5.15 Project Fact Sheets

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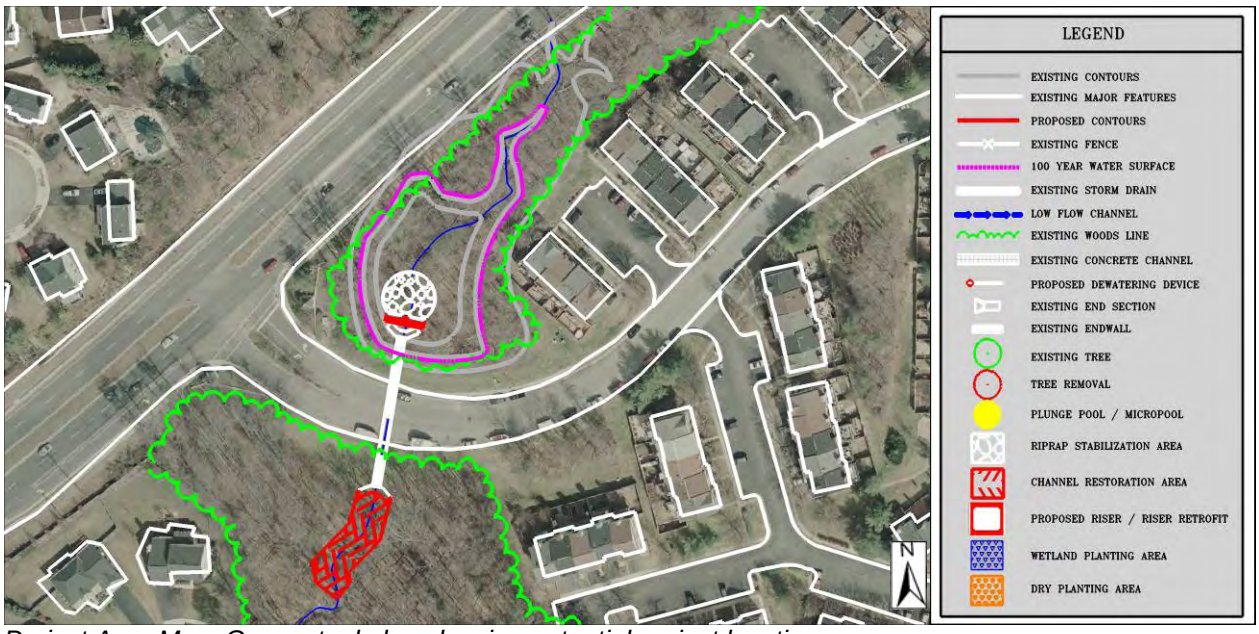
AC9101 - Pond Retrofit

Address:	Under Mount Air Drive, near the intersection of Telegraph Road
Location:	Village of Mount Air neighborhood
Land Owner:	Private - Residential
PIN:	0994 06 C
Control Type	Water Quality and Quantity
Drainage Area	40.95 acres
Receiving Waters	Unknown tributary of Accotink Creek

Description: This existing dry pond, 0629DP, is on the upstream side of the road culvert underneath Mount Air Drive near Telegraph Road in the Village of Mount Air neighborhood. The pond is located within a forested area where a perennial stream channel flows through the road culvert. There is significant erosion on the downstream side of this culvert. The proposed retrofit consists of installing a weir wall control structure to modify the outflow characteristics to provide water quality treatment. The receiving stream on the downstream side of the road culvert will be stabilized to prevent further erosion.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: Adding the control structure will extend the detention time, which will increase the settling of suspended solids and capture of floatables, thus improving the health of the downstream channel. It is estimated that an annual total of 6,479 lbs of sediment, 63 lbs of total nitrogen and 12 lbs of total phosphorus would be reduced by this project.

Project Design Considerations: The road culvert underneath Mount Air Drive is located in a residential community with several townhouse buildings within close proximity. Coordination with residents and possibly a HOA will be necessary to retrofit this site since it is located on private land. The base flow component of the control structure will require maintenance to prevent clogging. All components of the existing embankment and stream channel should be analyzed to ensure that it is designed to handle the impounded water. Environmental permitting issues are expected due to the in-stream location of this facility. Minimal tree loss is expected to obtain access and to clear the upstream embankment during construction. Existing utility conflicts are not anticipated with this retrofit. Access to the site is very good from Mount Air Drive.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	1	AC	$8,500.00	$8,500
New Riser	1	LS	$8,000.00	$8,000
Channel Stabilization	120	LF	$50.00	$6,000
Rip Rap Stabilization	80	SY	$100.00	$8,000
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$39,000**
Plantings	1	LS	5% of Project	$1,950
Ancillary Items	1	LS	5% of Project	$1,950
Erosion and Sediment Control	1	LS	10% of Project	$3,900
			Base Construction Costs	**$46,800**
			Mobilization (5%)	$2,340
			Subtotal 1	$49,140
			Contingency (25%)	$12,285
			Subtotal 2	$61,425
Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)				$27,641
			Estimated Project Cost	**$89,000**

Site Photo: Existing Facility Overview

Site Photo: Existing Control Structure

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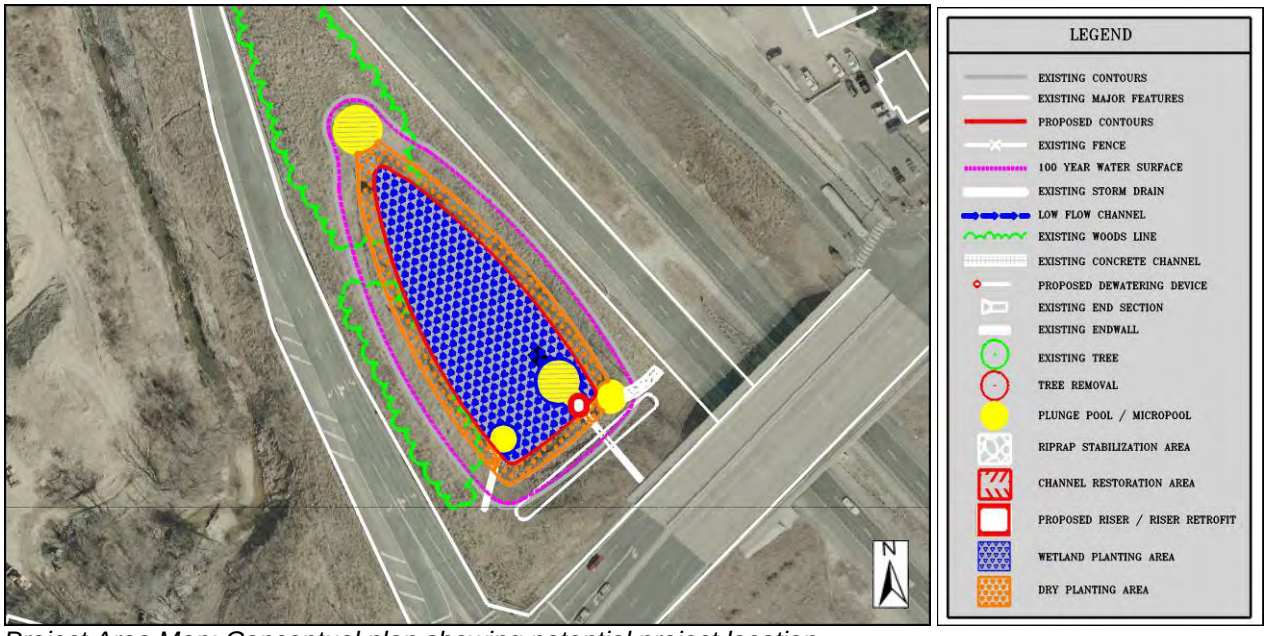
AC9102 - Pond Retrofit

Address:	Along off ramp from Fairfax County Parkway to Telegraph Road
Location:	Intersection of Telegraph Rd and Fairfax County Parkway
Land Owner:	State - VDOT
PIN:	N/A
Control Type	Water Quality and Quantity
Drainage Area	21.29 acres
Receiving Waters	Long Branch South

Description: This is an existing dry pond, owned by the Virginia Department of Transportation (VDOT), which provides 2- and 10-year peak flow attenuation. The retrofit will modify the pond to a shallow wetland facility. This project will improve water quality and habitat by excavating for additional storage, adding plunge pools at the inflows, along with wetland and dry plantings.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: This facility has the potential to meet the water quality treatment requirement by providing extended detention of the half-inch, 48-hour storm. Retrofitting this facility will improve the removal of suspended solids and floatables by extending detention time, which will improve water quality and habitat. These proposed improvements will also help prevent future downstream channel erosion. It is estimated that an annual total of 7,046 lbs of sediment, 86 lbs of total nitrogen and 12 lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Since this facility is owned and maintained by VDOT, coordination with VDOT will be necessary. Based on a recent inspection of this facility, no baseflow was found; however, the presence of potential wetlands may present environmental permitting issues. No tree loss will occur with this retrofit. In a recent inspection of this facility, it appears as if there has been some recent maintenance or work performed on this pond. Access to this facility is very good from an access road off of Fairfax County Parkway. Overhead power lines are present over the access road; however, they appear to be relatively high and should not interfere with construction equipment. No other utility conflicts are anticipated with this project.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	1.3	AC	$8,500.00	$11,050
Plungepool / Micropool	4	EA	$400.00	$1,600
Grading and Excavation	2591	CY	$35.00	$90,685
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$111,835**
Plantings	1	LS	5% of Project	$5,592
Ancillary Items	1	LS	5% of Project	$5,592
Erosion and Sediment Control	1	LS	10% of Project	$11,184
			Base Construction Costs	**$134,203**
			Mobilization (5%)	$6,710
			Subtotal 1	$140,913
			Contingency (25%)	$35,228
			Subtotal 2	$176,141
Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits			(45%)	$79,263
			Estimated Project Cost	**$255,000**

Site Photo: Existing Facility Overview

Site Photo: Existing Control Structure

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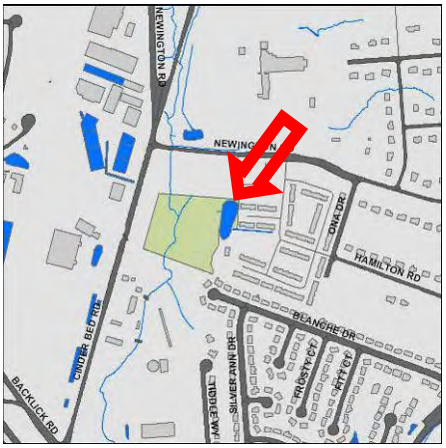
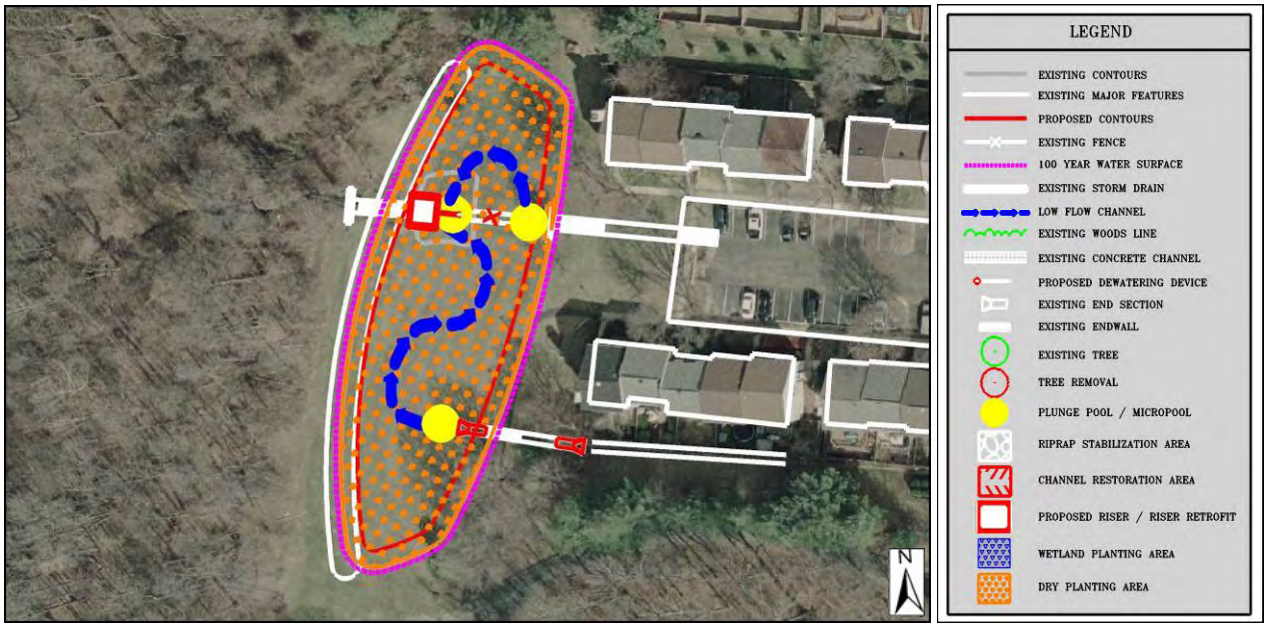
AC9105 - Pond Retrofit



Address:	At the end of Trestle Court
Location:	Pinewood Station neighborhood
Land Owner:	Private - Residential
PIN:	0994 04 D1
Control Type	Water Quality and Quantity
Drainage Area	17.75 acres
Receiving Waters	Long Branch South

Description: This project is a retrofit of an existing dry pond (0095DP) currently providing quantity control for the multifamily residential houses in Pinewood Station. The pond will be upgraded to an extended detention facility to improve water quality and habitat and prevent downstream channel erosion. This project will consist of removing the existing headwalls and adding a riser structure, adding a plunge pool at each inflow for energy dissipation into the facility, excavating for additional storage, and replacing the concrete low-flow channel with a meandering natural channel.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: This facility will meet the water quality treatment requirement by providing extended detention of the half-inch, 48-hour storm. It would also likely meet the peak flow management requirements of the 2 and 10-year storm. Retrofitting this facility would promote the removal of suspended solids and floatables through extended detention and the use of micropools at the inlets, thus improving water quality and habitat. These proposed improvements will also help prevent future downstream channel erosion. Peak flow rates, erosive velocities and channel sediment loads will be reduced by this project. It is estimated that an annual total of 2,989 lbs of sediment, 27 lbs of total nitrogen and seven lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Since this facility is located in a residential community, installing signs around the facility is recommended to improve public knowledge. Coordination with residents and the HOA will be necessary to retrofit this facility since it is located on private land. Environmental permitting issues may be encountered due to the presence of baseflow into this facility. No tree loss will occur with this retrofit. There is good access to this facility at the end of Trestle Court. Several underground utilities and sanitary sewer manholes were identified near the townhouses located at the end of Trestle Court; however, utility conflicts in the pond or on the pond embankment are not anticipated.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Paved Ditch Demolition & Haul Away	50	LF	$30.00	$1,500
Plungepool / Micropool	3	EA	$400.00	$1,200
Excavate to create low-flow channel	220	LF	$25.00	$5,500
New Riser	1	LS	$8,000.00	$8,000
Embedded Dewatering Pipe	1	EA	$500.00	$500
Grading and Excavation	1229	CY	$35.00	$43,015
Remove Existing Headwall	1	EA	$300.00	$300
New End wall	2	EA	$2,500.00	$5,000
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$73,515**
Plantings	1	LS	5% of Project	$3,676
Ancillary Items	1	LS	5% of Project	$3,676
Erosion and Sediment Control	1	LS	10% of Project	$7,352
			Base Construction Costs	**$88,219**
			Mobilization (5%)	$4,411
			Subtotal 1	$92,630
			Contingency (25%)	$23,158
			Subtotal 2	$115,788
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	$52,105
			Estimated Project Cost	**$168,000**

Site Photo: Existing Facility Overview

Site Photo: Existing Control Structure

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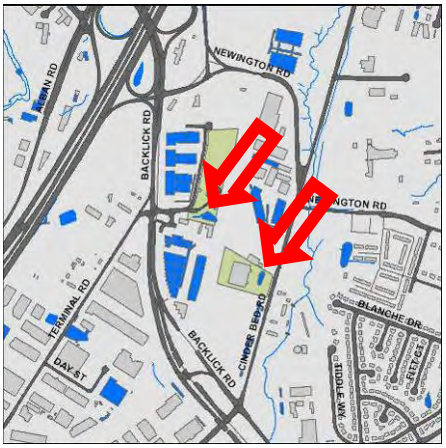
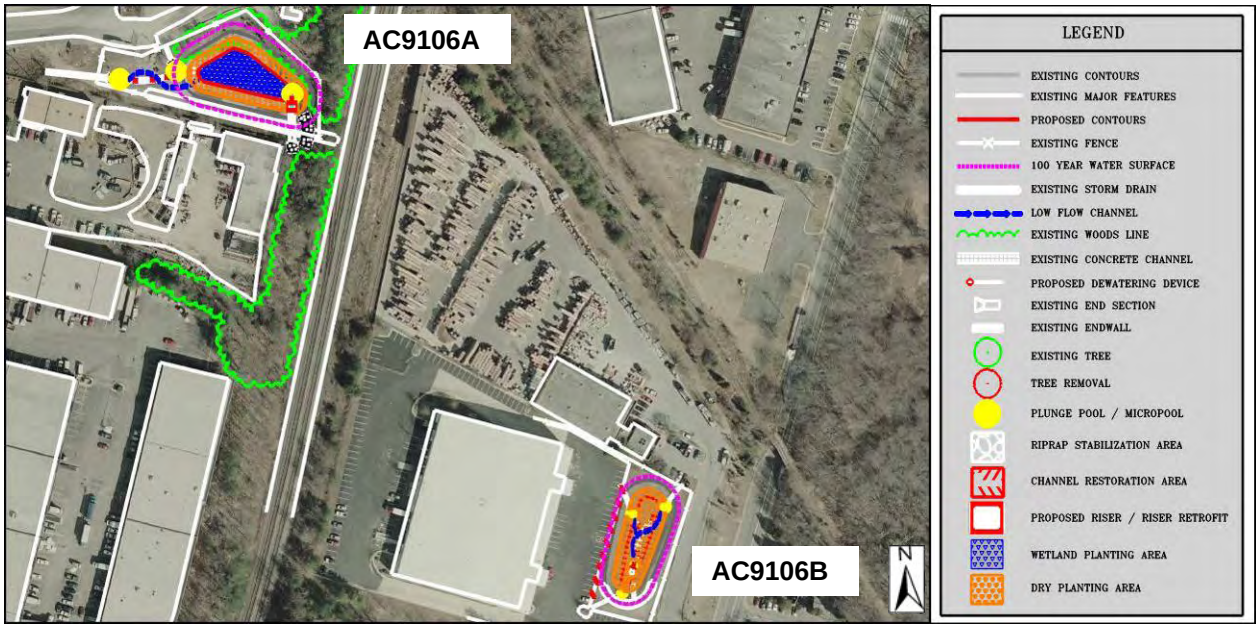
AC9106 - Pond Retrofit



Address:	Behind 8157 Backlick Road, In front of 8308 Cinderbed Road
Location:	Backlick Road and Cinderbed Road
Land Owner:	State - VDOT, Private - Commercial
PIN:	0993 01 0038, 0994 01 0004B
Control Type	Water Quality and Quantity
Drainage Area	6.96 acres, 13.24 acres
Receiving Waters	Long Branch South

Description: This project is a retrofit of two neighboring dry ponds that treat runoff from Newington Industrial Park. AC9106A is an existing dry pond, owned by the Virginia Department of Transportation (VDOT), which will be upgraded to a shallow wetland facility to improve water quality and habitat and reduce downstream channel erosion. There is a concrete channel that carries runoff to the plunge pool. The pond will also receive a new riser, dewatering device, and wetland plantings.

AC9106B is also an existing dry pond (DP0474). There are two concrete low-flow channels within the pond that drain runoff from the surrounding industrial area. This project will consist of removing the concrete channels, incorporating a meandering natural channel through each pond, and adding micropools or plunge pools at each inflow. The project will also include modifications to the riser structure and removing curb and gutter along the parking lot to allow for sheetflow into the facility.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: These facilities have the potential to meet the water quality treatment requirement for the contributing drainage areas via extended detention of the one-half inch, 48-hour storm, as well as managing the peak flow of the 2-year and 10-year peak runoff volumes. Retrofitting these facilities will promote the removal of suspended solids and floatables to downstream channels and improve water quality and habitat. These proposed improvements will also help reduce future downstream channel erosion. Peak flow rates, erosive velocities, and channel sediment loads will be reduced by this project. It is estimated that an annual total of 8,238 lbs of sediment, 56 lbs of total nitrogen and 12 lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Site AC9106A is owned and maintained by VDOT, coordination with VDOT will be necessary to retrofit this facility. Baseflow and wetlands currently in AC9106A may present environmental permitting issues. Minimal tree loss will occur and existing utility conflicts are not anticipated with retrofitting this site. Access to site AC9106A is very good from an access road off of Terminal Road.

Currently, site AC9106B is located within a fenced, private industrial property. Coordination with the property owners will be necessary to retrofit this site. Other than the fence surrounding the entire property, access is good due to a gravel road leading to the riser from the parking lot. The storm drain may need to be adjusted to ensure the pond bottom remains stable. Retrofitting site AC9106B will require no tree loss. No environmental permitting issues or existing utilities conflicts are expected with retrofitting site AC9106B.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.4	AC	$8,500.00	$3,400
Paved Ditch Demolition & Haul Away	415	LF	$30.00	$12,450
Plungepool / Micropool	7	EA	$400.00	$2,800
Excavate to create low-flow channel	235	LF	$25.00	$5,875
New Riser	1	LS	$8,000.00	$8,000
Riser Retrofit	1	LS	$4,000.00	$4,000
Embedded Dewatering Pipe	2	EA	$500.00	$1,000
Grading and Excavation	838	CY	$35.00	$29,330
Curb-Gutter Removal	225	LF	$5.00	$1,125
Soil Borings	2	LS	$8,500.00	$17,000
			Initial Project Costs	**$84,980**
Plantings	1	LS	5% of Project	$4,249
Ancillary Items	1	LS	5% of Project	$4,249
Erosion and Sediment Control	1	LS	10% of Project	$8,498
			Base Construction Costs	**$101,976**
			Mobilization (5%)	$5,099
			Subtotal 1	$107,075
			Contingency (25%)	$26,769
			Subtotal 2	$133,844
Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits			(45%)	$60,230
			Estimated Project Cost	**$194,000**

Site Photo: Existing Facility Overview (AC9106A)

Site Photo: Existing Facility Overview (AC9106B)

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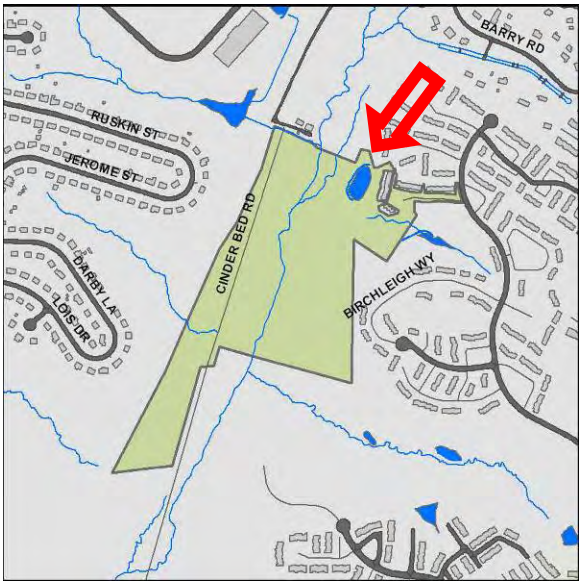
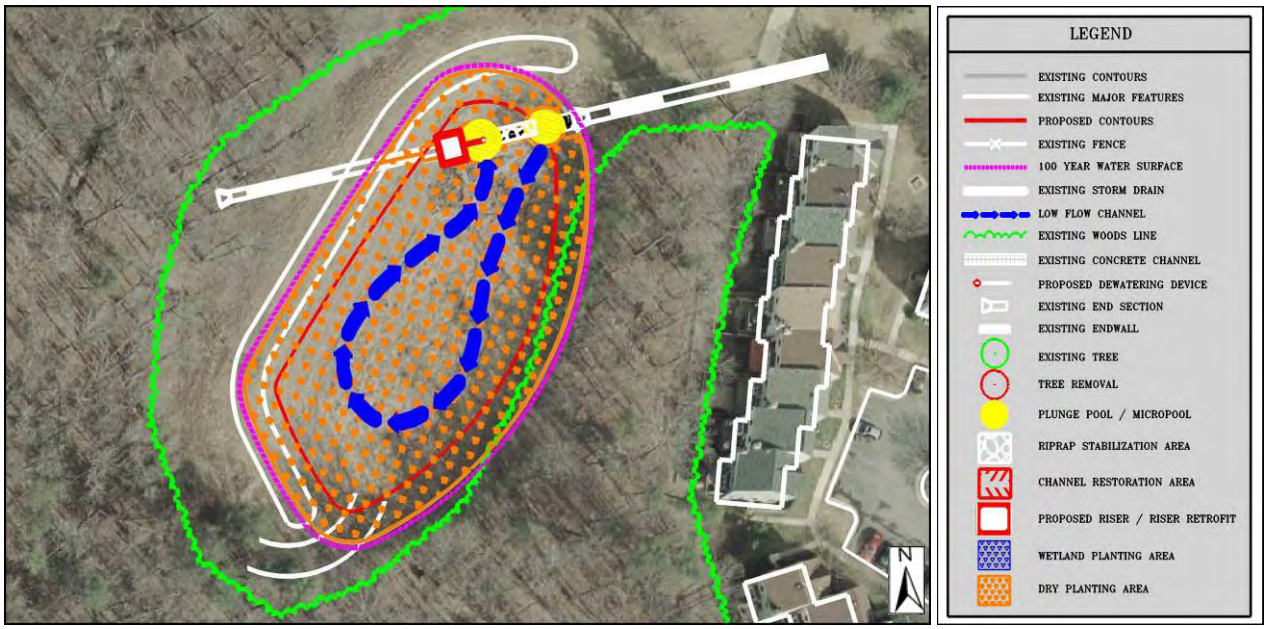
AC9110 - Pond Retrofit



Address:	At the end of Briarleigh Way, near the intersection of Birchleigh Way and Crestleigh Way
Location:	Amberleigh neigborhood
Land Owner:	Private - Residential
PIN:	0904 10 L, 0904 10 F
Control Type	Water Quality and Quantity
Drainage Area	13.62 acres
Receiving Waters	Unknown tributary of Long Branch South

Description: This project is a retrofit of dry pond (0700DP) receives runoff from the high-density residential Amberleigh neighborhood. It is surrounded by woods with some small trees growing within the facility. This project will consist of removing the existing headwall and replacing it with a new riser structure including a dewatering device, a meandering low flow channel, a micropool and a plunge pool at the riser and the pond inflow and excavating for additional storage. The addition of a riser to the outlet pipe of this facility will allow the pond to meet water quality and quantity goals for habitat improvement and prevention of downstream channel erosion.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: This facility will meet the water quality treatment requirement for the contributing drainage area by providing extended detention of the half-inch, 48-hour storm. It also meets the peak flow management requirements of the 2 and 10-year storm. By providing extended detention and wet storage in micropools, retrofitting this facility would promote the removal of suspended solids and floatables to downstream channels, which will enhance water quality and habitat. It is estimated that an annual total of 3,501 lbs of sediment, 38 lbs of total nitrogen and eight lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Coordination with residents and an HOA will be necessary to retrofit this facility since it is located on private land. No environmental permitting issues are expected with this pond retrofit. Minimal tree loss is expected within the facility and on the embankment with this retrofit. No design or construction issues were identified at this site. Existing utility conflicts are not anticipated. Access to this facility is very good from an access road located at the end of Briarleigh Way.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.6	AC	$8,500.00	$5,100
Plunge pool / Micropool	2	EA	$400.00	$800
Excavate to create low-flow channel	325	LF	$25.00	$8,125
New Riser	1	LS	$8,000.00	$8,000
Embedded Dewatering Pipe	1	EA	$500.00	$500
Grading and Excavation	1938	CY	$35.00	$67,830
Remove Existing Headwall	1	EA	$300.00	$300
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$99,155**
Plantings	1	LS	5% of Project	$4,958
Ancillary Items	1	LS	5% of Project	$4,958
Erosion and Sediment Control	1	LS	10% of Project	$9,916
			Base Construction Costs	**$118,987**
			Mobilization (5%)	$5,949
			Subtotal 1	$124,936
			Contingency (25%)	$31,234
			Subtotal 2	$156,170
Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)				$70,277
			Estimated Project Cost	**$226,000**

Site Photo: Facility Inflow and Overall Facility

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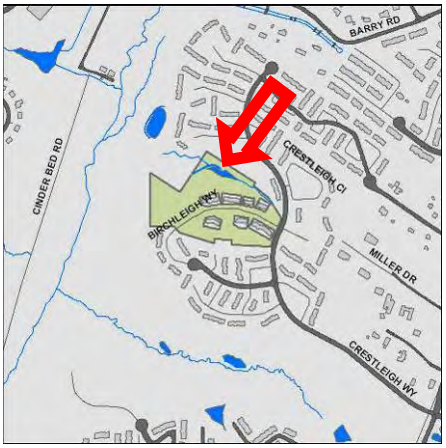
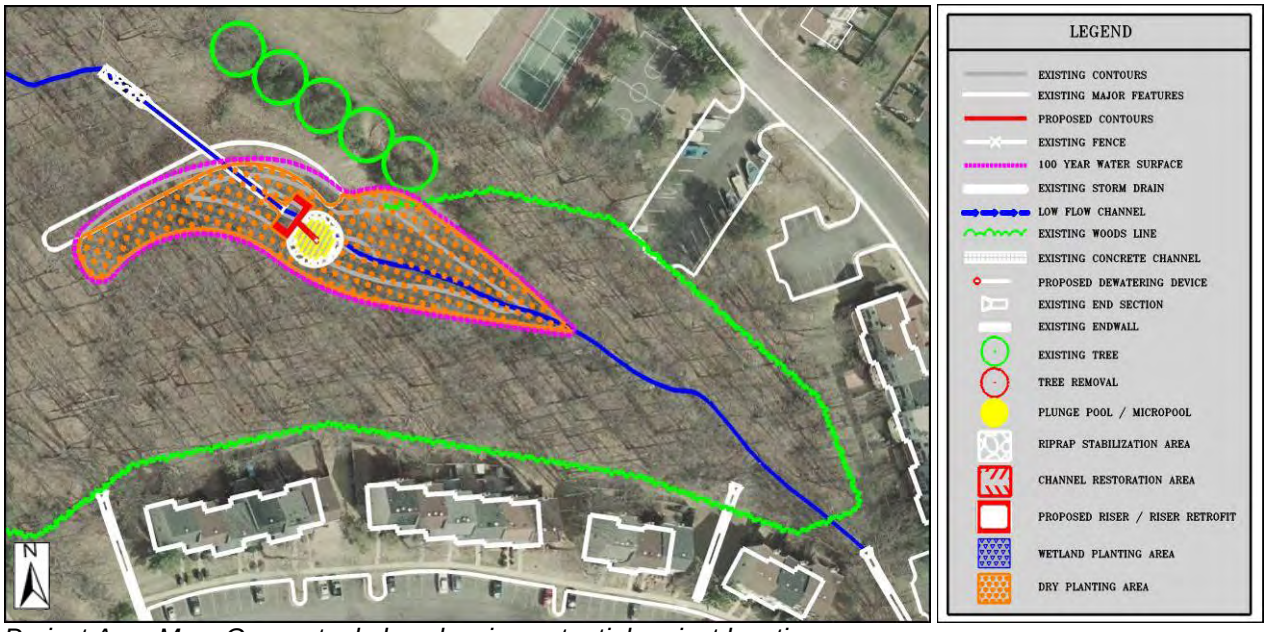
AC9111 - Pond Retrofit



Address:	Behind 6530 Birchleigh Way, near the intersection of Birchleigh Way and Crestleigh Way
Location:	Amberleigh neigborhood
Land Owner:	Private - Residential
PIN:	0904 10 F
Control Type	Water Quality and Quantity
Drainage Area	25.49 acres
Receiving Waters	Unknown tributary of Long Branch South

Description: This proposed project is a retrofit of dry pond 0180DP, which receives runoff from the high-density residential Amberleigh neighborhood and its associated recreational areas. It has woods on three sides as well as some trees growing within the facility. The stream channel that flows into and within the facility is incised. This project will involve removing the existing headwall, tree removal, dry plantings and rip rap stabilization at the riser.The addition of a riser to the outlet pipe of this facility will allow the facility to achieve water quality and some quantity goals for habitat improvement and reduction of downstream channel erosion.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: This facility will meet the water quality treatment requirement via extended detention of the one-half inch, 48-hour storm, as well as manage the 2-year peak runoff volume. Retrofitting this facility would promote the removal of suspended solids and floatables to downstream channels through extended detention, which will improve water quality and habitat. These proposed improvements will also help prevent future downstream channel erosion. Peak flow rates, erosive velocities and channel sediment loads are expected to be reduced by this project. It is estimated that an annual total of 6,121 lbs of sediment, 69 lbs of total nitrogen and 15 lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Since this facility is located in a residential community, installing signs around the facility is recommended to increase public knowledge of the project. Coordination with residents and the HOA will be necessary to retrofit this facility since it is located on private land. Environmental permitting issues are expected due to the in-stream location of this facility. Some tree loss is expected with this retrofit. In-stream construction will require base flow diversion. The base flow component of the replaced control structure will require monitoring to prevent clogging. Stabilization of the stream channel within the existing facility would be incorporated with this retrofit. Existing utility conflicts are not anticipated. Access to this facility will require crossing through several hundred feet of recreational area located at the intersection of Crestleigh Way and Greenleigh Lane.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.4	AC	$8,500.00	$3,400
Tree Removal	3	EA	$2,000.00	$6,000
Plunge pool / Micropool	1	EA	$400.00	$400
New Riser	1	LS	$8,000.00	$8,000
Embedded Dewatering Pipe	1	EA	$500.00	$500
Rip Rap Stabilization	55	SY	$100.00	$5,500
Remove Existing Headwall	1	EA	$300.00	$300
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$32,600**
Plantings	1	LS	5% of Project	$1,630
Ancillary Items	1	LS	5% of Project	$1,630
Erosion and Sediment Control	1	LS	10% of Project	$3,260
			Base Construction Costs	**$39,120**
			Mobilization (5%)	$1,956
			Subtotal 1	$41,076
			Contingency (25%)	$10,269
			Subtotal 2	$51,345
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	$23,105
			Estimated Project Cost	**$74,000**

Site Photo: Existing Facility Inflow

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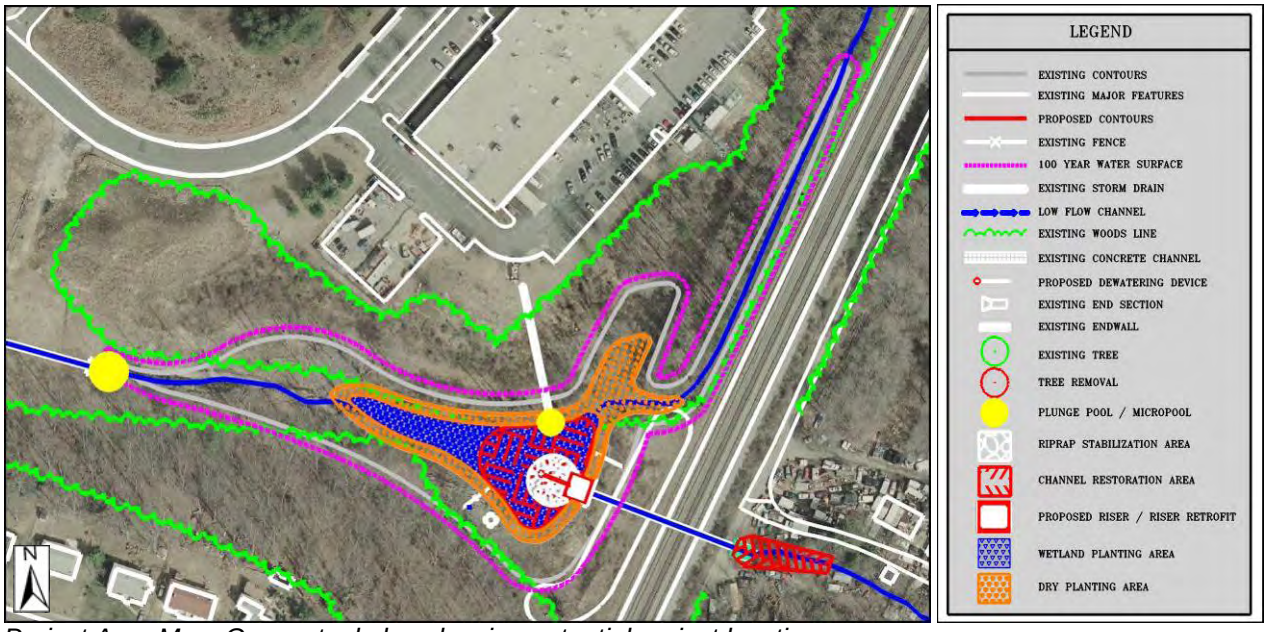
AC9112 - Pond Retrofit

Address:	Behind 6700 Springfield Center Drive
Location:	Springfield Industrial Park
Land Owner:	Private - Commercial
PIN:	0904 01 0011
Control Type	Water Quality and Quantity
Drainage Area	61.84 acres
Receiving Waters	Unknown tributary of Long Branch South

Description: This is an existing dry pond (DP0366), which will be converted to a shallow wetland facility. Currently, the riser at this facility appears to be very old. Along with replacing the riser, retrofitting this facility will require removal of accumulated sediment and additional excavation and grading to provide more storage capacity to manage peak flows. The project would also address stabilization of the outfall of the barrel pipe and the downstream channel due to erosion. The retrofit will allow the pond to meet water quality and quantity goals for habitat improvement and prevention of downstream channel erosion.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: This facility will meet the water quality treatment requirement for the contributing drainage area by providing extended detention of the half-inch, 48-hour storm. It will also meet the peak flow management requirements of the 2-year storm and also for a large portion of the 10-year storm. Retrofitting this facility would promote the removal of suspended solids and floatables to downstream channels thus improving water quality and habitat. Retrofitting this facility would also help to reduce future downstream erosion by reducing peak flow rates and erosive velocities. It is estimated that an annual total of 13,283 lbs of sediment, 44 lbs of total nitrogen and 17 lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Since this facility is located in a private commercial/industrial area, coordination with the property owner and railroad company will be necessary to retrofit this facility. An existing access road off of Springfield Center Drive will need to be used to access this facility. Access will be difficult to this facility and will require the removal of trees, the disturbance of a stream channel or floodplain, and steep slope modification. In-stream construction will require base flow diversion. The base flow component of the replaced control structure will require regular maintenance to prevent clogging. Environmental permitting issues are expected due to the in-stream location of this facility. Some tree removal within the facility and on the upstream side of the pond embankment can be expected with this retrofit. Overhead power lines, sanitary sewer markers, and gas and electric markers are all present within close proximity to the existing riser. These utilities may constrain the retrofit potential of this facility.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.8	AC	$12,000.00	$9,600
Plunge pool / Micropool	2	EA	$400.00	$800
New Riser	1	LS	$8,000.00	$8,000
Embedded Dewatering Pipe	1	EA	$500.00	$500
Channel Stabilization	115	LF	$50.00	$5,750
Rip Rap Stabilization	175	SY	$100.00	$17,500
Grading and Excavation	2367	CY	$35.00	$82,845
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$133,495**
Plantings	1	LS	5% of Project	$6,675
Ancillary Items	1	LS	5% of Project	$6,675
Erosion and Sediment Control	1	LS	10% of Project	$13,350
			Base Construction Costs	**$160,195**
			Mobilization (5%)	$8,010
			Subtotal 1	$168,205
			Contingency (25%)	$42,051
			Subtotal 2	$210,256
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	$94,615
			Estimated Project Cost	**$305,000**

Site Photo: Inside Existing Facility

Site Photo: Existing Control Structure

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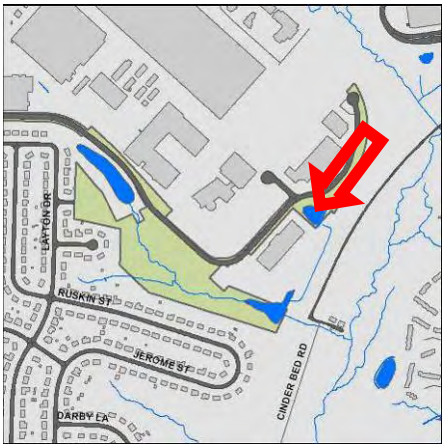
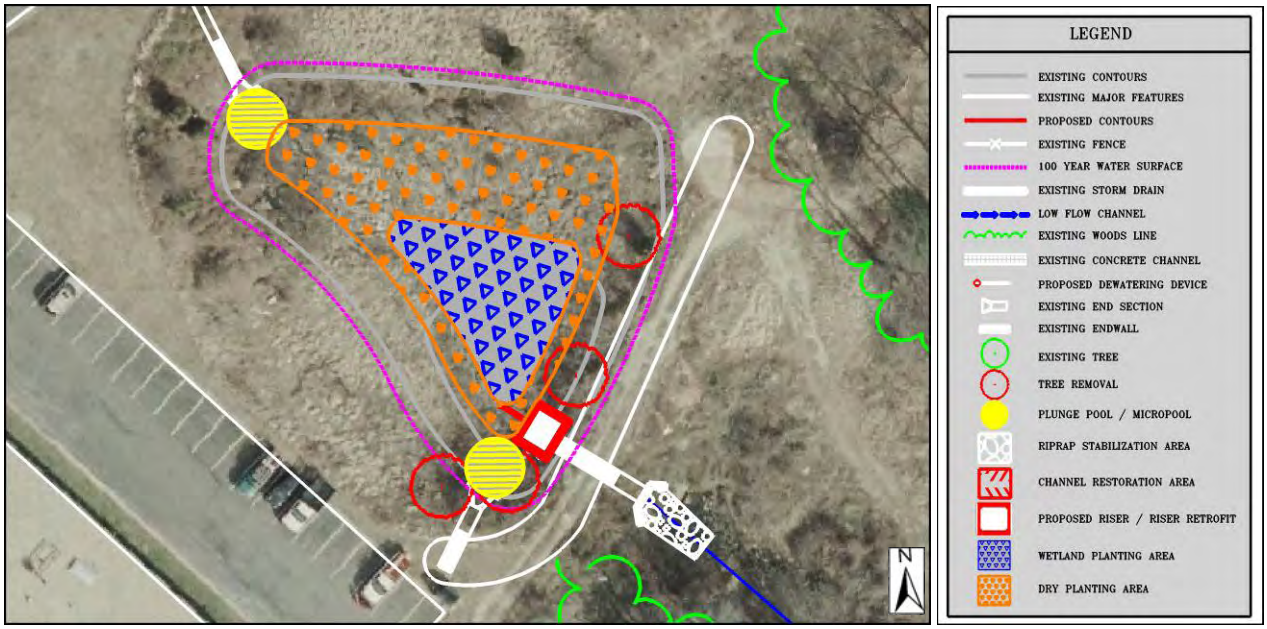
AC9113 - Pond Retrofit



Address:	Next to 6700 Springfield Center Drive
Location:	Springfield Industrial Park
Land Owner:	Private - Commercial
PIN:	0904 01 0011
Control Type	Water Quality
Drainage Area	38.14 acres
Receiving Waters	Unknown tributary of Long Branch South

Description: This project is a retrofit of existing dry pond DP0367 located in a highly vegetated area near the Springfield Industrial Park. The retrofit will convert the dry pond to a become a shallow wetland to improve water quality and habitat. The concrete riser of this facility was found to be in disrepair, so, as part of this retrofit, the current riser will be replaced. Two plunge pools and wetland plantings are also proposed as part of this retrofit.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: This facility will partially meet the water quality treatment requirements through extended detention of the half-inch, 48-hour storm along with some sedimentation through extended detention and nutrient uptake from wetland vegetation. It is estimated that an annual total of 11,309 lbs of sediment, 101 lbs of total nitrogen and 19 lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Since this facility is located in a private commercial/industrial area, coordination with the property owner will be necessary to retrofit this facility. Access to this facility is very good from a parking lot along Springfield Center Drive. Environmental permitting issues may be encountered due to the presence of wetlands within this facility. Moderate tree loss is expected with this pond retrofit associated with maintenance clearing of the pond embankment and from expanding the facility. Overhead power lines are present near the downstream embankment, but they appear to be relatively high and should not interfere with construction equipment. No other utility conflicts are anticipated with this project. No other design or construction issues were identified at this site.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.3	AC	$8,500.00	$2,550
Tree Removal	4	EA	$2,000.00	$8,000
Plunge pool / Micropool	2	EA	$400.00	$800
New Riser	1	LS	$8,000.00	$8,000
Embedded Dewatering Pipe	1	EA	$500.00	$500
Grading and Excavation	1203	CY	$35.00	$42,105
Fencing	560	LF	$20.00	$11,200
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$81,655**
Plantings	1	LS	5% of Project	$4,083
Ancillary Items	1	LS	5% of Project	$4,083
Erosion and Sediment Control	1	LS	10% of Project	$8,166
			Base Construction Costs	**$97,987**
			Mobilization (5%)	$4,899
			Subtotal 1	$102,886
			Contingency (25%)	$25,722
			Subtotal 2	$128,608
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	$57,874
			Estimated Project Cost	**$186,000**

Site Photo: Existing Facility Overview

Site Photo: Existing Control Structur

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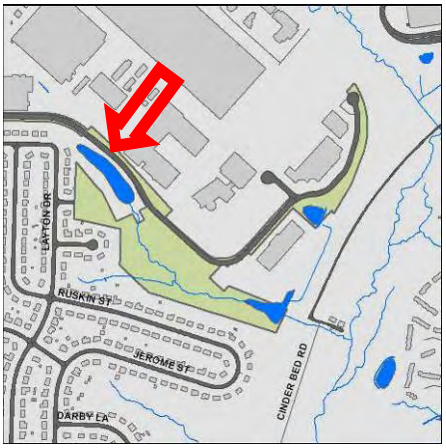
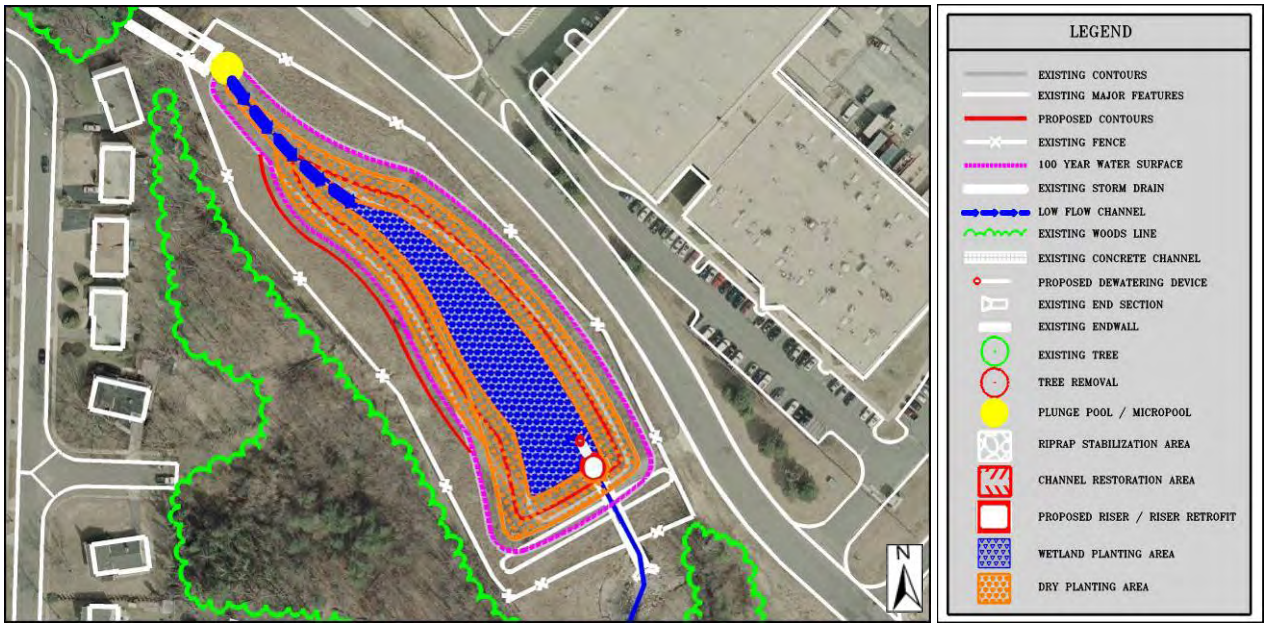
AC9114 - Pond Retrofit



Address:	Across from 6805 Springfield Center Drive
Location:	Springfield Industrial Park
Land Owner:	State - VDOT
PIN:	N/A
Control Type	Water Quality and Quantity
Drainage Area	119.41 acres
Receiving Waters	Unknown tributary of Long Branch South

Description: This project is a retrofit of dry pond VDOT29028 that will be converted to a shallow wetland facility. This project will consist of a new riser structure including a dewatering device, excavating for additional storage, a plunge pool at the inflow and wetland plantings to improve water quality and habitat and reduce downstream channel erosion. This facility has a large drainage area and conveys baseflow.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: This facility will meet the water quality treatment requirement through extended detention of the one-half inch, 48-hour storm. It will also manage the 2-year peak runoff volumes as well as the majority of the 10-year peak runoff volume. Retrofitting this facility would help to prevent future downstream erosion by reducing peak flow rates and erosive velocities. This retrofit will also promote the removal of suspended solids and floatables to downstream channels through extended detention, and reduce nutrient pollutant through uptake by wetland vegetation. It is estimated that an annual total of 15,912 lbs of sediment, 148 lbs of total nitrogen and 30 lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Since this facility is owned and maintained by VDOT, coordination with VDOT will be necessary. Access is facility is very good from Springfield Center Drive. Environmental permitting issues may be encountered due to the presence of baseflow from twin 42" storm sewer pipes that discharge into this facility. Minimal tree loss is expected with this pond retrofit. Existing utility conflicts are not anticipated. No design or construction issues were identified at this site. Currently, a chain link fence in good condition surrounds this facility.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	1.4	AC	$8,500.00	$11,900
Plunge pool / Micropool	1	EA	$400.00	$400
Excavate to create low-flow channel	170	LF	$25.00	$4,250
New Riser	1	LS	$8,000.00	$8,000
Embedded Dewatering Pipe	1	EA	$500.00	$500
Grading and Excavation	8192	CY	$35.00	$286,720
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$320,270**
Plantings	1	LS	5% of Project	$16,014
Ancillary Items	1	LS	5% of Project	$16,014
Erosion and Sediment Control	1	LS	10% of Project	$32,027
			Base Construction Costs	**$384,325**
			Mobilization (5%)	$19,216
			Subtotal 1	$403,541
			Contingency (25%)	$100,885
			Subtotal 2	$504,426
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	$226,992
			Estimated Project Cost	**$731,000**

Site Photo: Existing Facility Overview

Site Photo: Existing Control Structure

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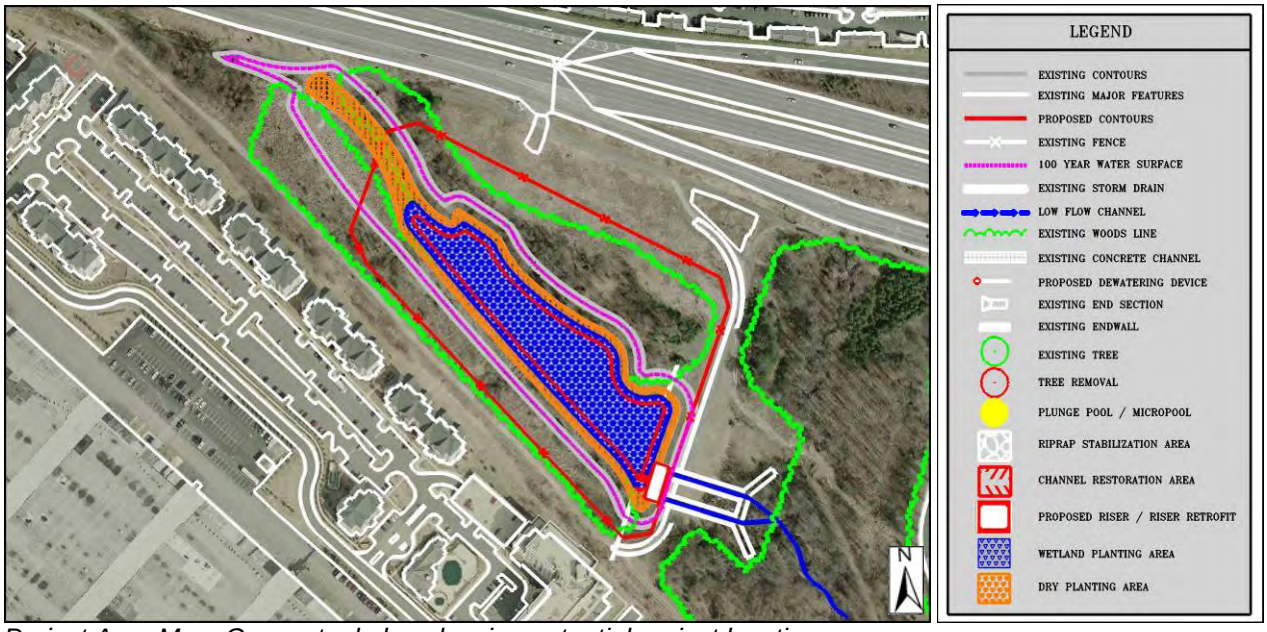
AC9120 - Pond Retrofit

Address:	Behind 6700 Metropolitan Center Drive, At the end of Metropolitan Center Drive
Location:	Franconia / Springfield Metro
Land Owner:	Public - Metro
PIN:	0902 01 0060
Control Type	Water Quality and Quantity
Drainage Area	277.87 acres
Receiving Waters	Long Branch South

Description: This in-stream dry pond (DP0296) currently treats the runoff from a high-density residential area near the Springfield Metro Station. The pond has a significant amount of trash and debris around the riser with overgrown vegetation throughout the facility. This project is a quantity control pond that will be converted to a shallow wetland by modifying the spillway characteristics of the existing riser, installing a new dewatering system and excavating to create permanent wet storage for water quality treatment.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: Incorporating a permanent wet storage component into this facility will provide approximately 50 percent of the water quality treatment volume required for the contributing drainage area. The available storage volume above the permanent pool has potential to provide peak flow management of the 2-year storm. Retrofitting this facility will promote uptake of nutrients, removal of pollutants, suspension of floatables and overall increases in water quality and habitat. Peak flow rates, erosive velocities and downstream channel sediment loads can also be reduced by this project. It is estimated that an annual total of 14,454 lbs of sediment, 119 lbs of total nitrogen and 27 lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Access to this facility is good due to an existing paved road on top of the pond embankment that originates from Franconia Springfield Parkway. Existing utility conflicts are not anticipated. Environmental permitting issues are anticipated due to the in-stream location of this facility. This retrofitted facility would require minor tree removal and impacts to existing stream channels. In-stream construction will require base flow diversion.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.9	AC	$12,000.00	$10,800
Riser Retrofit	1	LS	$4,000.00	$4,000
Embedded Dewatering Pipe	1	EA	$500.00	$500
Grading and Excavation	21248	CY	$35.00	$743,680
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$767,480**
Plantings	1	LS	5% of Project	$38,374
Ancillary Items	1	LS	5% of Project	$38,374
Erosion and Sediment Control	1	LS	10% of Project	$76,748
			Base Construction Costs	**$920,976**
			Mobilization (5%)	$46,049
			Subtotal 1	$967,025
			Contingency (25%)	$241,756
			Subtotal 2	$1,208,781
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	$543,951
			Estimated Project Cost	**$1,753,000**

Site Photo: Existing Facility Overview

Site Photo: Existing Control Structure

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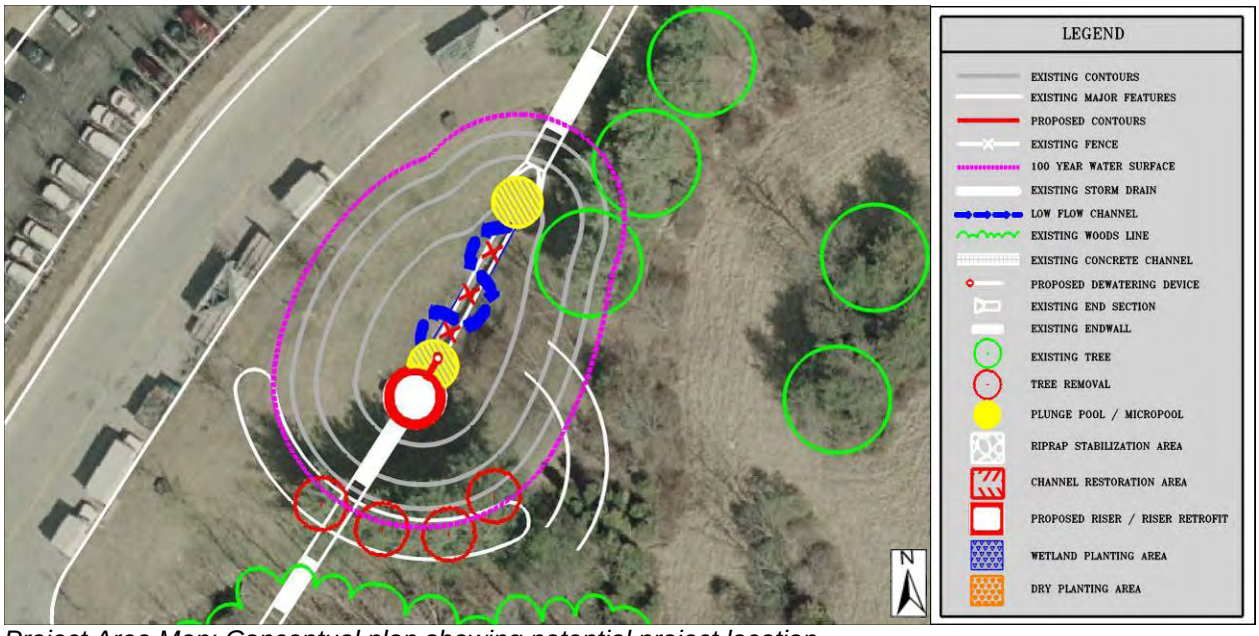
AC9123 - Pond Retrofit

Address:	At the end of 8500 block of Cinder Bed Road
Location:	Gateway 95 Business Park
Land Owner:	Private - Commercial
PIN:	0993 04 B
Control Type	Water Quality
Drainage Area	17.55 acres
Receiving Waters	Unknown tributary of Accotink Creek

Description: This project is intended to convert existing dry pond DP0411 on Cinder Bed Road to improve water quality. There are three inflows into the pond, one of which uses a concrete channel to convey flows to the riser structure. It appears that there used to be rip rap outfall protection at each of the inflows, but it has since been washed away.

To retrofit this pond, the concrete channel will be removed, a micropool and plunge pool will be provided and the riser will be modified. The riser modification will allow the pond to provide full water quality treatment as well as manage the 2-year storm to improve water quality and habitat and reduce downstream channel erosion. Some reduction of the 10-year peak flow would also be provided.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: This facility will meet the water quality treatment requirement for the contributing drainage area by providing extended detention of the half-inch, 48-hour storm. Extended detention, combined with wet storage is plumge pools and micropools, will promote the removal of suspended solids and improve water quality and habitat. In particular, retrofitting this facility would help to reduce the impact of oil that was present in the low flow concrete pilot channel during a field inspection of this site. The proposed improvements would also help prevent future downstream channel erosion by reducing peak flows and erosive velocities. It is estimated that an annual total of 6,194 lbs of sediment, 40 lbs of total nitrogen and eight lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Since this facility is located in a private commercial/industrial area , coordination with the property owner will be necessary to retrofit this facility. Access to this facility is very good from Cinder Bed Road. Environmental permitting issues may be encountered due to the presence of baseflow from a 42" storm sewer inflow into this facility. Minimal tree loss is expected on the downstream side of the embankment with this pond retrofit, although a few trees will need to removed along the embankment. Existing utility conflicts are not anticipated. Due to the commercial/industrial drainage area to this facility, stormwater controls for oil and grease, sediment, and trash should all be incorporated in the retrofit.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Paved Ditch Demolition & Haul Away	95	LF	$30.00	$2,850
Tree Removal	4	EA	$2,000.00	$8,000
Plunge pool / Micropool	2	EA	$400.00	$800
Excavate to create low-flow channel	90	LF	$25.00	$2,250
Riser Retrofit	1	LS	$4,000.00	$4,000
Embedded Dewatering Pipe	1	EA	$500.00	$500
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$26,900**
Plantings	1	LS	5% of Project	$1,345
Ancillary Items	1	LS	5% of Project	$1,345
Erosion and Sediment Control	1	LS	10% of Project	$2,690
			Base Construction Costs	**$32,280**
			Mobilization (5%)	$1,614
			Subtotal 1	$33,894
			Contingency (25%)	$8,474
			Subtotal 2	$42,368
Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)				$19,066
			Estimated Project Cost	**$61,000**

Site Photo: Existing Control Structure

Site Photo: Concrete Low Flow Channel and Embankment

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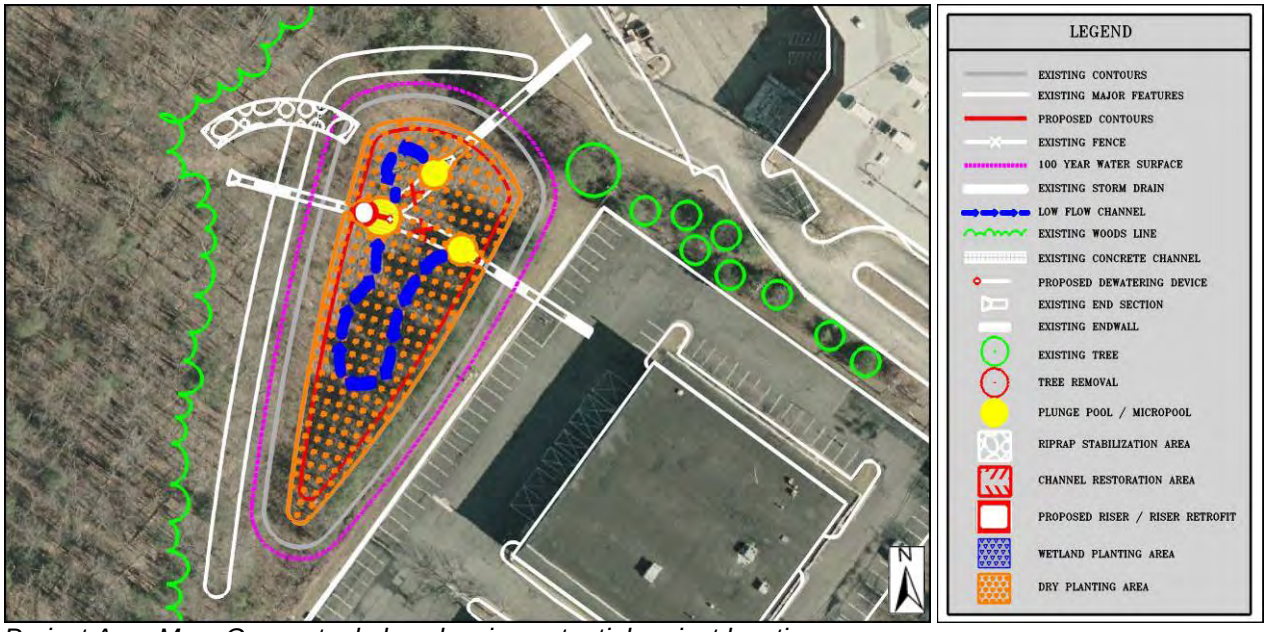
AC9126 - Pond Retrofit

Address:	Near the 8400 block of Alban Road
Location:	Alban Industrial Center
Land Owner:	Private - Commercial
PIN:	0993 01 0006D
Control Type	Water Quality and Quantity
Drainage Area	21.45 acres
Receiving Waters	Accotink Creek

Description: This existing dry pond, DP0338, provides little to no treatment due to the large size of the outlet pipe. There are currently two inflows into the facility that carry runoff through concrete channels directly to the outlet pipe. To provide water quality treatment, the pond would be excavated, the concrete channels would be removed and replaced with a meandering natural channel, and a new riser structure with a dewatering orifice would be installed.



Project Area Map: Conceptual plan showing potential project location

Project Benefits: This facility would meet the water quality treatment requirement for the contributing drainage area by providing extended detention of the half-inch, 48-hour storm, along with peak flow reduction for both the 2- and 10-year events. Retrofitting this facility would promote the removal of suspended solids and floatables to downstream channels through extended detention and wet storage in plunge pools and micropools. Retrofitting this facility would also help to reduce future downstream erosion by reducing peak flow rates and erosive velocities. It is estimated that an annual total of 7,756 lbs of sediment, 51 lbs of total nitrogen and nine lbs of total phosphorus would be reduced by this project.

Project Design Considerations: Since this facility is located in an industrial area off of Alban Road, coordination with the property owner will be necessary to retrofit the facility. Access to this facility is very good from a parking lot off of Alban Road. No environmental permitting issues or tree losses are expected with this retrofit. The addition of a riser would help this facility achieve water quality improvement goals for habitat improvement and prevention of downstream channel erosion. No other design or construction issues were identified at this site. No existing utility conflicts are anticipated.

Costs:

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Clear and Grub	0.7	AC	$12,000.00	$8,400
Paved Ditch Demolition & Haul Away	125	LF	$30.00	$3,750
Plunge pool / Micropool	3	EA	$400.00	$1,200
Excavate to create low-flow channel	260	LF	$25.00	$6,500
New Riser	1	LS	$8,000.00	$8,000
Embedded Dewatering Pipe	1	EA	$500.00	$500
Grading and Excavation	523	CY	$35.00	$18,305
Soil Borings	1	LS	$8,500.00	$8,500
			Initial Project Costs	**$55,155**
Plantings	1	LS	5% of Project	$2,758
Ancillary Items	1	LS	5% of Project	$2,758
Erosion and Sediment Control	1	LS	10% of Project	$5,516
			Base Construction Costs	**$66,187**
			Mobilization (5%)	$3,309
			Subtotal 1	$69,496
			Contingency (25%)	$17,374
			Subtotal 2	$86,870
			Engineering Design, Surveys, Land Acquisition, Utility Relocations, and Permits (45%)	$39,092
			Estimated Project Cost	**$126,000**

Site Photo: Existing Facility and Concrete Low Flow Channels

Site Photo: Existing Facility

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