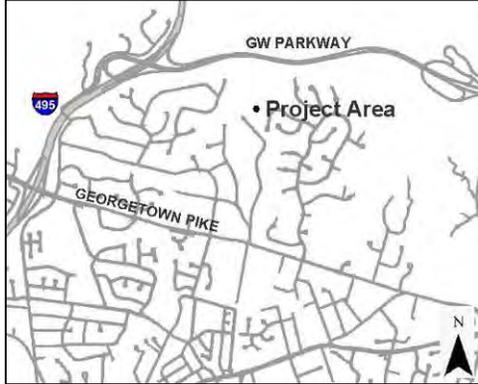


*Site Photo: In Churchill Road Park, facing southeast towards the stream.*

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Structural BMP and Incidentals	1	LS	\$15,000.00	\$15,000.00
New Storm Pipe	1	LS	\$15,000.00	\$15,000.00
Grading and Excavation	3,250	CY	\$35.00	\$113,750.00
Erosion and Sediment Control	1	LS	\$6,000.00	\$6,000.00
Landscaping	1	LS	\$6,000.00	\$6,000.00
		<b>Base Construction Cost</b>		\$155,750.00
		Mobilization (5%)		\$7,787.50
		<b>Subtotal 1</b>		\$163,537.50
		Contingency (25%)		\$40,884.38
		<b>Subtotal 2</b>		\$204,421.88
		Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)		\$91,989.84
		<b>Estimated Project Cost</b>		<b>\$300,000.00</b>

## Project: DE9115 BMP Retrofit Project



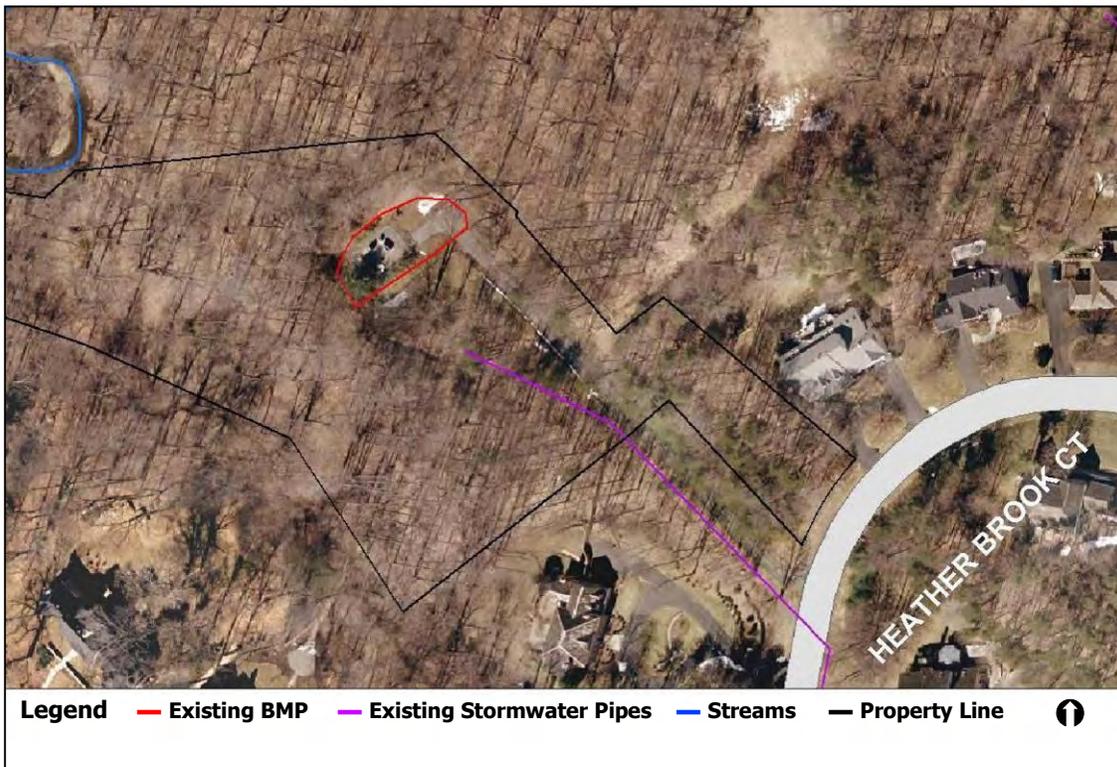
Vicinity Map

**Address:** 6526 Heatherbrook Court  
**Location:** Langley Oaks Neighborhood  
**Land Owner:** Fairfax County Board of Supervisors  
**PIN:** 0212 01 0012  
**County Facility ID:** 0110DP  
**Control Type:** Water Quantity  
**Drainage Area:** 4.1 acres  
**Stream Name:** Dead Run

**Description:** The existing dry detention pond was designed to provide water quantity control only. Retrofit the pond by modifying the outlet structure to detain the one-year storm event and adding a shallow wetland.

**Potential Benefits:** An estimated 2.0 lbs/yr of phosphorus will be removed and all of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** This pond is in the Chesapeake Bay Resource Protection Area which has special permitting requirements. The facility is accessible from Heatherbrook Court and no easement will be required. Impacts to trees will be minimized.

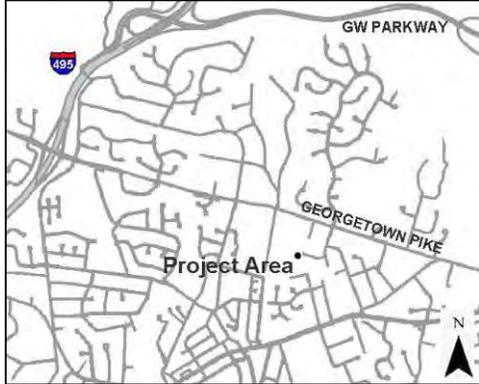


Project Area Map

**Costs:**

<b>ITEM</b>	<b>QUANTITY</b>	<b>UNITS</b>	<b>UNIT COST</b>	<b>TOTAL</b>
Structural BMP Retrofit and Incidentals	1	LS	\$6,000.00	\$6,000.00
Grading and Excavation	380	CY	\$35.00	\$13,300.00
Shallow Wetland	140	SY	\$2.00	\$280.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
Landscaping	1	LS	\$2,000.00	\$2,000.00
			Base Construction Cost	\$24,580.00
			Mobilization (5%)	\$1,229.00
			<b>Subtotal 1</b>	\$25,809.00
			Contingency (25%)	\$6,452.25
			<b>Subtotal 2</b>	\$32,261.25
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$14,517.56
			<b>Estimated Project Cost</b>	<b>\$50,000.00</b>

## Project: DE9116 New BMP Project



*Vicinity Map*

**Address:** 1005 Pine Hill Road  
**Location:** Near Malta Lane  
**Land Owner:** Private Residential  
**PIN:** 0214 01 0017  
**Drainage Area:** 37.9 acres  
**Stream Name:** Unnamed tributary to Dead Run

**Description:** There are no existing stormwater controls in this area. Construct a dry detention BMP that will provide water quantity control and water quantity treatment.

**Potential Benefits:** An estimated 19.0 lbs/yr of phosphorus will be removed and all of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** Stream Restoration Project DE9244 is downstream of this project site. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. The project site can be accessed from Pine Hill Road. An easement will be required. The BMP design should minimize tree removal.

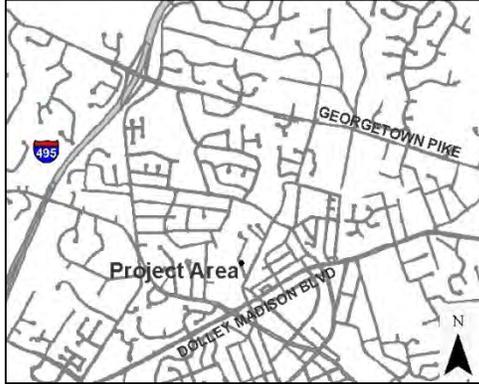


*Project Area Map*

**Costs:**

<b>ITEM</b>	<b>QUANTITY</b>	<b>UNITS</b>	<b>UNIT COST</b>	<b>TOTAL</b>
Structural BMP and Incidentals	1	LS	\$15,000	\$15,000
New Storm Pipe	1	LS	\$15,000	\$15,000
Clear and Grub	1	AC	\$5,000	\$5,000
Grading and Excavation	4,800	CY	\$35	\$168,000
Erosion and Sediment Control	1	LS	\$6,000	\$6,000
Landscaping	1	LS	\$6,000	\$6,000
		<b>Base Construction Cost</b>		\$215,000.00
		Mobilization (5%)		\$10,750.00
		<b>Subtotal 1</b>		\$225,750.00
		Contingency (25%)		\$56,437.50
		<b>Subtotal 2</b>		\$282,187.50
		Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)		\$281,728.13
		<b>Estimated Project Cost</b>		<b>\$410,000.00</b>

## Project: DE9120 BMP Retrofit Project



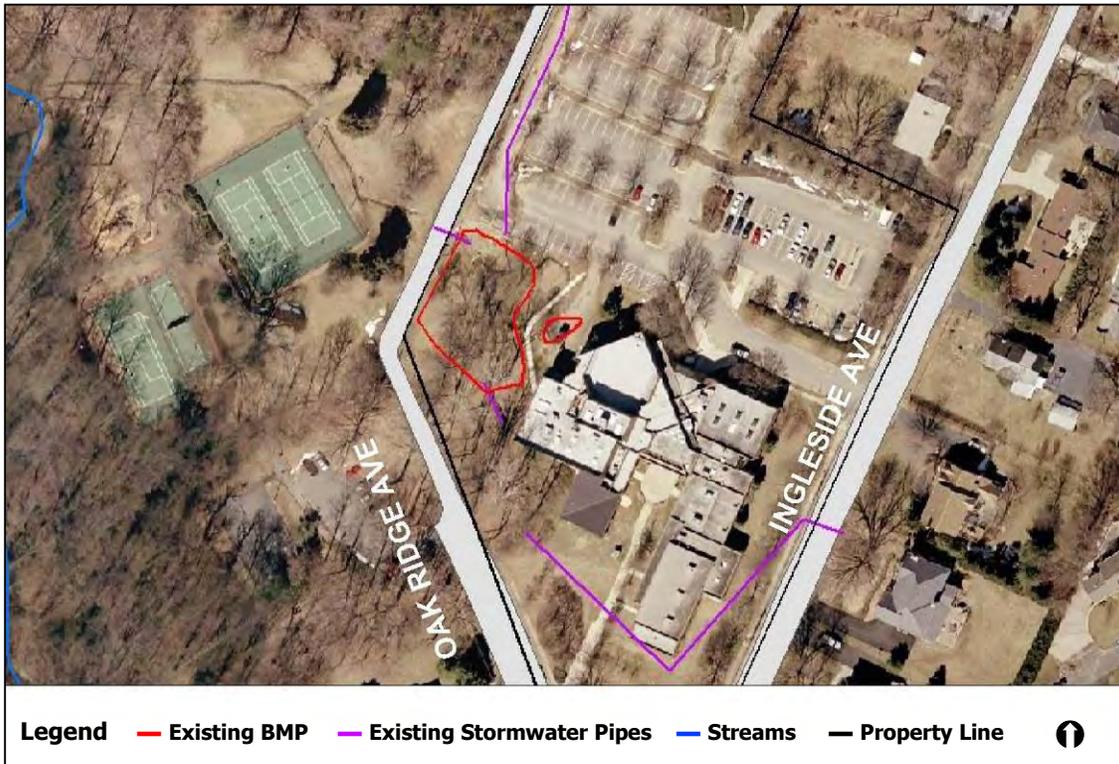
Vicinity Map

**Address:** 1235 Oak Ridge Avenue  
**Location:** McLean Community Center  
**Land Owner:** Fairfax County Board of Supervisors  
**PIN:** 0302 03 0034  
**County Facility ID:** 0339DP  
**Control Type:** Water Quantity  
**Drainage Area:** 14.7 acres  
**Stream Name:** Dead Run

**Description:** The existing dry detention pond was designed to provide water quantity control only. Retrofit the pond by modifying the outlet structure to detain a portion of the one-year storm event and adding a shallow wetland.

**Potential Benefits:** An estimated 9.6 lbs/yr of phosphorus will be removed and 0.1 acres of wetland habitat will be provided. Approximately 36 percent of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** New LID Projects DE9819 and DE9823 and Stream Restoration Project DE9244 are adjacent to this project. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. The facility can be accessed from Oak Ridge Avenue and no easement will be required. Impacts to trees will be minimized.



Project Area Map

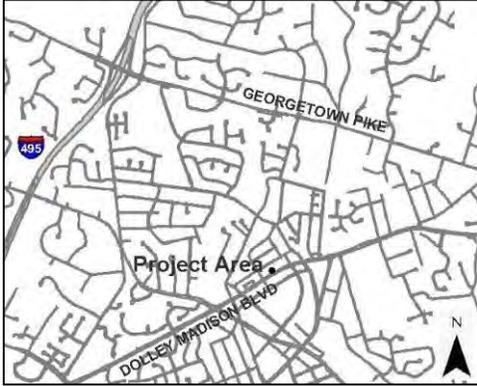


Site Photo: Facing south away from outlet structure

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Structural BMP Retrofit and Incidentals	1	LS	\$6,000.00	\$6,000.00
Grading and Excavation	700	CY	\$35.00	\$24,500.00
Shallow Wetland	275	SY	\$2.00	\$550.00
Landscaping	1	LS	\$2,000.00	\$2,000.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
			Base Construction Cost	\$36,050.00
			Mobilization (5%)	\$1,802.50
			<b>Subtotal 1</b>	<b>\$37,852.50</b>
			Contingency (25%)	\$9,463.13
			<b>Subtotal 2</b>	<b>\$47,315.63</b>
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$21,292.03
			<b>Estimated Project Cost</b>	<b>\$70,000.00</b>

## Project: DE9122 BMP Retrofit Project



Vicinity Map

**Address:** 6859 Chelsea Road  
**Location:** Beverly Manor Neighborhood  
**Land Owner:** Private Residential  
**PIN:** 0302 04 0001A and 001B  
**County Facility ID:** 0193DP  
**Control Type:** Water Quality  
**Drainage Area:** 8.4 acres  
**Stream Name:** Unnamed tributary to Dead Run

**Description:** Retrofit the dry detention BMP by modifying the outlet structure to detain a portion of the one-year storm event and expand the existing shallow wetland.

**Potential Benefits:** An estimated 3.9 lbs/yr of phosphorus will be removed and some wetland habitat will be provided. Approximately 92 percent of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** Stream Restoration Project DE9244 is downstream of this project. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. The facility can be accessed from Chelsea Road and an easement will not be required. Impacts to trees will be minimized.



Project Area Map

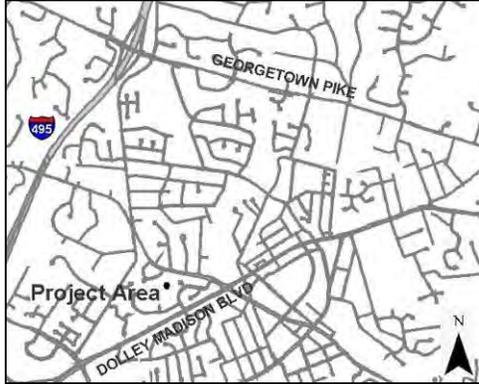


Site Photo: Near the outlet structure facing southeast towards Dolley Madison Boulevard

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Structural BMP Retrofit and Incidentals	1	LS	\$6,000.00	\$6,000.00
Grading and Excavation	450	CY	\$35.00	\$15,750.00
Shallow Wetland	175	SY	\$2.00	\$350.00
Landscaping	1	LS	\$2,000.00	\$2,000.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
			Base Construction Cost	\$27,100.00
			Mobilization (5%)	\$1,355.00
			<b>Subtotal 1</b>	<b>\$28,455.00</b>
			Contingency (25%)	\$7,113.75
			<b>Subtotal 2</b>	<b>\$35,568.75</b>
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$16,005.94
			<b>Estimated Project Cost</b>	<b>\$60,000.00</b>

## Project: DE9129 New BMP Project



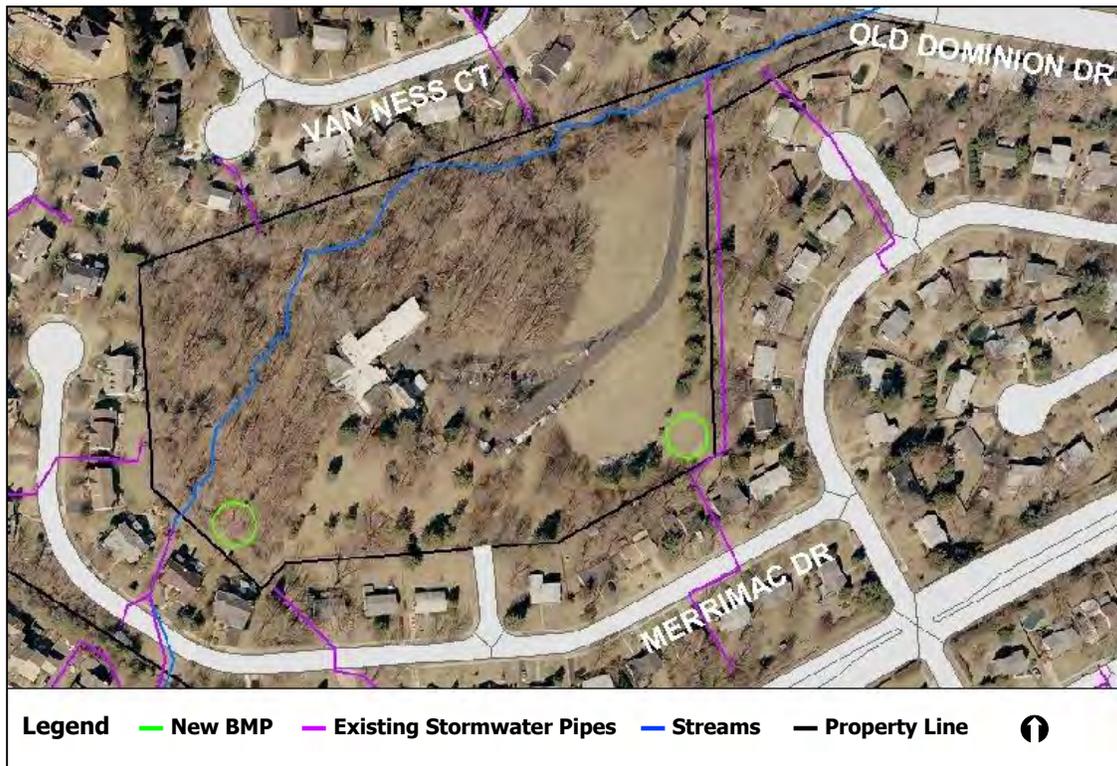
*Vicinity Map*

**Address:** 7103 Old Dominion Drive  
**Location:** Dominican Retreat House  
**Land Owner:** Private Organization  
**PIN:** 0301 01 0086  
**Drainage Area:** 10.8 acres  
**Stream Name:** Unnamed tributary to Dead Run

**Description:** There are no existing stormwater controls in this area. Construct two small dry detention BMPs that will provide water quantity control and water quality treatment.

**Potential Benefits:** An estimated 5.4 lbs/yr of phosphorus will be removed and approximately 74 percent of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** Stream Restoration Project DE9226 runs through this project site. Coordination and sequencing of these projects should be considered. A portion of this project site is in the Chesapeake Bay Resource Protection Area which has special permitting requirements. The project site can be accessed from Old Dominion Drive. An easement will be required. The BMP design should minimize tree removal.



*Project Area Map*

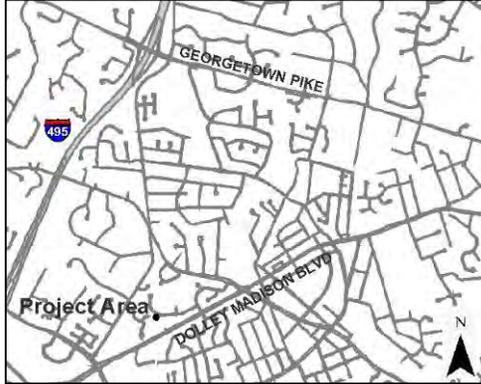


*Site Photo: At the Dominican Retreat House property facing northeast.*

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Structural BMP and Incidentals	1	LS	\$30,000.00	\$30,000.00
New Storm Pipe	1	LS	\$5,000.00	\$5,000.00
Grading and Excavation	550	CY	\$35.00	\$19,250.00
Erosion and Sediment Control	1	LS	\$6,000.00	\$6,000.00
Landscaping	1	LS	\$6,000.00	\$6,000.00
			Base Construction Cost	\$66,250.00
			Mobilization (5%)	\$3,312.50
			<b>Subtotal 1</b>	<b>\$69,562.50</b>
			Contingency (25%)	\$17,390.63
			<b>Subtotal 2</b>	<b>\$86,953.13</b>
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$39,128.91
			<b>Estimated Project Cost</b>	<b>\$130,000.00</b>

## Project: DE9130 BMP Retrofit Project



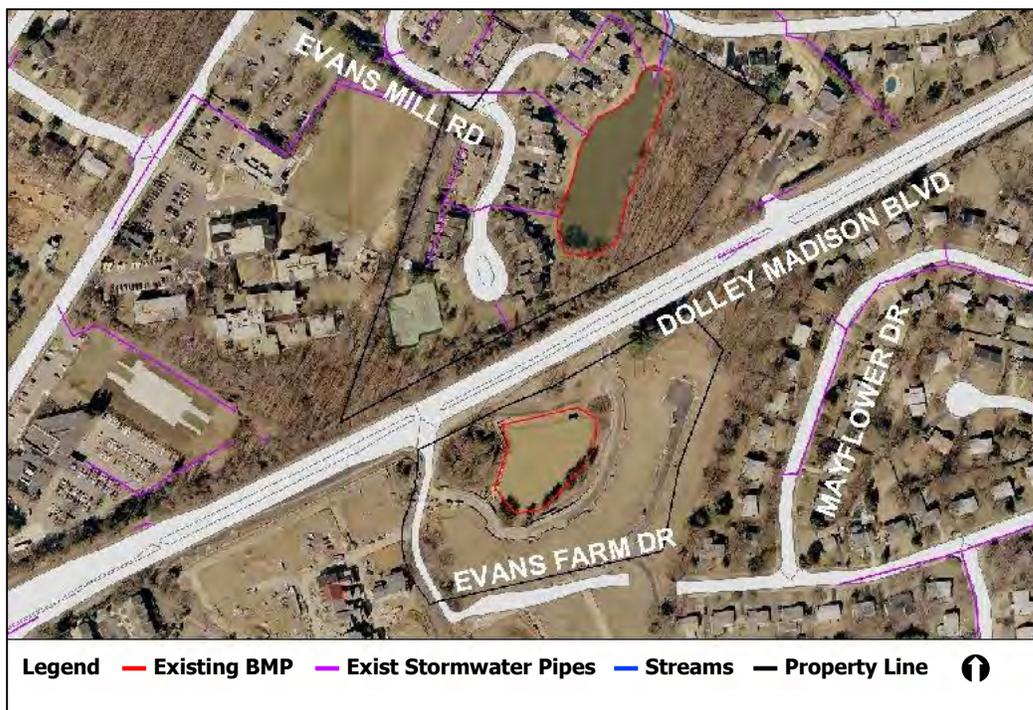
*Vicinity Map*

<b>Address:</b>	East of 7220 Evans Mill Road and north of 1461 Evans Farm Drive
<b>Location:</b>	Evans Mill Pond and Evans Farm Neighborhoods
<b>Land Owner:</b>	Evans Mill Pond HOA and Evans Farm HOA
<b>PIN:</b>	0301 24 D2 and 0301 01 0038
<b>County Facility ID:</b>	WP0078 and none
<b>Control Type:</b>	Water Quantity and Water Quality
<b>Drainage Area:</b>	46.2 acres
<b>Stream Name:</b>	Unnamed tributary to Dead Run

**Description:** The downstream wet pond was designed to provide water quantity control only. Retrofit by adding an aquatic bench, sediment forebays, modifying the outlet structure to detain the one-year storm event, and planting buffer vegetation. Retrofit the upstream pond by modifying the outlet structure to detain the one-year storm event.

**Potential Benefits:** An estimated 7.8 lbs/yr of phosphorus will be removed and 0.5 acres of wetland habitat will be provided. All of the runoff from the one-year storm event will be stored in each pond to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** Stream Restoration Project DE9244 and New BMP Project DE9129 are downstream of these facilities. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. The downstream facility can be accessed from Evans Mill Road and the upstream facility can be accessed from a private road east of Evans Farm Drive. Easements will be required. Impacts to trees will be minimized.



*Project Area Map*



*Site Photo: At the 7220 Evans Mill Road pond, looking south away from the outlet structure*



*Site Photo: At the 1461 Evans Farm Drive pond, looking northeast towards Evans Farm.*

**Costs:**

<b>ITEM</b>	<b>QUANTITY</b>	<b>UNITS</b>	<b>UNIT COST</b>	<b>TOTAL</b>
Structural BMP Retrofit and Incidentals	1	LS	\$22,000.00	\$22,000.00
Grading and Excavation	4,460	CY	\$35.00	\$156,100.00
Aquatic Bench/Buffer Vegetation	2,480	SY	\$2.00	\$4,960.00
Erosion and Sediment Control	1	LS	\$6,000.00	\$6,000.00
Landscaping	1	LS	\$4,000.00	\$4,000.00
		Base Construction Cost		\$193,060.00
		Mobilization (5%)		\$9,653.00
		<b>Subtotal 1</b>		\$202,713.00
		Contingency (25%)		\$50,678.25
		<b>Subtotal 2</b>		\$253,391.25
Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)				\$114,026.06
		<b>Estimated Project Cost</b>		<b>\$370,000.00</b>

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## Project: DE9132 New BMP Project



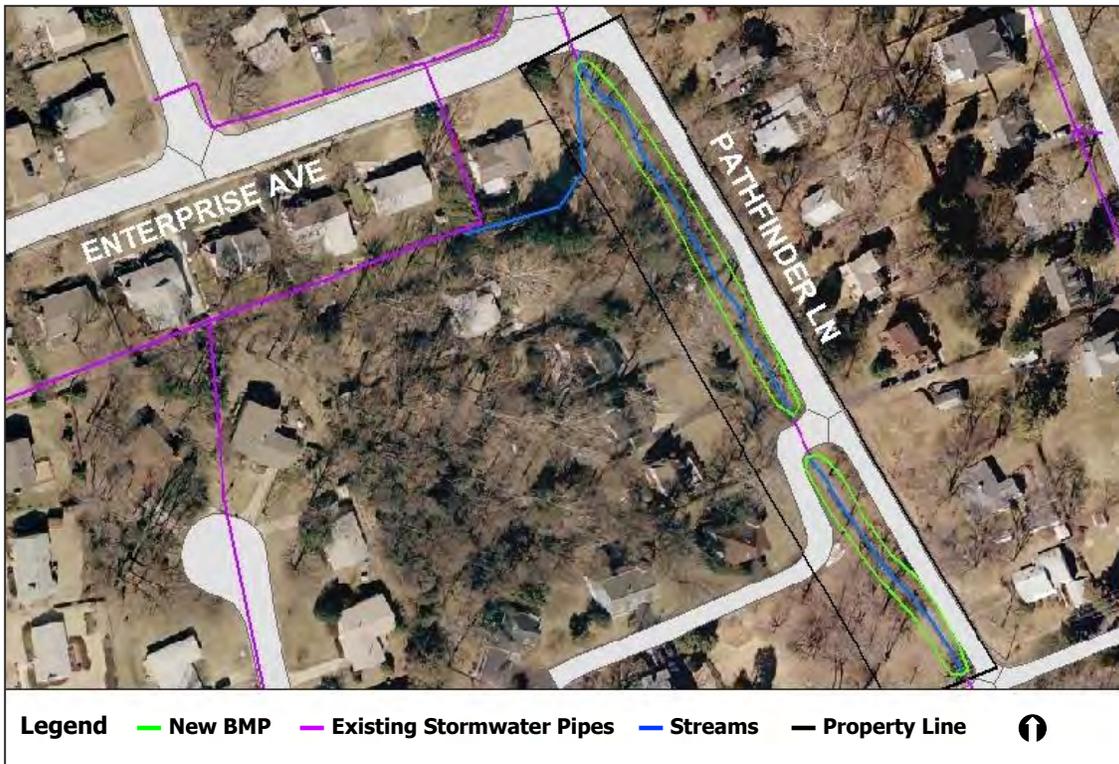
*Vicinity Map*

**Address:** South of 1417 Pathfinder Lane  
**Location:** Broyhill McLean Estates Neighborhood  
**Land Owner:** VA Department of Transportation  
**Tax Map:** 30-2  
**Drainage Area:** 20.8 acres  
**Stream Name:** Dead Run

**Description:** There are no existing stormwater controls in this area. Construct two small dry detention BMPs that will provide water quantity control and water quality treatment.

**Potential Benefits:** An estimated 10.4 lbs/yr of phosphorus will be removed and approximately 77 percent of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** Neighborhood Stormwater Improvement Area DE9836 is also in this neighborhood and Stream Restoration Project DE9226 is immediately downstream of this project site. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. The project site can be accessed from Pathfinder Lane. An easement will not be required. The BMP design should minimize tree removal.



*Project Area Map*



*Site Photo: At Enterprise Avenue, facing south towards the proposed project site.*

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Structural BMP and Incidentals	1	LS	\$30,000.00	\$30,000.00
New Storm Pipe	1	LS	\$5,000.00	\$5,000.00
Clear and Grub	0.25	AC	\$5,000.00	\$1,250.00
Grading and Excavation	1,050	CY	\$35.00	\$36,750.00
Erosion and Sediment Control	1	LS	\$6,000.00	\$6,000.00
Landscaping	1	LS	\$6,000.00	\$6,000.00
			Base Construction Cost	\$85,000.00
			Mobilization (5%)	\$4,250.00
			<b>Subtotal 1</b>	\$89,250.00
			Contingency (25%)	\$22,312.50
			<b>Subtotal 2</b>	\$111,562.50
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$50,203.13
			<b>Estimated Project Cost</b>	<b>\$170,000.00</b>

## Project: DE9135 BMP Retrofit Project



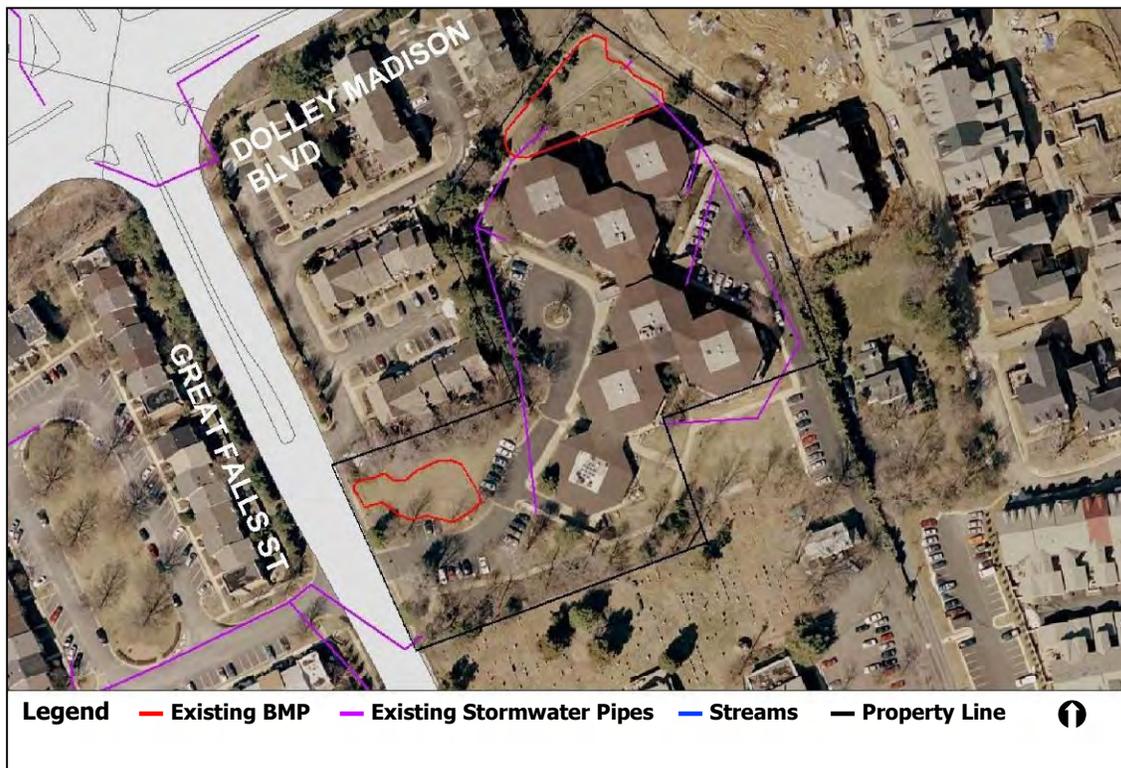
*Vicinity Map*

<b>Address:</b>	1515 Great Falls Street
<b>Location:</b>	Lewinsville Retirement Residence
<b>Land Owner:</b>	Residential Development
<b>PIN:</b>	0303 01 0062
<b>County Facility ID:</b>	DP0298
<b>Control Type:</b>	Water Quantity
<b>Drainage Area:</b>	7.8 acres
<b>Stream Name:</b>	Unnamed tributary to Dead Run

**Description:** The existing dry detention pond at the north side of the site was designed to provide water quantity control only. Modify the dry pond by removing the concrete ditch and constructing a shallow wetland with a meandering channel. Also remove some of the planters and modify the outlet structure to detain a portion of the one-year storm event.

**Potential Benefits:** An estimated 5.2 lbs/yr of phosphorus will be removed and all of the runoff from the one-year storm event will be stored to control the peak flow and help reduce erosion in the downstream channel.

**Project Design Considerations:** BMP Retrofit Project DE9130, New BMP Project DE9129, and Stream Restoration Project DE9244 are all downstream of this project. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. The facility can be accessed from Great Falls Street. An easement will be required. Impacts to trees will be minimized.



*Project Area Map*

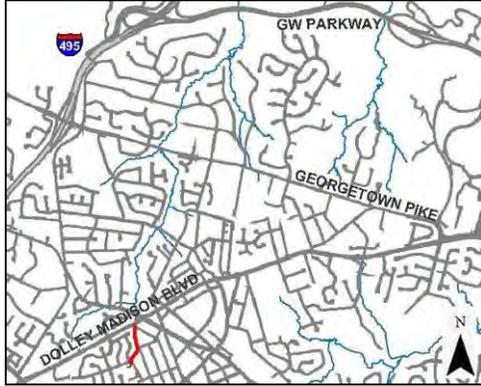


Site Photo: Looking northeast towards the outlet structure

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Structural BMP Retrofit and Incidentals	1	LS	\$6,000.00	\$6,000.00
Demolish Existing Pavement	110	SY	\$8.00	\$880.00
Grading and Excavation	230	CY	\$35.00	\$8,050.00
Shallow Wetland	370	SY	\$2.00	\$740.00
Landscaping	1	LS	\$2,000.00	\$2,000.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
			Base Construction Cost	\$20,670.00
			Mobilization (5%)	\$1,033.50
			<b>Subtotal 1</b>	\$21,703.50
			Contingency (25%)	\$5,425.88
			<b>Subtotal 2</b>	\$27,129.38
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$12,208.22
			<b>Estimated Project Cost</b>	<b>\$40,000.00</b>

## Project: DE9226 Stream Restoration Project



Vicinity Map

<b>Location:</b>	Broyhill McLean Estates Neighborhood
<b>Land Owner:</b>	VA Department of Transportation and Private Residential
<b>Tax Map:</b>	30-2
<b>Potential Length:</b>	1,200 linear feet
<b>Stream Name:</b>	Dead Run

**Description:** Evaluate a portion Dead Run to determine where stream restoration is necessary. The stream location to be assessed is located between Pathfinder Lane and Dolley Madison Boulevard. Proposed activities include removing gabions lining the stream, adding in-stream structures, riparian vegetation planting, and channel bed and bank

reconfiguration.

**Potential Benefits:** Provide habitat, filters pollutants, and minimizes erosion of stream banks.

**Project Design Considerations:** Neighborhood Stormwater Improvement Area DE9836 is also in this neighborhood and New BMP Project DE9132 is immediately upstream of this project site. Coordination and sequencing of these projects should be considered. The entire project length is in the Chesapeake Bay Resource Protection Area which has special permitting requirements. The project may require some clearing of trees and have impacts to jurisdictional wetlands. Easements will be required.



Project Area Map

**Costs:**

<b>ITEM</b>	<b>QUANTITY</b>	<b>UNITS</b>	<b>UNIT COST</b>	<b>TOTAL</b>
Reconstruct New Pattern and Profile	700	LF	\$250.00	\$175,000.00
First 500 Linear Feet	500	LF	\$450.00	\$225,000.00
			Base Construction Cost	\$400,000.00
			Mobilization (5%)	\$20,000.00
			<b>Subtotal 1</b>	<b>\$420,000.00</b>
			Contingency (25%)	\$105,000.00
			<b>Subtotal 2</b>	<b>\$525,000.00</b>
Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)				\$236,250.00
			<b>Estimated Project Cost</b>	<b>\$770,000.00</b>

## Project: DE9303 Buffer Restoration Project



*Vicinity Map*

**Location:** Langley Forest Neighborhood  
**Land Owner:** Private Residential  
**Tax Map:** 21-2 and 21-4  
**Potential Length:** 1,900 linear feet  
**Stream Name:** Dead Run

**Description:** Evaluate the buffer vegetation adjacent to Dead Run starting at on the north side of Benjamin Street and ending downstream of Hampshire Road.

**Potential Benefits:** Provide habitat, filters pollutants, and minimizes erosion of stream banks.

**Project Design Considerations:** This project is in a floodplain and the Chesapeake Bay Resource Protection

Area which have special permitting requirements. This project may also require some clearing of trees and have impacts to jurisdictional wetlands. Easements will be required.



*Project Area Map*

**Costs:**

<b>ITEM</b>	<b>QUANTITY</b>	<b>UNITS</b>	<b>UNIT COST</b>	<b>TOTAL</b>
Buffer Restoration	1,900	LF	\$25.00	\$47,500.00
			<b>Base Construction Cost</b>	\$47,500.00
			Mobilization (5%)	\$2,375.00
			<b>Subtotal 1</b>	\$49,875.00
			Contingency (25%)	\$12,468.75
			<b>Subtotal 2</b>	\$62,343.75
Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)				\$28,054.69
			<b>Estimated Project Cost</b>	<b>\$100,000.00</b>

## Project: DE9310 Buffer Restoration Project



*Vicinity Map*

<b>Location:</b>	Churchill Road Park
<b>Land Owner:</b>	Fairfax County Park Authority and Private Residential
<b>Tax Map:</b>	21-3
<b>Potential Length:</b>	1,200 linear feet
<b>Stream Name:</b>	Unnamed tributary to Dead Run

**Description:** Evaluate the buffer vegetation adjacent to a tributary to Dead Run that is located in Churchill Road Park.

**Potential Benefits:** Provide habitat, filters pollutants, and minimizes erosion of stream banks.

**Project Design Considerations:** New BMP Project DE9112 is adjacent to this project. Coordination and sequencing of these projects should be considered. This project is in the Chesapeake Bay Resource Protection Area which has special permitting requirements. This project may require some clearing of trees and have impacts to jurisdictional wetlands. Easements will be required.

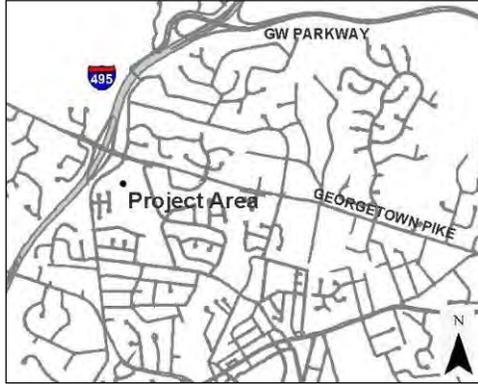


*Project Area Map*

**Costs:**

<b>ITEM</b>	<b>QUANTITY</b>	<b>UNITS</b>	<b>UNIT COST</b>	<b>TOTAL</b>
Buffer Restoration	1,200	LF	\$25.00	\$30,000.00
			<b>Base Construction Cost</b>	\$30,000.00
			Mobilization (5%)	\$1,500.00
			<b>Subtotal 1</b>	\$31,500.00
			Contingency (25%)	\$7,875.00
			<b>Subtotal 2</b>	\$39,375.00
Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)				\$17,718.75
			<b>Estimated Project Cost</b>	<b>\$60,000.00</b>

## Project: DE9813 New LID Project



*Vicinity Map*

**Address:** 977 Balls Hill Road  
**Location:** Cooper Middle School  
**Land Owner:** Fairfax County Public Schools  
**PIN:** 0213 01 0066A  
**Drainage Area:** 3.8 acres  
**Stream Name:** Unnamed tributary to Dead Run

**Description:** The school does not have any existing stormwater controls. Construct bioretention areas in the grass areas around the school and replace one curb drop inlet with a tree box filter in the parking lot.

**Potential Benefits:** An estimated 3.5 lbs/yr of phosphorus will be removed. This project will also provide stormwater runoff flow reduction for small storm events.

**Project Design Considerations:** Stream Restoration Project DE9204, Buffer Restoration Project DE9310 and New BMP Project DE9112 are downstream of this site. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. The project site can be accessed from Balls Hill Road. An easement will not be required. There are no significant construction issues found on this site. Impacts to trees will be minimized.



*Project Area Map: Conceptual plan showing potential locations of LID measures*



*Site Photo: Looking north at the school.*

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Bioretention	360	SY	\$250.00	\$90,000.00
Tree Box Filters	1	EA	\$5,000.00	\$5,000.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
			Base Construction Cost	\$98,000.00
			Mobilization (5%)	\$4,900.00
			<b>Subtotal 1</b>	\$102,900.00
			Contingency (25%)	\$25,725.00
			<b>Subtotal 2</b>	\$128,625.00
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$57,881.25
			<b>Estimated Project Cost</b>	<b>\$190,000.00</b>

## Project: DE9814 New LID Project



*Vicinity Map*

**Address:** 7100 Churchill Road  
**Location:** Churchill Road Elementary School  
**Land Owner:** Fairfax County Public Schools  
**PIN:** 0213 01 0067A  
**Drainage Area:** 2.1 acres  
**Stream Name:** Unnamed tributary to Dead Run

**Description:** The school does not have any existing stormwater controls. Construct bioretention areas in the grass areas around the school and a bioswale next to the east parking lot.

**Potential Benefits:** An estimated 2.0 lbs/yr of phosphorus will be removed. This project will also provide stormwater runoff flow reduction for small storm events.

**Project Design Considerations:** Neighborhood Stormwater Improvement Area DE9824 is upstream of this site and Stream Restoration Project DE9244 and Buffer Restoration Project DE9310 are downstream of this site. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. The project site can be accessed from Churchill Road. An easement will not be required. There are no significant construction issues found on this site. Impacts to trees will be minimized.



*Project Area Map: Conceptual plan showing potential locations of LID measures*

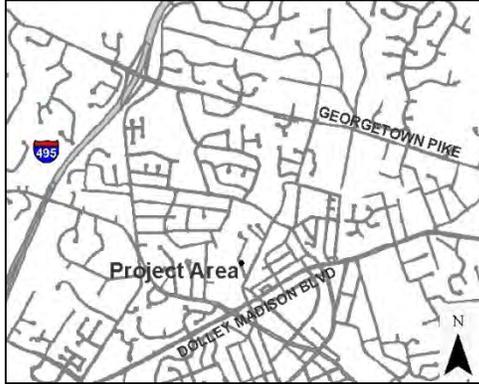


*Site Photo: Looking southeast at the back of the school.*

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Bioretention	220	SY	\$250.00	\$55,000.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
			Base Construction Cost	\$58,000.00
			Mobilization (5%)	\$2,900.00
			<b>Subtotal 1</b>	\$60,900.00
			Contingency (25%)	\$15,225.00
			<b>Subtotal 2</b>	\$76,125.00
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$34,256.25
			<b>Estimated Project Cost</b>	<b>\$120,000.00</b>

## Project: DE9819 New LID Project



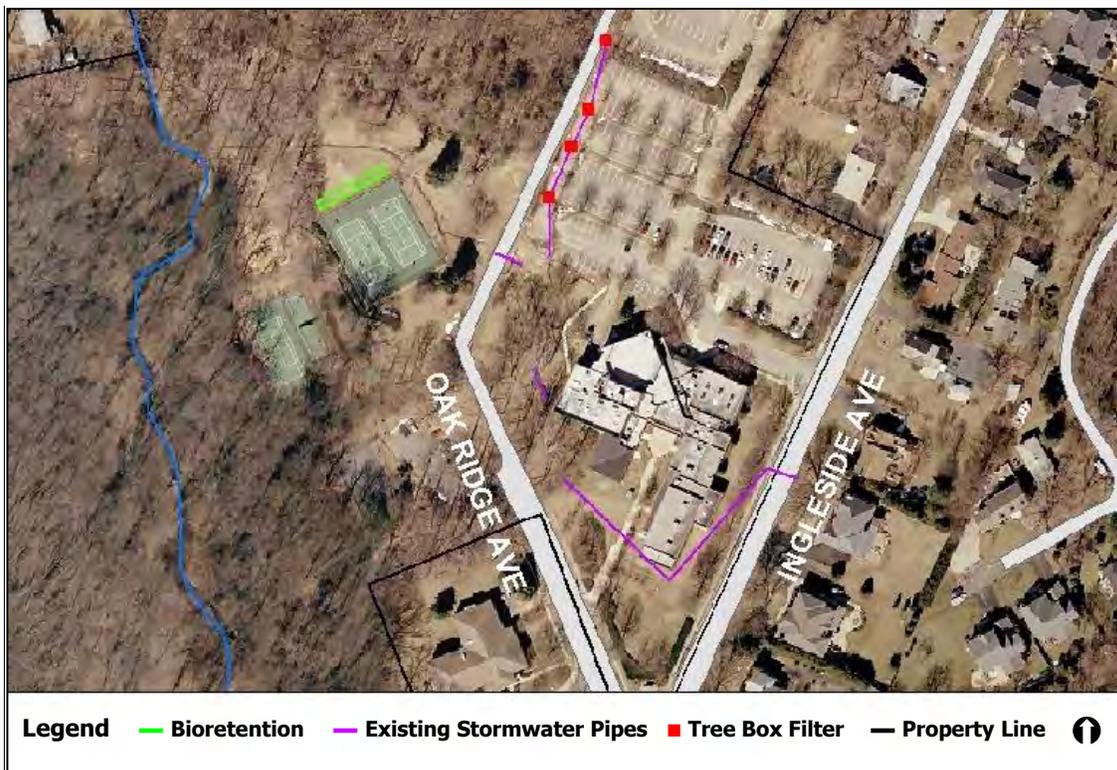
*Vicinity Map*

**Address:** 1235 Oak Ridge Avenue  
**Location:** McLean Community Center and McLean Central Park  
**Land Owner:** Fairfax County Park Authority and Fairfax County Board of Supervisors  
**PIN:** 0302 03 0021 and 0032A  
**Drainage Area:** 1.0 acres  
**Stream Name:** Dead Run

**Description:** The site has an existing stormwater control facility. Construct bioretention areas in the grass areas around the community center and replace four curb drop inlets with tree box filters in the parking lot.

**Potential Benefits:** An estimated 0.9 lbs/yr of phosphorus will be removed. This project will also provide stormwater runoff flow reduction for small storm events.

**Project Design Considerations:** BMP Retrofit Project DE9120 is also at this site and Stream Restoration Project DE9244 is adjacent to this site. Coordination and sequencing of these projects should be considered. A portion of the project site is in the Chesapeake Bay Resource Protection Area which has special permit requirements. The project site can be accessed from Oak Ridge Avenue and Ingleside Avenue. An easement will not be required. There are no significant construction issues found on this site. Impacts to trees will be minimized.



*Project Area Map: Conceptual plan showing potential locations of LID measures*



*Site Photo: Facing northeast in the main parking lot of the community center*

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Bioretention	100	SY	\$250.00	\$25,000.00
Tree Box Filters	4	EA	\$5,000.00	\$20,000.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
			Base Construction Cost	\$48,000.00
			Mobilization (5%)	\$2,400.00
			<b>Subtotal 1</b>	<b>\$50,400.00</b>
			Contingency (25%)	\$12,600.00
			<b>Subtotal 2</b>	<b>\$63,000.00</b>
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$28,350.00
			<b>Estimated Project Cost</b>	<b>\$100,000.00</b>

## Project: DE9821 Neighborhood Stormwater Improvement Area



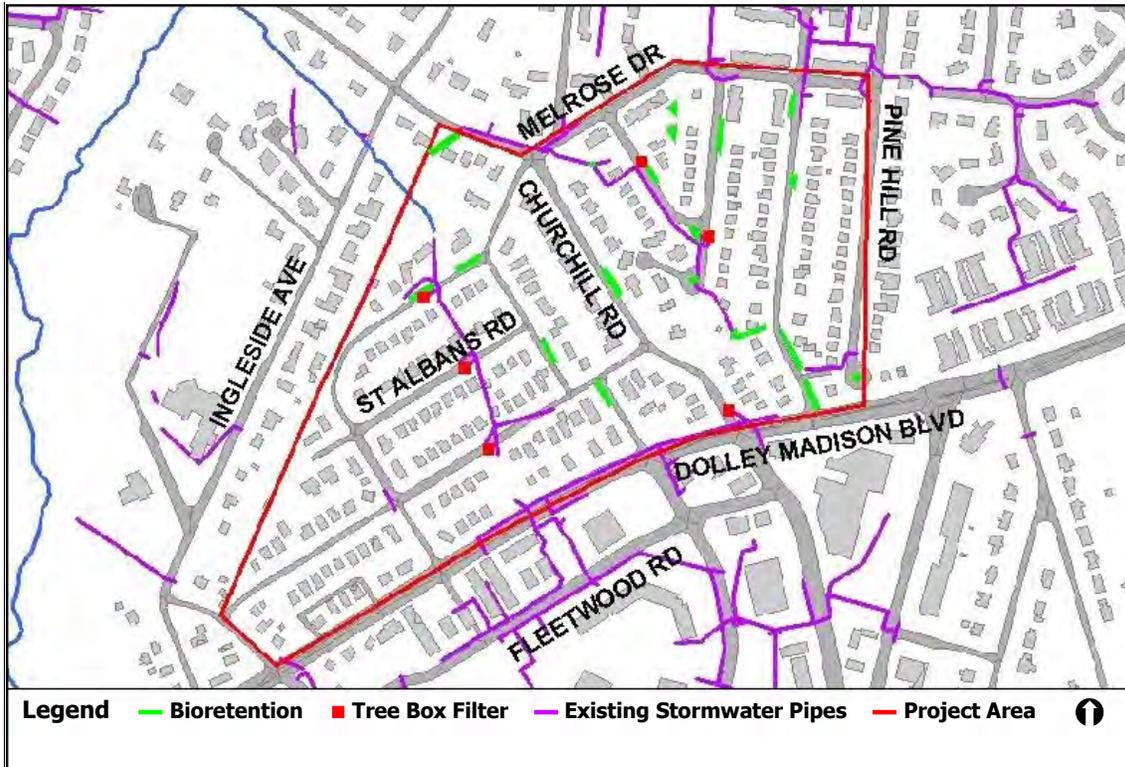
Vicinity Map

<b>Location:</b>	Kings Manor and Beverly Manor Neighborhoods
<b>Land Owner:</b>	Private Residential and VA Department of Transportation
<b>Tax Map:</b>	30-2
<b>Drainage Area:</b>	11.9 acres
<b>Stream Name:</b>	Unnamed tributary to Dead Run

**Description:** Beverly Manor has an existing stormwater pond that controls a portion of the neighborhood. Kings Manor has no existing stormwater controls. Construct bioretention areas and bioswales in the grass right of way areas around the neighborhoods, and replace curb drop inlets with tree box filters.

**Potential Benefits:** An estimated 11.1 lbs/yr of phosphorus will be removed. This project will also provide stormwater runoff flow reduction for small storm events.

**Project Design Considerations:** BMP Retrofit Project DE9122 is also in Beverly Manor and Stream Restoration Project DE9244 is downstream of this project. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. Easements will not be required. Impacts to trees will be minimized.



Project Area Map: Conceptual plan showing potential locations of LID measures

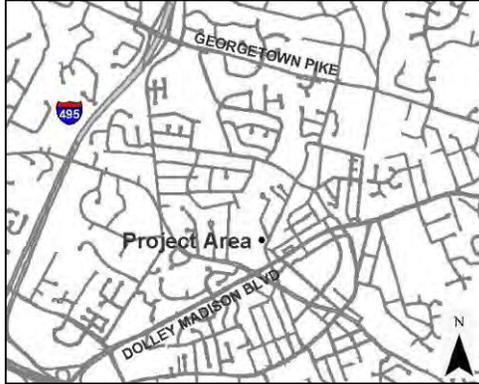


*Site Photo: Roadside ditch in the Beverly Manor Neighborhood*

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Tree Box Filters	6	EA	\$5,000.00	\$30,000.00
Bioretention	1,070	SY	\$250.00	\$267,500.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
			Base Construction Cost	\$300,500.00
			Mobilization (5%)	\$15,025.00
			<b>Subtotal 1</b>	\$315,525.00
			Contingency (25%)	\$78,881.25
			<b>Subtotal 2</b>	\$394,406.25
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$177,482.81
			<b>Estimated Project Cost</b>	<b>\$580,000.00</b>

## Project: DE9823 New LID Project



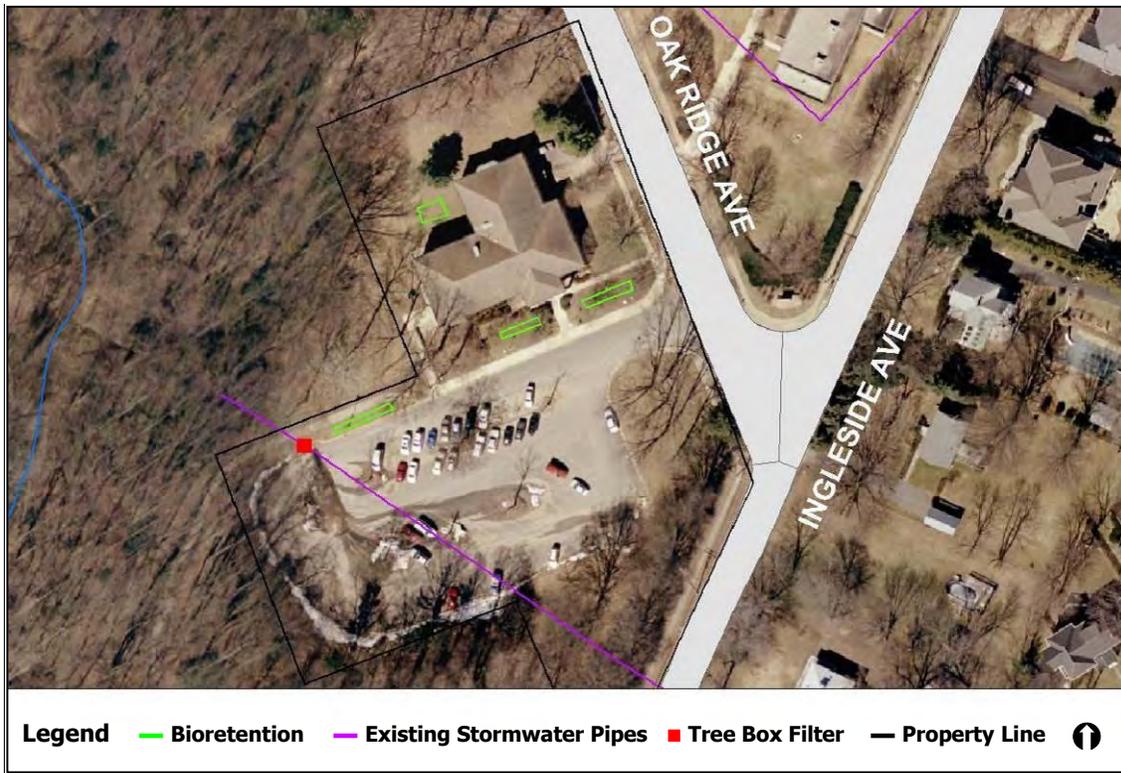
*Vicinity Map*

**Address:** 1244 Oak Ridge Avenue  
**Location:** Dolley Madison Library  
**Land Owner:** Fairfax County Board of Supervisors and Fairfax County Park Authority  
**PIN:** 0302 01 0003 and 0302 03 0024  
**Drainage Area:** 1.1 acres  
**Stream Name:** Dead Run

**Description:** The site does not have any existing stormwater controls. Construct bioretention areas in the grass areas around the library, construct a bioswale, and replace one curb drop inlet with a tree box filter in the parking lot.

**Potential Benefits:** An estimated 1.0 lb/yr of phosphorus will be removed. This project will also provide stormwater runoff flow reduction for small storm events.

**Project Design Considerations:** New LID Project DE9819, BMP Retrofit Project DE9120, and Stream Restoration Project DE9244 are all adjacent to this site. Coordination and sequencing of these projects should be considered. There are minimal environmental permitting requirements for this project. The project site can be accessed from Oak Ridge Avenue. An easement will not be required. There are no significant construction issues found on this site. Impacts to trees will be minimized.



*Project Area Map: Conceptual plan showing potential locations of LID measures*

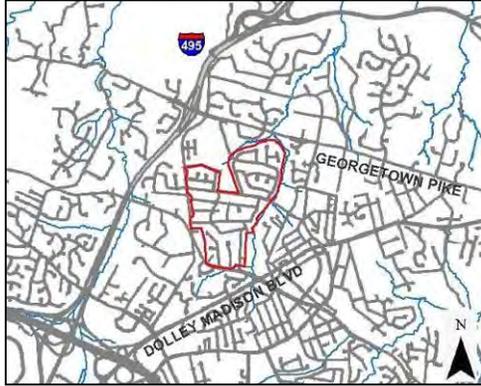


*Site Photo: In the parking lot looking northeast towards the library.*

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Tree Box Filters	1	EA	\$5,000.00	\$5,000.00
Bioretention	85	SY	\$250.00	\$21,250.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
		Base Construction Cost		\$29,250.00
		Mobilization (5%)		\$1,462.50
		<b>Subtotal 1</b>		\$30,712.50
		Contingency (25%)		\$7,678.13
		<b>Subtotal 2</b>		\$38,390.63
		Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)		\$17,275.78
		<b>Estimated Project Cost</b>		<b>\$60,000.00</b>

## Project: DE9824 Neighborhood Stormwater Improvement Area



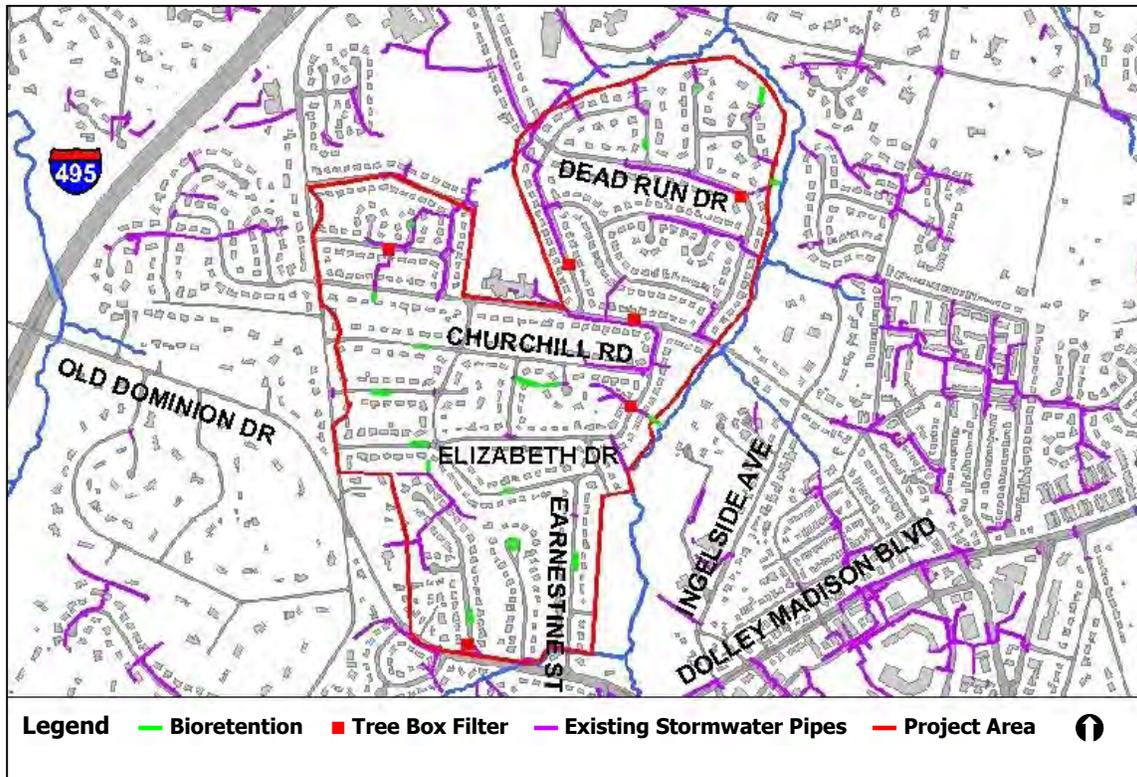
Vicinity Map

<b>Location:</b>	Ingleside, Old Dominion Gardens, Langley Manor, and Broyhill-Langley Estates Neighborhoods
<b>Land Owner:</b>	Private Residential and VA Department of Transportation
<b>Tax Map:</b>	21-3, 21-4, 30-1, and 30-2
<b>Drainage Area:</b>	15.3 acres
<b>Stream Name:</b>	Dead Run

**Description:** None of the neighborhoods have any existing stormwater controls. Construct bioretention areas in the grass right of way areas around the neighborhoods, construct bioswales, and replace six curb drop inlets with tree box filters.

**Potential Benefits:** An estimated 14.2 lbs/yr of phosphorus will be removed. This project will also provide stormwater runoff flow reduction for small storm events.

**Project Design Considerations:** Stream Restoration Project DE9244 is adjacent to the neighborhoods. Coordination and sequencing of these projects should be considered. Portions of the neighborhoods are in a floodplain and the Chesapeake Bay Resource Protection Area which have special permitting requirements. Installation of LID measures in these areas should be avoided. Easements will not be required. Impacts to trees will be minimized.



Project Area Map: Conceptual plan showing potential locations of LID measures



Site Photo: A street with a roadside ditch in the project area

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Tree Box Filters	6	EA	\$5,000.00	\$30,000.00
Bioretention	1,420	SY	\$250.00	\$355,000.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
			Base Construction Cost	\$388,000.00
			Mobilization (5%)	\$19,400.00
			<b>Subtotal 1</b>	\$407,400.00
			Contingency (25%)	\$101,850.00
			<b>Subtotal 2</b>	\$509,250.00
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$229,162.50
			<b>Estimated Project Cost</b>	<b>\$740,000.00</b>

## Project: DE9836 Neighborhood Stormwater Improvement Area



Vicinity Map

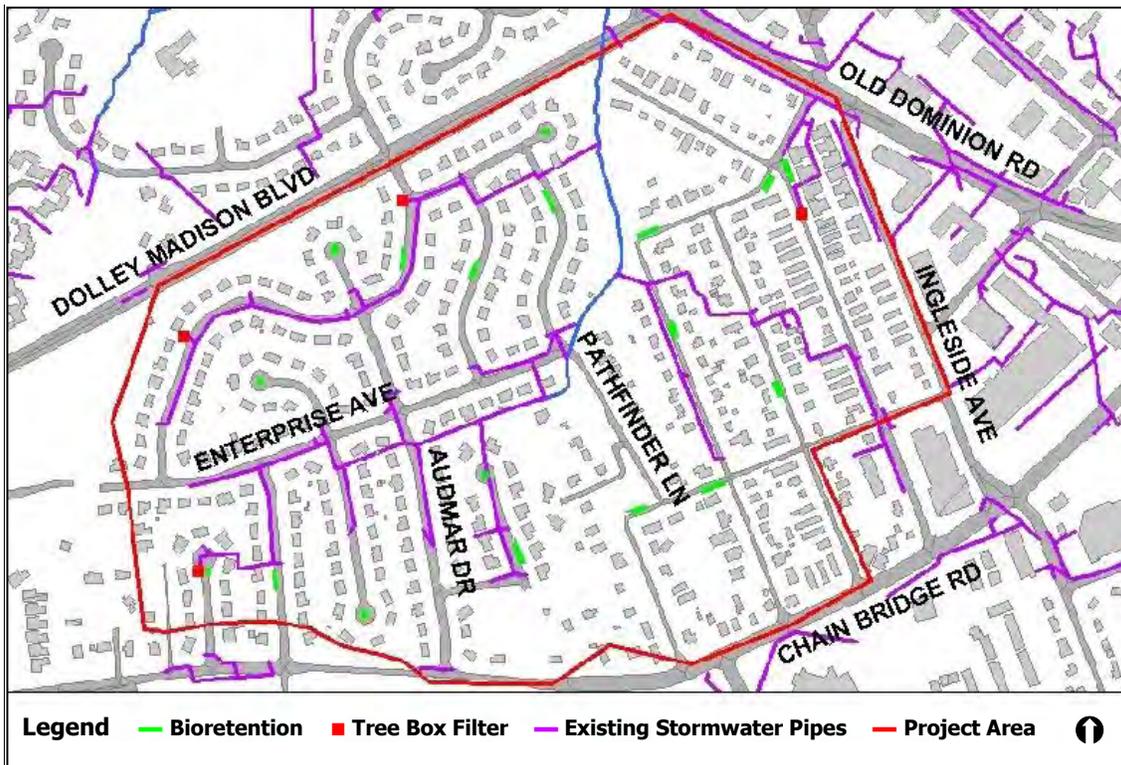
<b>Location:</b>	Broyhill-McLean Estates Neighborhood
<b>Land Owner:</b>	Private Residential and VA Department of Transportation
<b>Tax Map:</b>	30-1, 30-2, 30-3, and 30-4
<b>Drainage Area:</b>	8.2 acres
<b>Stream Name:</b>	Dead Run

**Description:** This neighborhood does not have any existing stormwater controls and has had a variety of drainage problems over the years ranging from stream erosion to house flooding. Construct bioretention areas and bioswales in the grass right of way areas and replace four curb drop inlets with tree box filters. This project will also study the existing storm drain system to determine flooding causes as

well as identifying locations where improvements are needed and constructing the recommended improvements.

**Potential Benefits:** An estimated 7.6 lbs/yr of phosphorus will be removed. This project will provide stormwater runoff flow reduction for small storm events, help to reduce stream erosion, and reduce yard, road, and house flooding.

**Project Design Considerations:** Stream Restoration Project DE9226 and New BMP Project DE9132 are also in this neighborhood. Coordination and sequencing of these projects should be considered. Portions of the neighborhood are in the Chesapeake Bay Resource Protection Area which has special permitting requirements. Installation of LID measures in these areas should be avoided. Easements may be required. Impacts to trees will be minimized.



Project Area Map: Conceptual plan showing potential locations of LID measures



Site Photo: A street with roadside ditches in the Broyhill-McLean Estates Neighborhood

**Costs:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Tree Box Filters	4	EA	\$5,000.00	\$20,000.00
Bioretention	740	SY	\$250.00	\$185,000.00
Erosion and Sediment Control	1	LS	\$3,000.00	\$3,000.00
Storm drain study	1	LS	\$100,000.00	\$100,000.00
New storm pipe and structures	1	LS	\$600,000.00	\$600,000.00
Landscaping	1	LS	\$6,000.00	\$6,000.00
Demolish pavement/new pavement	2,000	SY	\$55.00	\$110,000.00
			Base Construction Cost	\$1,024,000.00
			Mobilization (5%)	\$51,200.00
			<b>Subtotal 1</b>	\$1,075,200.00
			Contingency (25%)	\$268,800.00
			<b>Subtotal 2</b>	\$1,344,000.00
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	\$604,800.00
			<b>Estimated Project Cost</b>	<b>\$1,950,000.00</b>