

## **5.11 Accotink Mainstem 5**

The results of the subwatershed ranking analysis showed all except three subwatersheds in Mainstem 5 WMA to be in good condition, primarily due to the influence of undeveloped parcels of Accotink Stream Valley Park. Only two subwatersheds were ranked as highest priority in the watershed.

### **5.11.1 Structural Projects**

#### *5.11.1.1 10-Year Projects*

##### AC9139 Stormwater Pond Retrofit

This is a retrofit of existing dry pond 0935DP which will be converted to an extended detention facility through removing the concrete channel in the pond and replacing it with a meandering channel and modifying the riser to reduce stream channel erosion downstream.

##### AC9201 Stream Restoration

This stream restoration parallels Bardu Avenue in the Accotink Stream Valley Park. The upstream portion of the channel is relatively stable except for minor to moderate erosion occurring in isolated areas, and the downstream portion is very sinuous with moderate to severe erosion and over-widening evident. A partially exposed sanitary sewer crossing is present in the downstream portion of the project site. Recommendations include reducing the current channel dimensions, redirecting flows away from eroded meanders and installing grade controls to dissipate stream energy and prevent further widening. Armor-in-place or bioengineering stabilization techniques and stone toe protection may be needed on outer meander bends and at the sanitary sewer line crossing.

##### AC9202 Stream Restoration

The upstream portion of the channel is relatively stable except for minor to moderate erosion occurring in isolated areas, and the downstream portion is very sinuous with moderate to severe erosion and over-widening evident. A partially exposed sanitary sewer crossing is present in the downstream portion of the project site. The upstream section of the reach is severely eroded near the outfall; the downstream portion of this project is incised and experiencing moderate stream bank erosion. Restoration of the upstream portion of this project will focus on raising the bed elevation of the channel as well as regrading and stabilizing stream banks with armor-in-place or bioengineering techniques. The downstream portion of this project will focus on reconnecting this channel to the floodplain by reducing channel dimensions and raising the bed elevation.

##### AC9203 Stream Restoration

This proposed project is a stream restoration in Lake Accotink Park. Field investigation indicated areas of high stream bank erosion near Highland Street that require stabilization and an area under the sanitary sewer line that is actively eroding. Project recommendations include stream bank stabilization and installing flow deflectors upstream to direct the stream away from the stream bank.

##### AC9204 Stream Restoration

This is a potential stream restoration site along Heming Avenue in Lake Accotink Park. Field investigation indicated stream bank erosion on meanders and straight sections, including at a

storm drain outfall. Recommendations include reconnecting this channel to the original floodplain by reducing channel dimensions and raising the bed elevation. Grade controls should also be installed and the storm drain outfall corrected.

#### *5.11.1.2 25-Year Projects*

##### AC9137 Stormwater Pond Retrofit

This is a proposed retrofit of existing dry pond 0013DP behind Villa Park Road. Recommendations include removing the concrete channels and adding a riser for the outlet and a forebay micropool. Raising the outlet could provide water quality control and channel erosion control without sacrificing large storm detention.

##### AC9138 Stormwater Pond Retrofit

This project proposes to retrofit the existing dry pond (DP0049), which treats the stormwater runoff from the Toyota Dealership on Amherst Avenue, by widening and excavating the pond for water quality volume storage. No changes are recommended for the riser.

##### AC9140 Stormwater Pond Retrofit

This project recommends to retrofit wet pond WP0257 between Attendee Road and Floyd Avenue in Brookfield Park. Field assessment indicated that the only outlet for the pond is the spillway and that the pond receives stormwater but does not provide storage. Proposed recommendations include adding an aquatic bench and modifying the outlet and excavating the pond to provide storage.

##### AC9141 Stormwater Pond Retrofit

This project proposes a retrofit of dry pond DP0415 along Highland Street in the Highland Business Park. Recommendations include modifying the riser, removing concrete channels and lengthening the flow path. The bottom of the pond is swampy and could potentially be converted to a wetland or a pond with wetland elements.

##### AC9516 New BMP/LID

This project recommends the installation of a bioretention facility or tree box filters to treat runoff at each storm drain inlet in Lee Valley Apartments.

##### AC9517 New BMP/LID

This project recommends installing a bioretention facility in the courtyard at Garfield Elementary School to treat parking lot runoff and a grass swale to be constructed between the parking lot and fence.

##### AC9518 New BMP/LID

There are numerous downspouts that can be disconnected at Springfield United Methodist Church to improve water quality treatment. Additional recommendations include removing a concrete swale and converting the area to a vegetated swale and adding curb cuts at the edge of the parking lot to avoid concentrated flow to the swale.

#### AC9519 New BMP/LID

This project would treat the southern section of the parking lot of Springfield Shopping Plaza for water quality by creating rain gardens at depressed curb islands and adding bioretention at inlets.

#### AC9520 BMP/LID Retrofit

The northern section of Springfield Shopping Plaza is treated for water quantity control by existing underground facilities. Recommendations include installing rain gardens at depressed curb islands and providing bioretention at inlets to treat parking lot runoff for water quality.

#### AC9521 New BMP/LID

This parking lot retrofit is located at Saint Bernadette Church and School. Recommendations include adding a bioretention area in the back of the school and disconnecting downspouts to direct flow to the proposed bioretention facility.

#### AC9522 New BMP/LID

This proposed retrofit is located at Grace Presbyterian Church on Bath Street. The recommendation is to install a bioretention area along the parking lot to capture uncontrolled runoff. Some runoff is currently bypassing storm drains and causing stream bank erosion downstream of the site.

### **5.11.2 Non Structural Projects**

#### AC9903 Inspection/Enforcement Enhancement Project - Outdoor Materials

Materials that are stored outdoors are subjected to precipitation, making them a possible source of stormwater runoff pollution. Two sites in this WMA had oil tanks stored outdoors or roofing material stored outdoors. This project would be a community-wide enforcement and outreach approach to check for stormwater pollution prevention plans and to educate property owners.

#### AC9908 Inspection/Enforcement Enhancement Project - Dumpster Maintenance

One source of litter and pollutants in stormwater runoff is poorly maintained dumpsters and other waste management practices. This project is a community-wide enforcement and outreach approach to properties where problems were identified during the upland reconnaissance. Dumpsters at one location in this WMA were flagged as a hotspot with evidence of being too full and overflowing grease barrels.

#### AC9909 Rain Barrel Programs - Downspout Disconnect

The upland reconnaissance identified several sites where downspouts were directly connected to storm drains. A watershed-wide outreach program could be beneficial in reducing runoff volume or peak flows. In this WMA, they included the area around Keene Mill Manor, Cardinal Forest, Springfield and Monticello Forest.

#### AC9914 Community Outreach/Public Education - Turf Management

Outreach to turf managers is similar to that of lawn care; however, it is intended more for data gathering to assess current practices and education about runoff pollution. In this WMA, West Springfield, Hunter Village, Keene Mill Manor and Cardinal Forest were identified as a potential outreach sites.

**Table 5-11: Mainstem 5 Projects**

<b>Structural Projects</b>						
<b>Project #</b>	<b>Project Type</b>	<b>Subshed</b>	<b>Location</b>	<b>Watershed Benefit</b>	<b>Land Owner</b>	<b>Phase</b>
AC9139	Stormwater Pond Retrofit	AC-AC-0185	Westhaven neighborhood	Water Quality	Private - Residential	1 - 10
AC9201	Stream Restoration	AC-AC-0195	Accotink Stream Valley Park	Water Quality	County - FCPA	1 - 10
AC9202	Stream Restoration	AC-AC-0200	Charlestowne neighborhood	Water Quality	Private - Residential	1 - 10
AC9203	Stream Restoration	AC-AC-0215	Lake Accotink Park	Water Quality	County - FCPA	1 - 10
AC9204	Stream Restoration	AC-AC-0220	Lake Accotink Park	Water Quality	County - FCPA	1 - 10
AC9137	Stormwater Pond Retrofit	AC-CA-0005	Behind Cilla Park Rd	Water Quality and Quantity	Private - Residential	11 - 25
AC9138	Stormwater Pond Retrofit	AC-CA-0010	Toyota Dealership on Amherst Ave	Water Quality and Quantity	Private - Commercial	11 - 25
AC9140	Stormwater Pond Retrofit	AC-AC-0205	Brookfield Park	Water Quality and Quantity	County - FCPA	11 - 25
AC9141	Stormwater Pond Retrofit	AC-AC-0215	Highland Business Park	Water Quality and Quantity	Private - Commercial	11 - 25
AC9516	BMP/LID	AC-CA-0000	Lee Valley Apts	Water Quality	Private	11 - 25
AC9517	BMP/LID	AC-CA-0010	Garfield Elementary School	Water Quality	County - FCPS	11 - 25
AC9518	BMP/LID	AC-CA-0010	Springfield United Methodist Church	Water Quality	Private - Church	11 - 25
AC9519	BMP/LID	AC-CA-0010	Springfield Plaza	Water Quality	Private	11 - 25
AC9520	BMP/LID	AC-CA-0010	Springfield Plaza	Water Quality	Private	11 - 25
AC9521	BMP/LID	AC-AC-0185	Saint Bernadette Church and School	Water Quality	Private - Church	11 - 25
AC9522	BMP/LID	AC-AC-0205	Grace Presbyterian Church	Water Quality	Private - Church	11 - 25
<b>Non-Structural Projects</b>						
<b>Project #</b>	<b>Project Type</b>	<b>Subshed</b>	<b>Location</b>	<b>Watershed Benefit</b>	<b>Land Owner</b>	
AC9903	Inspection/Enforcement Enhancement Project	Multiple	Multiple	Water Quality	Multiple	
AC9908	Inspection/Enforcement Enhancement Project	Multiple	Multiple	Water Quality	Multiple	

Non-Structural Projects					
Project #	Project Type	Subshed	Location	Watershed Benefit	Land Owner
AC9909	Rain Barrels	Multiple	Multiple	Water Quality and Quantity	Multiple
AC9914	Community Outreach/Public Education	Multiple	Multiple	Water Quality	Multiple

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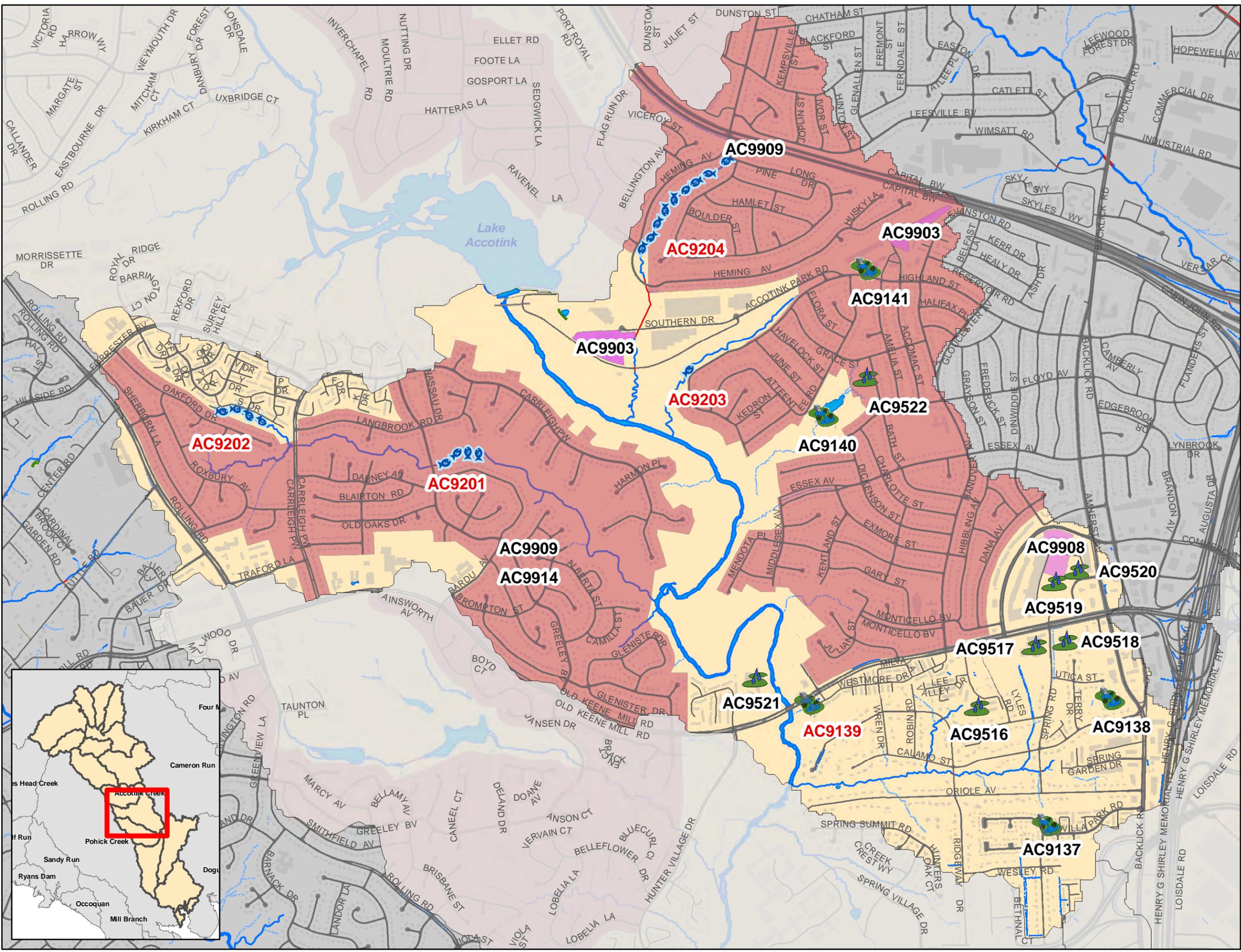
- Buffer Restoration
- Stream Restoration
- BMP/LID
- Culvert Retrofit
- Dumpsite/Obstruction Removal
- New Stormwater Pond
- Outfall Improvement
- Stormwater Pond Retrofit
- Other

- Community Outreach/Public Education
- Area-wide Drainage Improvements
- Land Conservation Project
- Flood Protection/Mitigation
- Inspection/Enforcement Enhancement Project
- Rain Barrel Programs
- Street Sweeping Program
- Studies, Surveys and Assessments

Implementation timeframe denoted by project label color.  
Red = 0-10 years Black = 11-25 years.

# Map 5.11

WMA: Mainstem 5  
Proposed Projects



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## **5.12 Accotink Mainstem 6**

The results of the subwatershed ranking analysis showed all except three subwatersheds in Mainstem 6 WMA to be in good condition primarily due to the influence of undeveloped parcels of Ft. Belvoir, West Springfield Park, Accotink Stream Valley Park and Springfield Golf Course. Only two subwatersheds were ranked as highest priority for overall project.

### **5.12.1 Structural Projects**

#### *5.12.1.1 10-Year Projects*

##### AC9133 Stormwater Pond Retrofit

This project is a retrofit of existing dry pond 0462DP located on the upstream side of Hunter Village Drive, which treats a high-density residential area in the Hunter Village neighborhood. To improve the treatment provided at this site, the project recommendation is to install a new riser structure and stabilize the existing stream channel into the facility.

##### AC9136 Stormwater Pond Retrofit

This project is a retrofit of a dry pond on Kenwood Avenue in the Kenwood Oaks neighborhood. Recommendations include excavating the bottom of the pond to create a shallow wetland and to provide additional storage by adjusting the outlet to maximize detention to improve water quality treatment.

##### AC9200 Stream Restoration

This project proposes to restore an eroded section of stream channel located in both private and public areas downstream of Greeley Boulevard. Restoration of this channel will focus on regrading and stabilizing eroded stream banks through the use of armor-in-place techniques on outer meander bends and bioengineering techniques on the inside meander bends and any straight portions of the channel.

##### AC9514 New BMP/LID

This project proposes to treat the parking lot runoff of the Cardinal Forest Plaza for water quality by constructing bioretention cells in the parking lot along Old Keene Mill Road.

##### AC9515 New BMP/LID

This project proposes to treat the parking lot runoff of the Old Keene Hills Shopping Center by implementing bioretention areas in parking islands or on the periphery of the lot.

#### *5.12.1.2 25-Year Projects*

##### AC9131 Stormwater Pond Retrofit

This project proposes to retrofit existing dry pond 0170DP, which treats the stormwater runoff from a medium-density residential area in the Shirley Springs neighborhood, by removing the concrete channel and excavating a micropool at the inlet to add water quality control.

##### AC9132 Stormwater Pond Retrofit

This proposed project is to retrofit the existing dry pond (0169DP), which treats the stormwater runoff from the low and medium-density residential areas in the Shirley Springs neighborhood

by removing the concrete channel, excavating the bottom for water quality volume storage and adjusting the outlet size. Curb cuts are also recommended to treat runoff from the road.

#### AC9134 Stormwater Pond Retrofit

This proposed project includes converting the existing pond in the Rolling Forest neighborhood to a detention pond by removing concrete channels, adding plungepools, modifying the riser and increasing the flow path. This will provide water quality treatment through extended detention.

#### AC9135 Stormwater Pond Retrofit

This is a project which groups retrofits of two small dry ponds: 0144DP behind Bethnal Place and a pond behind Caton Woods Court. The recommendation is to excavate both ponds for additional capacity to provide water quality along with the original detention control.

#### AC9513 New BMP/LID

The proposed project is to treat the rooftop runoff of the West Springfield Elementary School with a bioretention facility to improve the water quality onsite.

### **5.12.2 Non Structural Projects**

#### AC9907 Community Outreach/Public Education - Lawn Care

This project would provide community-wide education and guidance to homeowners on lawn care practices that would potentially reduce pollutants in stormwater runoff. In this WMA, West Springfield and Hunter Village were identified as a potential outreach sites.

#### AC9908 Inspection/Enforcement Enhancement Project - Dumpster Maintenance

One source of litter and pollutants in stormwater runoff is poorly maintained dumpsters and other waste management practices. This project is a community-wide enforcement and outreach approach to properties where problems were identified during the upland reconnaissance. One area in this WMA was flagged with evidence of overflowing grease barrels.

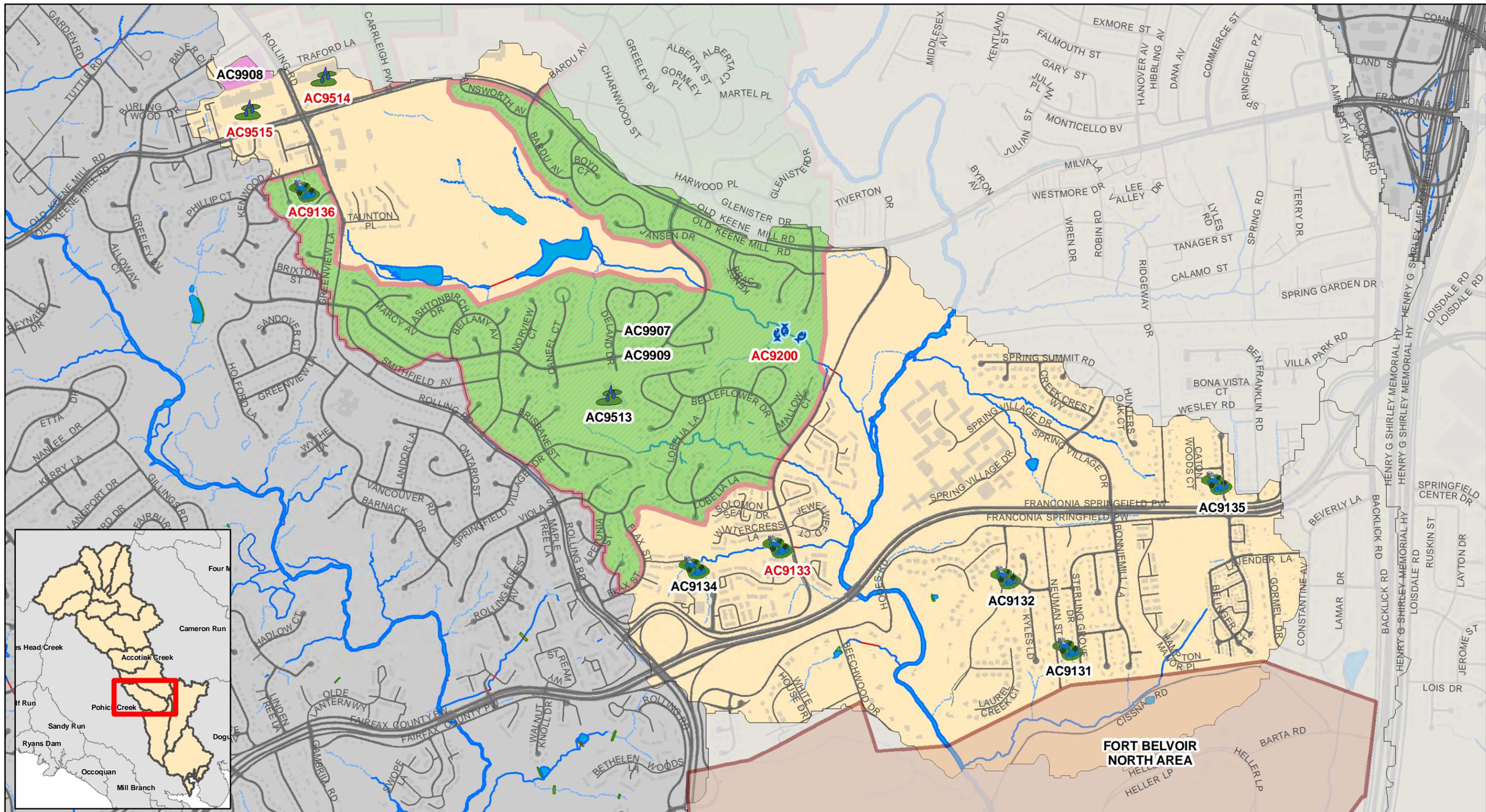
#### AC9909 Rain Barrel Programs - Downspout Disconnect

The upland reconnaissance identified several sites where downspouts were directly connected to storm drains. A watershed-wide outreach program could be beneficial in reducing runoff volume or peak flows. In this WMA, they included the area around Keene Mill Manor, West Springfield and Hunter Village.

**Table 5-12: Mainstem 6 Projects**

<b>Structural Projects</b>						
<b>Project #</b>	<b>Project Type</b>	<b>Subshed</b>	<b>Location</b>	<b>Watershed Benefit</b>	<b>Land Owner</b>	<b>Phase</b>
AC9133	Stormwater Pond Retrofit	AC-AC-0145	Hunter Village neighborhood	Water Quality and Quantity	Private - Residential	1 - 10
AC9136	Stormwater Pond Retrofit	AC-AC-0175	Kenwood Oaks neighborhood	Water Quality and Quantity	Private - Residential	1 - 10
AC9200	Stream Restoration	AC-AC-0160	Downstream from Greeley Blvd / Hunter Village Park	Water Quality	Private / County - FCPA	1 - 10
AC9514	BMP/LID	AC-AC-0170	Cardinal Forest Plaza	Water Quality	Private - Commercial	1 - 10
AC9515	BMP/LID	AC-AC-0175	Old Keene Mill Shopping Center	Water Quality	Private - Commercial	1 - 10
AC9131	Stormwater Pond Retrofit	AC-AC-0135	Bonniemill Acres neighborhood	Water Quality	Private - Residential	11 - 25
AC9132	Stormwater Pond Retrofit	AC-AC-0140	Shirley Springs neighborhood	Water Quality	Private - Residential	11 - 25
AC9134	Stormwater Pond Retrofit	AC-AC-0145	Rolling Forest neighborhood	Water Quality and Quantity	Private - Residential	11 - 25
AC9135	Stormwater Pond Retrofit	AC-AC-0180	Bethnal Pl and Caton Woods Ct	Water Quality and Quantity	Private - Residential	11 - 25
AC9513	BMP/LID	AC-AC-0160	West Springfield Elementary School	Water Quality	County - FCPS	11 - 25
<b>Non-Structural Projects</b>						
<b>Project #</b>	<b>Project Type</b>	<b>Subshed</b>	<b>Location</b>	<b>Watershed Benefit</b>	<b>Land Owner</b>	
AC9908	Inspection/Enforcement Enhancement Project	Multiple	Multiple	Water Quality	Multiple	
AC9909	Rain Barrels	Multiple	Multiple	Water Quality and Quantity	Multiple	
AC9914	Community Outreach/Public Education	Multiple	Multiple	Water Quality	Multiple	

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Miles

- |                              |                          |                                     |  |
|------------------------------|--------------------------|-------------------------------------|--|
| Buffer Restoration           | New Stormwater Pond      | Community Outreach/Public Education | Inspection/Enforcement Enhancement Project |
| Stream Restoration           | Outfall Improvement      | Area-wide Drainage Improvements     | Rain Barrel Programs                       |
| BMP/LID                      | Stormwater Pond Retrofit | Land Conservation Project           | Street Sweeping Program                    |
| Culvert Retrofit             | Other                    | Flood Protection/Mitigation         | Studies, Surveys and Assessments           |
| Dumpsite/Obstruction Removal |                          |                                     |  |

Implementation timeframe denoted by project label color. Red = 0-10 years Black = 11-25 years.

# Map 5.12

WMA: Mainstem 6  
Proposed Projects

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