

**APPENDIX A-2**

**Tier 2 Projects**

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## Candidate Watershed Restoration Projects - Tier 2

<b>Project ID</b>	<b>Subwatershed</b>	<b>Project Name</b>	<b>Location</b>	<b>Proposed Action</b>	<b>Drainage Area (acres)</b>	<b>Estimated Cost</b>
CA9109	Indian Run	Brentleigh SWM Pond Retrofit	Brentleigh Ct & Little River Turnpike	Retrofit SWM pond control structure to improve detention control and add micropool areas in pond bottom to improve water quality.	3.1	\$67,000
CA9110	Indian Run	Wynfield SWM Pond Retrofit	Alpine Dr & Webster Ct	Retrofit SWM pond control structure to improve detention control and add micropool areas in pond bottom to improve water quality.	4.11	\$30,000
CA9125	Tripps Run	Vine Forest Court SWM Pond Retrofit	Vine Forest Ct & Peace Valley Ln	Retrofit SWM pond control structure to improve detention control and add micropool areas in pond bottom to improve water quality; infiltration trench in private road; bioretention area in grassy open space.	2.9	\$70,000
CA9129	Tripps Run	Lee Graham Shopping Center SWM Pond Retrofit	Graham Rd & Lee Hwy	Retrofit SWM pond control structure to improve detention control and add micropool areas in pond bottom to improve water quality.	60.84	\$300,000
CA9135	Holmes Run - Upper	Luria Park - SWM Pond	Dye Dr & Brad St	Develop new "3-cell" stormwater bioretention; linear bioretention areas west along Brad St.	39.1	\$160,000
CA9141	Holmes Run - Upper	Parsons Grove SWM Pond Retrofit	Parsons Grove & Arden St	Retrofit SWM pond control structure to improve detention control and add micropool areas in pond bottom to improve water quality; add three detention micro-berms and bioretention area in flow path from north.	14.8	\$81,000
CA9200	Tributaries to Cameron Run	Mainstem Weir Removal	Off Huntington Avenue	Remove existing weirs that are barriers to fish passage and replace with bed-level grade control structures in the low flow channel; restore natural stream channel morphology to improve hydrologic and ecological function, and prevent in-channel erosion and downstream sedimentation; enhance riparian buffer; and integrate project design with the Huntington Stream Valley Trail, including the use of porous pavers.	0	\$4,700,000
CA9201	Pike Branch	Heritage Hill Stream Restoration	Confluence to Franconia Road	Restore stream channel morphology, stabilize eroding stream banks, enhance riparian buffer, remove invasive species.	0	\$1,800,000
CA9202	Pike Branch	Browne Academy Stream Restoration	Telegraph Road	Restore natural stream channel morphology and riparian buffer. Minimize stream bank erosion.	0	\$1,000,000

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CA9203	Pike Branch	Ridgewood Park Stream Restoration	Ridgewood Park	Restore stream channel morphology, plant enhance riparian buffer, stabilize eroding streambanks, re-establish connection with floodplain.	0	\$1,400,000
CA9204	Backlick Run	Fairfax County Park Authority Stream Restoration	Between confluences of Indian and Turkeycock Runs	Enhance riparian forested buffer. Minimize stream bank erosion and re-establish connection to floodplain.	0	\$1,500,000
CA9205	Backlick Run	Railroad Stream Restoration	Mar Drive, above confluence with Indian Run	Restore natural stream channel morphology and enhance riparian forested buffer. Minimize stream bank erosion and re-establish connection to floodplain.	0	\$850,000
CA9206	Backlick Run	Shirley Industrial Park Stream Restoration	Commercial Drive	Restore natural stream channel morphology and enhance riparian forested buffer. Minimize stream bank erosion and re-establish connection to floodplain.	0	\$60,000
CA9209	Backlick Run	Annandale Acres Stream Restoration	Calvert Street, Clemons Court	Plant 50-foot woody riparian buffer. Add micro-berm in back yards to slow stormwater flow. Stabilize stream banks to minimize erosion.	0	\$1,500,000
CA9211	Turkeycock Run	Turkeycock Run Stream Valley Park Restoration	Turkeycock Run Stream Valley Park	Restore natural stream channel morphology, plant riparian buffer, and reduce streambank erosion.	0	\$1,300,000
CA9212	Turkeycock Run	Hanna Park Stream Restoration	Valley Street	Restore natural stream channel morphology, plant riparian buffer, and reduce streambank erosion.	0	\$1,824,000
CA9213	Turkeycock Run	Autumn Glen Stream Restoration	Autumn Cove Court	Restore natural stream channel morphology, plant riparian buffer, and reduce streambank erosion.	0	\$562,000
CA9214	Turkeycock Run	Kings Mill Stream Restoration	Kings Mill Lane	Restore natural stream channel morphology, plant riparian buffer, reduce streambank erosion.	0	\$640,000
CA9215	Turkeycock Run	Mason District Park Stream Restoration - B	Mason District Park	Restore natural stream channel morphology, reconnect floodplain, enhance riparian buffer, and reduce stream bank erosion.	0	\$550,000
CA9217	Turkeycock Run	Mason District Park Stream Restoration - C	Mason District Park	Restore natural stream channel morphology, plant riparian buffer, reduce streambank erosion.	0	\$1,300,000
CA9218	Holmes Run - Lower	Holmes Run Park Stream Restoration	Holmes Run Park	Stabilize stream channel and prevent bank erosion, remove trash.	0	\$2,100,000

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CA9219	Tripps Run	JEB Stuart Park Riparian Buffer	JEB Stuart Park	Remove English Ivy and other invasive plant species; reforest mowed areas; remove log check dam; stabilize toe of several very steep banks with local wood found in/near stream; and off-line bioretention area at Peace Valley Ln outfall.	25.65	\$300,000
CA9220	Tripps Run	Lake Backwater Stream Restoration	Potterton Drive	Re-establish flow channel, enhance wetland plantings.	0	\$1,800,000
CA9221	Tripps Run	Sleepy Hollow Manor Stream Restoration	Sleepy Hollow Road (3100)	Mitigate channelization, re-establish channel connection with floodplain, reduce bank erosion, enhance riparian buffer.	0	\$800,000
CA9222	Tripps Run	Westlawn Stream Restoration	Barrett Rd Road, Mosby	Re-establish natural stream channel and floodplain, plant riparian buffer.	0	\$1,900,000
CA9223	Tripps Run	Jefferson Village Altered Channel Mitigation	Adams Place, Monroe Place	Dissipate flow energy, re-establish channel connection with floodplain, reduce bank and bed erosion, enhance riparian buffer.	0	\$1,100,000
CA9224	Tripps Run	Devonshire Gardens Stream Restoration	Rosemary Lane	Dissipate flow energy, re-establish channel connection with floodplain, reduce bank and bed erosion, enhance riparian buffer.	0	\$1,500,000
CA9225	Tripps Run	Lee Stream Bank Stabilization	Maple Street	Restore natural stream channel morphology and floodplain connections; enhance riparian buffer; and upgrade road culverts to convey bankfull discharge and sediment load, and provide floodplain drainage.	0	\$1,255,000
CA9227	Holmes Run - Upper	Lakeview Stream Restoration	Lakeview Drive	Stabilize stream channel to prevent erosion, enhance riparian buffer.	0	\$500,000
CA9228	Holmes Run - Upper	Crosswoods Stream Restoration	Crosswoods Drive	Restore natural stream channel morphology, enhance riparian buffer.	0	\$1,000,000
CA9229	Holmes Run - Upper	Holmes Run Stream Valley Park Restoration - B	Ivydale Drive	Restore natural stream channel morphology, enhance riparian buffer, reconnect floodplain.	0	\$1,000,000
CA9230	Holmes Run - Upper	Tansey Stream Restoration	Tansey Drive	Stabilize stream channel to prevent erosion, enhance riparian buffer.	0	\$400,000

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CA9231	Holmes Run - Upper	Holmes Run Stream Valley Park Restoration - A	Holmes Run Stream Valley Park, Joel Drive	Restore natural stream channel morphology, enhance riparian buffer, reduce bank erosion, reconnect floodplain.	0	\$900,000
CA9232	Holmes Run - Upper	Luria Park Stream Restoration	Luria Park	Restore natural stream channel morphology, consolidate multiple channels, stabilize banks, and enhance riparian buffer.	0	\$600,000
CA9233	Holmes Run - Upper	Willow Point Stream Restoration	Willow Point Drive	Restore natural stream channel morphology, stabilize banks, and enhance riparian buffer.	0	\$1,200,000
CA9234	Holmes Run - Upper	Idylwood Stream Restoration	Idylwood Road	Restore stream channel morphology; and upgrade road culverts to convey bankfull discharge and sediment load, and provide floodplain drainage.	0	\$533,000
CA9235	Backlick Run	Backlick Run Stream Restoration	Backlick Stream Valley Park	Restore natural stream channel morphology, protect adjacent railroad grade, and enhance riparian buffer.	0	\$910,000
CA9236	Turkeycock Run	Pinecrest Park Stream Restoration	Pinecrest Park at Braddock Road	Restore natural stream channel morphology and floodplain connections; enhance riparian buffer; and upgrade Braddock Road culverts to convey bankfull discharge and sediment load, and provide floodplain drainage.	0	\$1,399,000
CA9800	Tributaries to Cameron Run	Huntington Metro LID	Kings Highway & Shady Oak Dr	Install infiltration trenches in bus and car parking areas; and install two bioretention areas in traffic islands on S side of Huntington Ave.	6.5	\$75,000
CA9801	Tributaries to Cameron Run	Blane Drive LID	Blane Drive	Construct bioretention area in traffic island	3.2	\$125,000
CA9803	Pike Branch	Post Office LID - A	Kings Highway & Fort Dr	Provide infiltration trench along roadway, between parking rows, and along N and W sides; add bioretention areas to traffic islands in front parking lot.	3	\$52,000
CA9814	Pike Branch	Rose Hill Shopping Center LID	Rose Hill Dr and Franconia Rd	Add infiltration trenches in parking lot rows; linear bioretention areas behind building and along Franconia Rd; and bioretention areas in traffic islands in parking lot.	12.7	\$120,000
CA9815	Pike Branch	Post Office LID - B	Franconia Rd & Rose Hill Dr	Infiltration trenches should be installed along parking rows in W lot. Porous pavement should be used in vehicle parking area and front lot. Linear bioretention area along E side of property.	3.4	\$123,000

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CA9816	Pike Branch	Park Terrace Traffic Circle LID	Park Terrace	Redirect road drainage to bioretention area on north side of traffic circle; retain large trees in southern part of circle.	7.8	\$263,000
CA9819	Tributaries to Cameron Run	Towanda Road LID	Towanda Rd	Provide tree box insert in storm drain inlet.	3.9	\$12,000
CA9820	Tributaries to Cameron Run	Lakota Road LID	Lakota Rd	Provide tree box insert in storm drain inlets.	2.8	\$18,000
CA9826	Backlick Run	Franconia Station LID	Franconia Rd and Wild Way	Install infiltration trenches along parking rows and tree box filters at inlets.	2.04	\$90,000
CA9831	Backlick Run	Edsall Park Subdivision LID	Edsall Park Subdivision at Edsall Rd	Install tree box filters throughout neighborhood.	61.8	\$138,000
CA9833	Backlick Run	Bradlick Shopping Center LID	Braddock Rd & Backlick Rd	Incorporate infiltration trenches throughout parking lot and tree box filters at inlets.	11.8	\$147,000
CA9840	Backlick Run	Trailside Park LID	Trailside Park on Stagecoach St	Construct bioretention areas at two stormwater pipe outfalls; incorporate trash collection device/program to minimize trash from I-95	6.1	\$316,000
CA9841	Backlick Run	Lynbrook Subdivision LID - B	Edgebrook Dr and Backlick Rd	Enhance depressed median to improve bioretention functions.	3.7	\$317,000
CA9845	Backlick Run	Appomattox Court LID	Appomattox Ct and Leesburg Blvd	Convert traffic island at Appomattox Ct to bioretention area; construct infiltration trenches in median strip on Leesburg Blvd; and tree box filters in two curb inlets.	3.5	\$159,000
CA9847	Backlick Run	St. Johns Methodist Church LID	Woodland Dr and Backlick Rd	Construct bioretention areas in woods S of parking lot; add infiltration trenches along parking lot margins.	2	\$52,000
CA9864	Turkeycock Run	Bren Mar Park LID	Bren Mar Park	Redirect runoff from parking lots, courts, and Edsall Rd. to bioretention areas; expand capacity of possible existing bioretention area in parking lot median strip.	4.8	\$166,000
CA9865	Turkeycock Run	Plaza at Landmark LID	Little River Turnpike & Bearegard St	Development of parking lot islands into bioretention areas. Infiltration trenches under all parking areas. Replace inlets with tree box filters.	7.9	\$218,000
CA9880	Holmes Run - Lower	Culmore Subdivision LID	Glen Carlyn Drive - median	Construct linear bioretention areas in four median islands between traffic lanes.	1.8	\$253,000

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CA9881	Holmes Run - Lower	Culmore Shopping Center - Post Office LID	Culmore Shopping Center - Post Office	Create infiltration trenches and linear bioretention strips along parking rows; and bioretention areas in landscape/traffic islands.	6.4	\$60,000
CA9883	Tripps Run	Munson Hill Towers LID	Munson Hill Towers - Leesburg Pike	Bioretention areas in parking lots - along edges and down center of rows; detention micro-berm along S side of property.	13	\$90,000
CA9888	Tripps Run	Anna Lee Traffic Island LID - D	Driver Circle	Depress area of traffic islands and plant bioretention area.	4.7	\$96,000
CA9889	Tripps Run	Anna Lee Traffic Island LID - B	Glenroy Circle	Depress area of traffic island and plant bioretention area.	3	\$15,000
CA9890	Tripps Run	Anna Lee Traffic Island LID - C	Chepstown La & Kenfig Dr	Depress area of traffic island and plant bioretention area.	3.9	\$20,000
CA9891	Tripps Run	Anna Lee Traffic Island LID - A	Kenfig Dr	Depress area of traffic island and plant bioretention area.	3.5	\$8,000
CA9893	Tripps Run	Sleepy Hollow Traffic Island LID - C	Crane Dr	Depress area of traffic island and plant bioretention area.	5.8	\$86,000
CA9894	Tripps Run	Sleepy Hollow Traffic Island LID - B	Beechwood Lane	Depress area of traffic island and plant bioretention area.	2.8	\$20,000
CA9895	Tripps Run	Sleepy Hollow Traffic Island LID - A	Ichabod Place	Depress area of traffic island and plant bioretention area.	1	\$37,000
CA9896	Tripps Run	Sleepy Hollow Traffic Island LID - D	Quinch Pl	Depress area of traffic island and plant bioretention area.	6.4	\$48,000
CA9898	Tripps Run	Mosby Post Office LID	Westlawn Shopping Center - Annandale Rd & RT 50	Bioretention areas along center of 4 parking rows, edge of lot parallel to Tripps Run, and in traffic island along Rt 50.	3.05	\$90,000
CA9902	Tripps Run	Greenway Downs Subdivision LID	Greenway Blvd	Curbside bioretention areas.	20.19	\$135,000

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CA9903	Tripps Run	Devonshire Gardens Subdivision LID	Woodlawn Ave & Custis Pkwy	Bioretention areas in median between traffic lanes on Woodlawn Ave.	12.88	\$90,000
CA9905	Tripps Run	Great Oak LID	Raymond Ct	Divert discharge to bermed bioretention area.	13.61	\$15,000
CA9907	Tripps Run	George Mason Middle & High Schools LID	George Mason Middle & High Schools	Infiltration trenches in parking lots; linear and area bioretention areas in traffic islands; multi-sport artificial turf with underdrains and cisterns in center of track.	35.2	\$748,000
CA9910	Holmes Run - Upper	Belvedere Subdivision LID	Pinewood Terrace and Lakewood Drive	Replace 4 inlets along road with tree box filters.	21.2	\$76,000
CA9912	Holmes Run - Upper	Buckwood LID	Sleepy Hollow Rd & Fern La	Install off-line bioretention areas to capture end of pipe stormwater prior to entering the stream.	0.5	\$29,000
CA9913	Holmes Run - Upper	Chanel Road LID	Chanel Rd & Elwood Dr.	Install off-line bioretention area to capture end of pipe stormwater prior to entering the stream.	4.9	\$30,000
CA9915	Holmes Run - Upper	Columbia Pines Subdivision - Rose Ln LID	Rose Lane (south of Holmes Run) - Chapter 2 street	Construct off-line bioretention area at stormwater pipe outfall in Chapter 2 street	2.5	\$52,000
CA9916	Holmes Run - Upper	Valley Brook Subdivision LID	Rose Lane (north of Holmes Run) - Chapter 2 street	Construct off-line bioretention areas in Chapter 2 street and a bioretention area at N side of corner of Slade Run and Rose Ln	9.7	\$244,000
CA9920	Holmes Run - Upper	Mildred Drive LID - A	Elvira Ct & Mildred Dr	Install off-line bioretention area to capture end of pipe stormwater prior to entering the stream.	2.4	\$125,000
CA9923	Holmes Run - Upper	Latter Day Saints - Parking Lot LID	Latter Day Saints, off Gallows Road	Install bioretention areas (linear and area) and infiltration trenches in parking lots.	4.7	\$132,000
CA9924	Holmes Run - Upper	Mildred Drive LID - B	Mildred Dr & Elvira Ct	Install off-line bioretention areas to capture end of pipe stormwater prior to entering the stream.	14.2	\$920,000
CA9926	Holmes Run - Upper	Round Tree Park LID - B	Vagabond Dr & Roundtree Rd	Install off-line bioretention areas to capture end of pipe stormwater and area bioretention areas at end of street.	16.1	\$230,000
CA9928	Holmes Run - Upper	Raymondale LID - B	Brandy Court	Install linear bioretention areas in sidewalk median strips and replace two inlets with tree box filters.	2.5	\$65,000
CA9930	Holmes Run - Upper	Raymondale LID - A	Roundtree Estates Court	Install linear bioretention areas in sidewalk median strips.	3.3	\$24,000

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CA9931	Holmes Run - Upper	Raymondale Sidewalk LID	Brandy Ct and St James Pl	Construct sidewalk bioretention areas along roads.	7	\$419,000
CA9932	Holmes Run - Upper	Broyhill Park Subdivision LID - D	Broyhill Park Subdivision - Dye Dr and Marc Dr	Construct sidewalk bioretention areas along roads and in traffic island at Marc Dr/Graham Rd/Strathmore St.	5.27	\$180,000
CA9933	Holmes Run - Upper	Broyhill Park Subdivision LID - B	Broyhill Park Subdivision - Nealon Dr	Construct sidewalk bioretention areas along roads.	9.1	\$142,000
CA9934	Holmes Run - Upper	Broyhill Park Subdivision LID - C	Broyhill Park Subdivision - Norfolk Ln	Construct sidewalk bioretention areas along roads.	8	\$374,000
CA9939	Holmes Run - Upper	Broyhill Park Subdivision LID - A	Broyhill Park Subdivision - Kenney Drive	Construct sidewalk bioretention areas along roads.	7.3	\$75,000
CA9940	Holmes Run - Upper	Broyhill Park Subdivision LID - E	Parkwood Terrace	Construct sidewalk bioretention areas along roads.	4.97	\$46,000
CA9948	Holmes Run - Upper	Loehmann's Plaza LID	Loehmann's Plaza, Arlington Blvd	Install infiltration trenches along parking rows and in alleys between buildings; add bioretention areas at front and rear of courtyard near County offices.	20.8	\$158,000
CA9951	Holmes Run - Upper	Hollywood Road Park LID	Fairwood Ln & West St	Provide off-line bioretention at pipe outfall and a linear bioretention area along Hollywood Rd.	31.8	\$222,000
CA9956	Holmes Run - Upper	Dunn Loring Post Office LID	Dunn Loring Post Office - Gallows Rd & Electric Av	Provide linear bioretention area along edge of parking lot by Electric Ave; infiltration trenches in W and E parking areas, and along N side of bldg.	0.3	\$32,000
CA9963	Holmes Run - Upper	Walnut Hill Lane LID	Walnut Hill La & Annandale Rd	Replace inlets along road with tree box filters; filter strip and bioretention area N of traffic circle; revegetate open areas with shade trees and wildflowers.	24.2	\$93,000

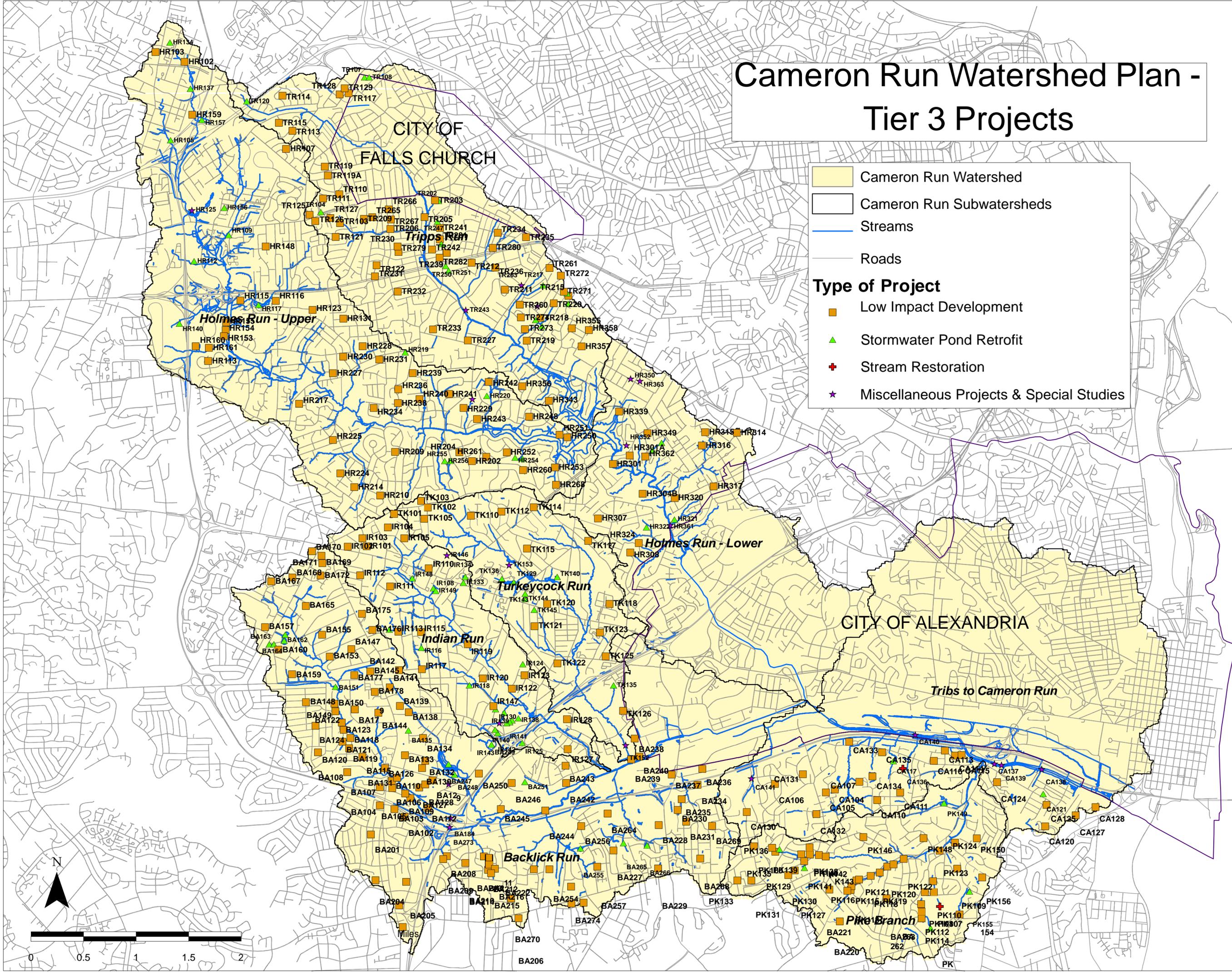
**APPENDIX A-3**

**Tier 3 Projects**

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# Cameron Run Watershed Plan - Tier 3 Projects

Cameron Run Watershed  
 Cameron Run Subwatersheds  
 Streams  
 Roads  
**Type of Project**  
 Low Impact Development  
 Stormwater Pond Retrofit  
 Stream Restoration  
 Miscellaneous Projects & Special Studies



PK117

PK  
10  
6  
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K1  
03

PK101

## Candidate Watershed Restoration Projects - Tier 3

Site ID	Project Type	Proposed Action
<b>Backlick Run</b>		
BA102	Low Impact Development	Curb Gardens, Rain Barrels
BA103	Low Impact Development	Tree Boxes
BA104	Low Impact Development	Rain Garden
BA105	Low Impact Development	End of Pipe Rain Garden
BA106	Low Impact Development	Filter Strips, Median Gardens or Dry Pond
BA107	Low Impact Development	Tree Boxes, End of Pipe Rain gardens, Filter Strips
BA108	Low Impact Development	Green Roof, Median Gardens, End of Pipe
BA109	Low Impact Development	End of Pipe Rain Garden
BA110	Low Impact Development	End of Pipe Rain Garden
BA112	Low Impact Development	Dry Pond
BA115	Low Impact Development	Curb Gardens, Rain Barrels
BA118	Low Impact Development	End of Pipe Rain Garden
BA119	Low Impact Development	Curbside rain gardens
BA120	Low Impact Development	Curbside rain gardens
BA121	Low Impact Development	End of Pipe Rain Garden
BA122	Low Impact Development	End of Pipe Rain Garden
BA123	Low Impact Development	End of Pipe Rain Garden
BA124	Low Impact Development	Curbside rain gardens
BA126	Low Impact Development	End of Pipe Rain Garden
BA127	Low Impact Development	Green Roof
BA128	Low Impact Development	Area Drain Inserts, Median Gardens
BA129	Low Impact Development	Filter/Infiltration Trench
BA130	Low Impact Development	Green Roof
BA131	Low Impact Development	End of Pipe Rain Garden
BA132	Low Impact Development	Median Gardens, Trenches
BA133	Low Impact Development	Green Roofs, Filter Trenches
BA134	Low Impact Development	Median Gardens, Rain Barrels
BA135	Stormwater Pond Retrofit	Dry Pond
BA138	Low Impact Development	Median Garden
BA139	Low Impact Development	Median Gardens, Filter Strips
BA141	Low Impact Development	Median Gardens
BA142	Low Impact Development	Infiltration Trench
BA144	Low Impact Development	End of Pipe Rain Garden
BA145	Low Impact Development	Median Gardens, Rain Gardens
BA147	Low Impact Development	Rain Gardens, Curb Gardens
BA148	Low Impact Development	Rain Barrels, Curb Gardens
BA149	Low Impact Development	End of Pipe Rain Garden
BA150	Low Impact Development	End of Pipe Rain Garden
BA151	Stormwater Pond Retrofit	Dry Pond
BA153	Low Impact Development	Rain Gardens
BA155	Low Impact Development	Rain Gardens, Rain Barrels
BA157	Low Impact Development	Parking Lot Rain Gardens
BA159	Low Impact Development	Rain Barrels, Curb Rain Gardens

<b>Site ID</b>	<b>Project Type</b>	<b>Proposed Action</b>
BA160	Low Impact Development	Rain Barrels, Curb Rain Gardens
BA161	Stormwater Pond Retrofit	SWM Pond Retrofits
BA162	Stormwater Pond Retrofit	SWM Pond Retrofits
BA163	Stormwater Pond Retrofit	SWM Pond Retrofits
BA164	Stormwater Pond Retrofit	SWM Pond Retrofits
BA165	Low Impact Development	Roof Drains to Rain Gardens; Curb Rain Gardens
BA167	Low Impact Development	Rain Barrels and Sidewalk Rain Gardens
BA168	Low Impact Development	Rain Barrels, Yard Drains to Rain Gardens, Curb Rain Gardens
BA169	Low Impact Development	Roof Drains to Rain Gardens; Curb Rain Gardens
BA170	Low Impact Development	Roof Drains to Rain Gardens; Curb Rain Gardens
BA171	Low Impact Development	Roof Drains to Rain Gardens; Curb Rain Gardens
BA172	Low Impact Development	Rain Barrels, Yard Drains to Rain Gardens, Curb Rain Gardens
BA175	Low Impact Development	Rain Barrels; Sidewalk, Curb and Yard Drain Rain Gardens
BA176	Low Impact Development	Rain Barrels; Sidewalk, Curb and Yard Drain Rain Gardens
BA177	Low Impact Development	Green Roof, Cistern, Rain Gardens
BA178	Low Impact Development	Rain Barrels; Sidewalk, Curb and Yard Drain Rain Gardens
BA179	Low Impact Development	Rain Barrels; Rain Gardens at End of Pipe and Downspout
BA182	Other	Implement Pollution Prevention Programs; Control Runoff of Toxics
BA184	Other	Provide Additional Control of Highway Runoff at I-495 and I-395
BA201	Low Impact Development	Curb Gardens, Rain Barrels, Rain Gardens
BA204	Low Impact Development	Rain Gardens
BA205	Low Impact Development	Filter Strips, Infiltration Trench
BA206	Low Impact Development	Info Car Dealer - Porous Pavement
BA208	Low Impact Development	Berm with Gardens
BA209	Low Impact Development	End of Pipe Rain Garden
BA210	Low Impact Development	Curb Gardens, Rain Barrels
BA211	Low Impact Development	Rain Garden
BA212	Low Impact Development	End of Pipe Rain Garden
BA213	Low Impact Development	End of Pipe Rain Garden
BA214	Low Impact Development	End of Pipe Rain Garden
BA215	Low Impact Development	End of Pipe Rain Garden
BA216	Low Impact Development	End of Pipe Rain Garden
BA220	Low Impact Development	Curb Gardens, Rain Barrels
BA221	Low Impact Development	Curb Gardens, Rain Barrels
BA222	Low Impact Development	End of Pipe Rain Garden
BA227	Low Impact Development	Rain Garden
BA228	Low Impact Development	Rain Gardens
BA229	Low Impact Development	Retrofit Detention into Cistern to Water Fields
BA230	Low Impact Development	Paved Ditch into Grass Swale
BA231	Low Impact Development	Rain Barrel, Rain Gardens
BA234	Low Impact Development	Berm with Gardens
BA235	Low Impact Development	End of Pipe Rain Garden
BA236	Low Impact Development	Infiltration Ditches
BA237	Low Impact Development	Porous Pavement
BA238	Low Impact Development	Green Roof

<b>Site ID</b>	<b>Project Type</b>	<b>Proposed Action</b>
BA239	Low Impact Development	Filter Strips
BA240	Low Impact Development	Filter Berms
BA242	Low Impact Development	Green Roof, Median Gardens, Berms
BA243	Low Impact Development	Curb Gardens, Rain Barrels
BA244	Low Impact Development	Detention/ Rain Garden
BA245	Low Impact Development	Detention/ Rain Garden
BA246	Low Impact Development	Green Roofs, Infiltration
BA247	Stormwater Pond Retrofit	SWM Pond retrofits
BA248	Stormwater Pond Retrofit	SWM Pond retrofits
BA249	Stormwater Pond Retrofit	SWM Pond retrofits
BA250	Low Impact Development	Green Roof: Downspout and Traffic Island/Curb Rain Gardens with Infiltration
BA251	Stormwater Pond Retrofit	SWM Pond retrofit
BA254	Low Impact Development	Rain barrels; Sidewalk Rain Gardens
BA255	Stormwater Pond Retrofit	SWM Pond Retrofit
BA256	Low Impact Development	Rain Barrels; Sidewalk and Curb Rain Gardens
BA257	Low Impact Development	Rain Barrels; Sidewalk and Curb Rain Gardens
BA262	Low Impact Development	Downspout, Curb, Median and Island Rain Gardens
BA263	Low Impact Development	Downspout, Curb, Median and Island Rain Gardens
BA264	Low Impact Development	Rain Barrels; Sidewalk and Curb Rain Gardens
BA265	Stormwater Pond Retrofit	SWM Pond Retrofit
BA266	Stormwater Pond Retrofit	SWM Pond Retrofit
BA268	Low Impact Development	Rain Barrels; Sidewalk and Curb Rain Gardens
BA269	Low Impact Development	Rain Barrels; Sidewalk and Curb Rain Gardens
BA270	Low Impact Development	Green Roof; Downspout, Curb, Median, and Island Rain Gardens
BA273	Other	Work with VDOT to Provide Additional SWM Controls for I395 and I495
BA274	Low Impact Development	Rain Barrels; Sidewalk and Curb Rain Gardens
<b>Holmes Run - Lower</b>		
HR201	Stormwater Pond Retrofit	End of pipe - 1-yr EDD or rain garden
HR202	Low Impact Development	Grass median, rain garden, rain barrels
HR204	Low Impact Development	Backyard retention/rain garden/barrels
HR209	Low Impact Development	Curbside rain gardens
HR210	Low Impact Development	Filter strips, contours, and rain gardens
HR214	Low Impact Development	Rain barrels/gardens, curb gardens
HR217	Low Impact Development	Tree boxes, rain barrels, curb gardens
HR219	Stormwater Pond Retrofit	Pond retrofit
HR220	Stormwater Pond Retrofit	Pond retrofit
HR224	Low Impact Development	Island gardens
HR225	Low Impact Development	Rain barrels, sidewalk and curb gardens
HR227	Low Impact Development	Rain barrels, sidewalk and curb gardens
HR228	Low Impact Development	Church parking lot retrofit, curb rain garden
HR229	Low Impact Development	Church parking lot retrofit, curb rain garden
HR230	Low Impact Development	Rain barrels, sidewalk and curb gardens
HR231	Low Impact Development	Rain barrels, sidewalk and curb gardens
HR234	Low Impact Development	Yard draining to rain garden with under drains, rain barrels, curb rain garden

<b>Site ID</b>	<b>Project Type</b>	<b>Proposed Action</b>
HR236	Low Impact Development	Sidewalk rain garden and rain barrels
HR238	Low Impact Development	Sidewalk and curb rain gardens
HR239	Low Impact Development	Sidewalk and curb rain gardens
HR240	Low Impact Development	Rain barrels, sidewalk, and curb gardens
HR241	Low Impact Development	Yard drains to rain garden with under drains; rain barrels; curb and sidewalk rain gardens
HR242	Low Impact Development	Yard drains to rain garden with under drains; rain barrels; curb and sidewalk rain gardens; paved ditches to linear rain garden with cells
HR243	Low Impact Development	Rain barrels, curb rain garden
HR246	Other	Purchase 10 acre Glavis property for conservation
HR248	Low Impact Development	Rain barrels, rain garden
HR250	Low Impact Development	Backyard rain garden
HR251	Low Impact Development	Berm backyards
HR252	Low Impact Development	Street grass swale rain gardens
HR253	Low Impact Development	End of pipe rain garden
HR254	Stormwater Pond Retrofit	End of pipe - 1-yr EDD or rain garden
HR255	Stormwater Pond Retrofit	End of pipe - 1-yr EDD or rain garden
HR256	Stormwater Pond Retrofit	End of pipe - 1-yr EDD or rain garden
HR260	Low Impact Development	Grass median, rain garden, rain barrels
HR261	Low Impact Development	Backyard retention/rain garden/barrels
HR268	Low Impact Development	End of pipe rain garden
HR301	Low Impact Development	Extended retrofit, green roof, tree boxes
HR301A	Low Impact Development	Rain garden
HR304B	Low Impact Development	Strip filter in parking lot
HR307	Low Impact Development	Tree boxes at storm drain inlets
HR308	Low Impact Development	End of pipe rain garden
HR311	Stormwater Pond Retrofit	Pond Retrofit
HR312	Stormwater Pond Retrofit	Retention before pipe
HR314	Low Impact Development	Rain garden
HR315	Low Impact Development	Swale gardens or rain barrels
HR316	Low Impact Development	Dry pond rain garden
HR317	Low Impact Development	Swale Rain gardens
HR320	Low Impact Development	Rain barrels/rain gardens
HR321	Stormwater Pond Retrofit	New dry pond
HR322	Stormwater Pond Retrofit	Redirect stream into dry pond
HR324	Low Impact Development	Rain barrels
HR339	Low Impact Development	End of pipe rain garden - bacteria sewer tracking
HR343	Low Impact Development	Rain barrels, rain garden
HR349	Low Impact Development	Downspout and parking lot rain garden
HR350	Other	Signage and outreach on hazardous waste collections, especially motor oil disposal
HR352	Other	Marshall property dump site - inspection clean up
HR355	Low Impact Development	Sidewalk rain garden, rain barrels, tree box filters
HR356	Low Impact Development	Rain barrels and rain gardens
HR357	Low Impact Development	Green roof or route drainage to park via: cistern to water fields and park; infiltration; 1-year EDD

<b>Site ID</b>	<b>Project Type</b>	<b>Proposed Action</b>
HR358	Low Impact Development	Parking lot retrofit with: infiltration trench and rain gardens; cistern for building
HR360	Stormwater Pond Retrofit	Pond retrofit
HR361	Other	Extend stream valley park and trail to close last gap between parks
HR362	Low Impact Development	Outfall rain garden
HR363	Other	Signage and outreach on hazardous waste collections, especially motor oil disposal

### **Holmes Run - Upper**

HR102	Low Impact Development	End of pipe rain garden
HR103	Low Impact Development	Parking lot retrofits
HR105	Stormwater Pond Retrofit	End of pipe/dry pond
HR107	Low Impact Development	Rain barrels/gardens
HR109	Stormwater Pond Retrofit	Dry pond - off to side of main stream
HR112	Stormwater Pond Retrofit	Side discharge pond
HR113	Low Impact Development	Tree boxes, rain barrels
HR115	Low Impact Development	Overflow stream retention
HR116	Low Impact Development	Dry pond/tree boxes
HR117	Stormwater Pond Retrofit	BMP retrofit to increase retention quantity
HR123	Low Impact Development	Retention
HR125	Other	Locate dump site and clean up; provide information on collections
HR131	Low Impact Development	Sidewalk strip retention/rain barrels
HR134	Stormwater Pond Retrofit	Pond retrofit
HR137	Stormwater Pond Retrofit	Pond retrofit
HR140	Stormwater Pond Retrofit	Pond retrofit
HR148	Low Impact Development	Sidewalk strip retention/rain barrels
HR153	Low Impact Development	End of pipe retention/rain garden
HR154	Low Impact Development	End of pipe retention/rain garden
HR155	Low Impact Development	End of pipe retention/rain garden
HR156	Stormwater Pond Retrofit	End of pipe/dry pond
HR157	Stormwater Pond Retrofit	End of pipe/dry pond
HR159	Low Impact Development	End of pipe rain garden
HR160	Low Impact Development	End of pipe retention/rain garden
HR161	Low Impact Development	End of pipe retention/rain garden

### **Indian Run**

IR101	Low Impact Development	Green Roof (K-Mart)
IR102	Low Impact Development	Green Roof (Giant)
IR103	Low Impact Development	Filter Strips, Island Gardens
IR104	Low Impact Development	Roof Retrofit, Cistern
IR105	Low Impact Development	Grass Swale, Rain Gardens, Rain Barrels
IR108	Stormwater Pond Retrofit	Detention Pond Upgrade
IR110	Low Impact Development	Rain Barrels, Rain Gardens
IR111	Low Impact Development	Rain Barrels, Rain Gardens
IR112	Low Impact Development	Curb Gardens, Rain Barrels, Tree Boxes
IR113	Low Impact Development	Pre Pipe Rain Garden
IR115	Low Impact Development	Rain Gardens, Rain Barrels
IR116	Stormwater Pond Retrofit	End of Pipe Retention

<b>Site ID</b>	<b>Project Type</b>	<b>Proposed Action</b>
IR117	Low Impact Development	Tree Boxes, Curb Gardens, Rain Barrels
IR118	Stormwater Pond Retrofit	End of Pipe Retention
IR119	Low Impact Development	Backyard Rain Gardens
IR120	Low Impact Development	Rain Gardens
IR122	Low Impact Development	End of Pipe Rain Garden
IR123	Low Impact Development	Curb Gardens, Rain Barrel
IR124	Stormwater Pond Retrofit	Retention Pond
IR125	Stormwater Pond Retrofit	SWM Pond Retrofit
IR127	Low Impact Development	Sidewalk Rain Gardens, Curb Rain Gardens, Rain Barrels
IR128	Low Impact Development	Sidewalk Rain Gardens, Curb Rain Gardens, Rain Barrels
IR130	Stormwater Pond Retrofit	Pond retrofits
IR133	Stormwater Pond Retrofit	SWM Pond Retrofit
IR134	Stormwater Pond Retrofit	SWM Pond Retrofit
IR135	Stormwater Pond Retrofit	SWM Pond Retrofit
IR137	Stormwater Pond Retrofit	SWM Pond Retrofit
IR138	Stormwater Pond Retrofit	SWM Pond Retrofit
IR139	Stormwater Pond Retrofit	SWM Pond Retrofit
IR140	Stormwater Pond Retrofit	SWM Pond Retrofit
IR141	Stormwater Pond Retrofit	SWM Pond Retrofit
IR142	Stormwater Pond Retrofit	SWM Pond Retrofit
IR143	Stormwater Pond Retrofit	SWM Pond Retrofit
IR145	Other	Investigate Status of Atlantic Research Site for Potential Pollution Source to Indian Run and Opportunities to Improve Water Quality from Site
IR146	Other	Review Dog Park Management for Opportunities to Improve Water Quality
IR147	Low Impact Development	Island Gardens, Curb Gardens
IR148	Stormwater Pond Retrofit	Retrofit
IR149	Stormwater Pond Retrofit	Detention Pond Upgrade
<b>Pike Branch</b>		
PK101	Low Impact Development	End of Pipe Rain Garden/Detention
PK102	Stream Restoration	Tree Planting
PK103	Stormwater Pond Retrofit	Dry Pond/Rain Gardens
PK104	Low Impact Development	End of Pipe Rain Gardens
PK105	Low Impact Development	End of Pipe Rain Gardens
PK106	Low Impact Development	End of Pipe Rain Gardens
PK107	Low Impact Development	End of Pipe Rain Gardens
PK108	Low Impact Development	Rain Garden
PK109	Low Impact Development	Curb Gardens/Rain Barrels
PK110	Low Impact Development	Property Berms
PK112	Low Impact Development	End of Pipe Trench
PK113	Low Impact Development	End of Pipe Trench
PK114	Low Impact Development	End of Pipe Trench
PK115	Low Impact Development	Tree Box
PK116	Low Impact Development	End of Pipe Trench
PK117	Low Impact Development	Tree Boxes, Rain Barrels, Rain Gardens, Curb Gardens
PK118	Low Impact Development	End of Pipe Rain Garden

<b>Site ID</b>	<b>Project Type</b>	<b>Proposed Action</b>
PK119	Low Impact Development	End of Pipe Rain Garden
PK120	Low Impact Development	End of Pipe Rain Garden
PK121	Low Impact Development	End of Pipe Rain Garden
PK122	Low Impact Development	End of Pipe Rain Garden
PK123	Low Impact Development	End of Pipe Rain Garden
PK124	Low Impact Development	End of Pipe Rain Garden
PK127	Low Impact Development	Rain barrels, Curb Garden, Tree Boxes
PK129	Low Impact Development	Rain barrels, Curb Garden, Tree Boxes
PK130	Low Impact Development	School - Rain Garden/Cistern - Water Fields, Median Garden, Filter Strips
PK131	Low Impact Development	Rain Gardens, Filter Strips
PK133	Low Impact Development	Rain Garden, Rain Barrels
PK135	Low Impact Development	End of Pipe - Rain Garden
PK136	Low Impact Development	Filter Strips
PK137	Stormwater Pond Retrofit	Pond
PK138	Low Impact Development	Rain Barrels, Curb Garden
PK139	Low Impact Development	End of Pipe Rain Garden
PK140	Low Impact Development	End of Pipe Rain Garden
PK141	Low Impact Development	End of Pipe Rain Garden
PK142	Low Impact Development	End of Pipe Rain Garden
PK143	Low Impact Development	End of Pipe Rain Garden
PK146	Low Impact Development	Rain Barrels/Rain Gardens
PK148	Low Impact Development	Curbside rain gardens
PK149	Stormwater Pond Retrofit	Retrofit Pond
PK150	Low Impact Development	Rain Gardens/Barrels, Storm Drain Stenciling
PK152	Stormwater Pond Retrofit	1-yr EDD
PK154	Low Impact Development	Curb Gardens/Rain Barrels
PK155	Stormwater Pond Retrofit	Off Line EDD
PK156	Low Impact Development	Green Roof: Downspout and Curb Rain Gardens
PK160	Low Impact Development	Green Roof: Downspout and Curb Rain Gardens
<b>Tributaries to Cameron Run</b>		
CA104	Low Impact Development	Grass Swale Infiltration Trench
CA105	Low Impact Development	Rain Garden
CA106	Low Impact Development	Rain Gardens, Curb Gardens, Rain Barrels
CA107	Low Impact Development	Rain Garden - End of Pipe
CA110	Low Impact Development	Curbside rain gardens
CA111	Low Impact Development	Rain Gardens, Curb Gardens, Rain Barrels
CA113	Low Impact Development	Rain Garden
CA114	Low Impact Development	Rain Garden
CA115	Low Impact Development	Rain Garden
CA116	Low Impact Development	Rain Gardens, Curb Gardens, Rain Barrels
CA117	Stormwater Pond Retrofit	Retrofit
CA120	Low Impact Development	Curb and End of Pipe, Rain Gardens
CA121	Stormwater Pond Retrofit	SWM Pond Retrofit
CA124	Low Impact Development	Downspout to Curb Rain Garden, Sidewalk Gardens
CA125	Low Impact Development	Downspout to Curb Rain Garden, Sidewalk Gardens

<b>Site ID</b>	<b>Project Type</b>	<b>Proposed Action</b>
CA127	Low Impact Development	Downspout and Curb Rain Garden
CA128	Low Impact Development	Downspout and Curb Rain Garden
CA130	Low Impact Development	Rain Barrels, Sidewalk and Curb Gardens, Tree Boxes
CA131	Low Impact Development	Rain Barrels, Sidewalk and Curb Gardens, Tree Boxes
CA132	Low Impact Development	Rain Barrels, Sidewalk and Curb Gardens, Tree Boxes
CA133	Low Impact Development	Rain Barrels, Sidewalk and Curb Gardens, Tree Boxes
CA134	Low Impact Development	Concrete v Ditches to Rain Gardens
CA135	Low Impact Development	Rain Barrels and Sidewalk Rain Gardens
CA136	Stream Restoration	Riprap Channel to Stepped Rain Garden
CA137	Other	Coordinate with Woodrow Wilson Bridge Project Consultants to Discuss and Mitigate Construction Impacts
CA138	Other	Integrate Recreational and Aesthetic Amenities into Ports along Mainstem Explore Redevelopment of Waterfront to Serve as Community Focal Point
CA139	Other	Provide Pedestrian Access to Stream; Connect to Eisenhower Ave. Across Stream
CA140	Other	Integrate Recreational and Aesthetic Amenities into Ports along Mainstem Explore Redevelopment of Waterfront to Serve as Community Focal Point
CA141	Other	Provide Access to Stream
<b>Tripps Run</b>		
TR103	Low Impact Development	BMP retrofit
TR104	Stormwater Pond Retrofit	BMP retrofit
TR107	Stormwater Pond Retrofit	BMP retrofit
TR108	Stormwater Pond Retrofit	BMP retrofit
TR110	Low Impact Development	Rain barrels, tree box filters, curb rain gardens
TR111	Low Impact Development	Downspout, traffic island, and curb rain gardens; infiltration trenches
TR113	Low Impact Development	Rain barrels, tree box filters
TR114	Low Impact Development	Rain barrels, tree box filters, curb rain gardens
TR115	Low Impact Development	Rain barrels, tree box filters
TR117	Low Impact Development	Downspout, traffic island, and curb rain gardens; infiltration trenches; porous pavers for car dealership
TR119	Low Impact Development	Tree boxes, sidewalk garden rain barrels
TR119A	Low Impact Development	Area drain rain garden
TR120	Stormwater Pond Retrofit	BMP retrofit
TR121	Low Impact Development	Rain barrels, curb gardens
TR122	Low Impact Development	Rain barrels, curb gardens
TR125	Low Impact Development	Downspout, traffic island, and curb rain gardens; infiltration trenches
TR126	Low Impact Development	Downspout, traffic island, and curb rain gardens; infiltration trenches
TR127	Low Impact Development	Downspout, traffic island, and curb rain gardens; infiltration trenches
TR128	Low Impact Development	Downspout, traffic island, and curb rain gardens; infiltration trenches
TR129	Low Impact Development	Downspout, traffic island, and curb rain gardens; infiltration trenches
TR202	Stormwater Pond Retrofit	1-yr EDD pond
TR203	Low Impact Development	Divert discharge in garden to bermed rain garden
TR205	Low Impact Development	Divert discharge in garden to bermed rain garden
TR206	Low Impact Development	End of pipe restriction with water retention in pipe. Include tree or sediment trap boxes to filter sediment
TR209	Low Impact Development	Tree boxes, rain gardens

<b>Site ID</b>	<b>Project Type</b>	<b>Proposed Action</b>
TR211	Low Impact Development	Curb & downspout rain gardens; rain barrels; street sweeping and inlet cleanout program; start community trash collection events; provide trash bins and education information
TR212	Low Impact Development	Roof gardens, infiltration trench, parking lot islands
TR215	Low Impact Development	Parking lot retrofit - trench along front of parking spaces to rain gardens, curb rain gardens, tree box filters
TR217	Stormwater Pond Retrofit	Stilling basin - retrofit to provide detention
TR218	Low Impact Development	Rain barrels, tree box filters, curb rain garden
TR219	Low Impact Development	Sink traffic island to rain garden, rain barrels, curb rain garden
TR220	Low Impact Development	Rain barrels, retrofit controls on concrete ditch, curb rain gardens
TR227	Low Impact Development	Rain barrels, tree box filters, and rain garden; or EDD in park for riprap ditch and concrete ditch
TR228	Stormwater Pond Retrofit	Yard drain to EDD
TR230	Low Impact Development	Tree box filters; rain barrels; sidewalk, curb and traffic island rain gardens
TR231	Low Impact Development	Parking lot retrofit with infiltration trench and rain garden at lot margin
TR232	Low Impact Development	Tree box filters; rain barrels; sidewalk, curb and traffic island rain gardens
TR233	Low Impact Development	Tree box filters; rain barrels; sidewalk, curb and traffic island rain gardens
TR234	Low Impact Development	Tree box filters
TR235	Low Impact Development	Parking lot retrofit: infiltration trench; rain gardens and cistern for building; traffic island rain gardens; roof gardens; and permeable pavers at car dealership
TR236	Low Impact Development	Curb & downspout rain gardens; rain barrels; street sweeping and inlet cleanout program; start community trash collection events; provide trash bins and education information
TR239	Low Impact Development	Porous pavement/blocks under car dealerships
TR241	Low Impact Development	Green roof, downspout rain garden, parking lot rain garden with infiltration trenches
TR242	Low Impact Development	Trash collection - street sweeping and inlet cleanout program; start community trash collection events; provide trash bins and education information
TR243	Other	Locate and clean up leaking, abandoned sewer line
TR246	Other	Investigate hazardous waste dumping; provide outreach and hazardous/municipal waste collection information; street sweeping and inlet cleanout program; start community trash collection events
TR247	Stormwater Pond Retrofit	Pond retrofit
TR249	Stormwater Pond Retrofit	Pond retrofit
TR250	Stormwater Pond Retrofit	Pond retrofit
TR251	Stormwater Pond Retrofit	Pond retrofit
TR253	Stormwater Pond Retrofit	Pond retrofit
TR260	Low Impact Development	Rain barrels; retrofit yard drains to rain gardens; curb and tree box rain gardens
TR261	Low Impact Development	Rain barrels; retrofit yard drains to rain gardens; curb and tree box rain gardens
TR263	Other	Facilitate neighborhood watch and environmental groups; volunteer and County monitoring of pollution, trash, and stream health
TR265	Low Impact Development	Tree boxes, rain gardens
TR266	Low Impact Development	Tree boxes, rain gardens
TR267	Low Impact Development	Tree boxes, rain gardens
TR271	Low Impact Development	Parking lot retrofit - trench along front of parking spaces to rain gardens, curb rain gardens, tree box filters

<b>Site ID</b>	<b>Project Type</b>	<b>Proposed Action</b>
TR272	Low Impact Development	Parking lot retrofit - trench along front of parking spaces to rain gardens, curb rain gardens, tree box filters
TR273	Low Impact Development	Rain barrels, tree box filters, curb rain garden
TR274	Low Impact Development	Rain barrels, tree box filters, curb rain garden
TR278	Stormwater Pond Retrofit	Yard drain to EDD
TR279	Low Impact Development	Tree box filters; rain barrels; sidewalk, curb and traffic island rain gardens
TR280	Low Impact Development	Parking lot retrofit: infiltration trench; rain gardens and cistern for building; traffic island rain gardens; roof gardens; and permeable pavers at car dealership
TR281	Low Impact Development	Green roof, downspout rain garden, parking lot rain garden with infiltration trenches
TR282	Low Impact Development	Green roof, downspout rain garden, parking lot rain garden with infiltration trenches
<b>Turkeycock Run</b>		
TK101	Low Impact Development	Rain Garden
TK102	Low Impact Development	Tree Boxes
TK103	Low Impact Development	Parking and Roof Retrofit Rain Garden
TK105	Low Impact Development	Tree Boxes, Rain Barrels
TK110	Low Impact Development	Rain Barrels, Curb Gardens, Tree Boxes
TK112	Low Impact Development	Rain Barrels, Curb Gardens, Tree Boxes
TK114	Low Impact Development	End of Pipe Rain Garden
TK115	Low Impact Development	Street Rain Gardens, Rain Barrels
TK117	Low Impact Development	Rain Gardens
TK118	Low Impact Development	Tree Boxes
TK120	Low Impact Development	Porous Pavers
TK121	Low Impact Development	Street Gardens, Rain Barrels
TK122	Low Impact Development	Street Gardens, Rain Barrels
TK123	Low Impact Development	Detention Ponds, Rain Barrels (End of Pipe & Median)
TK125	Low Impact Development	Roof Gardens, Cistern
TK126	Low Impact Development	Convert Concrete Swale into Grass Swale
TK129	Stormwater Pond Retrofit	Pond Retrofit
TK135	Stormwater Pond Retrofit	SWM Pond Retrofit
TK136	Stormwater Pond Retrofit	SWM Pond Retrofit
TK140	Stormwater Pond Retrofit	SWM Pond Retrofit
TK143	Stormwater Pond Retrofit	SWM Pond Retrofit
TK144	Stormwater Pond Retrofit	SWM Pond Retrofit
TK145	Stormwater Pond Retrofit	SWM Pond Retrofit
TK152	Other	Organize Stream Clean-up Program for Trash
TK153	Other	Pinecrest Park Golf Course - Pursue Audubon Certification; Provide Pet Waste Information and Clean-up Mitts

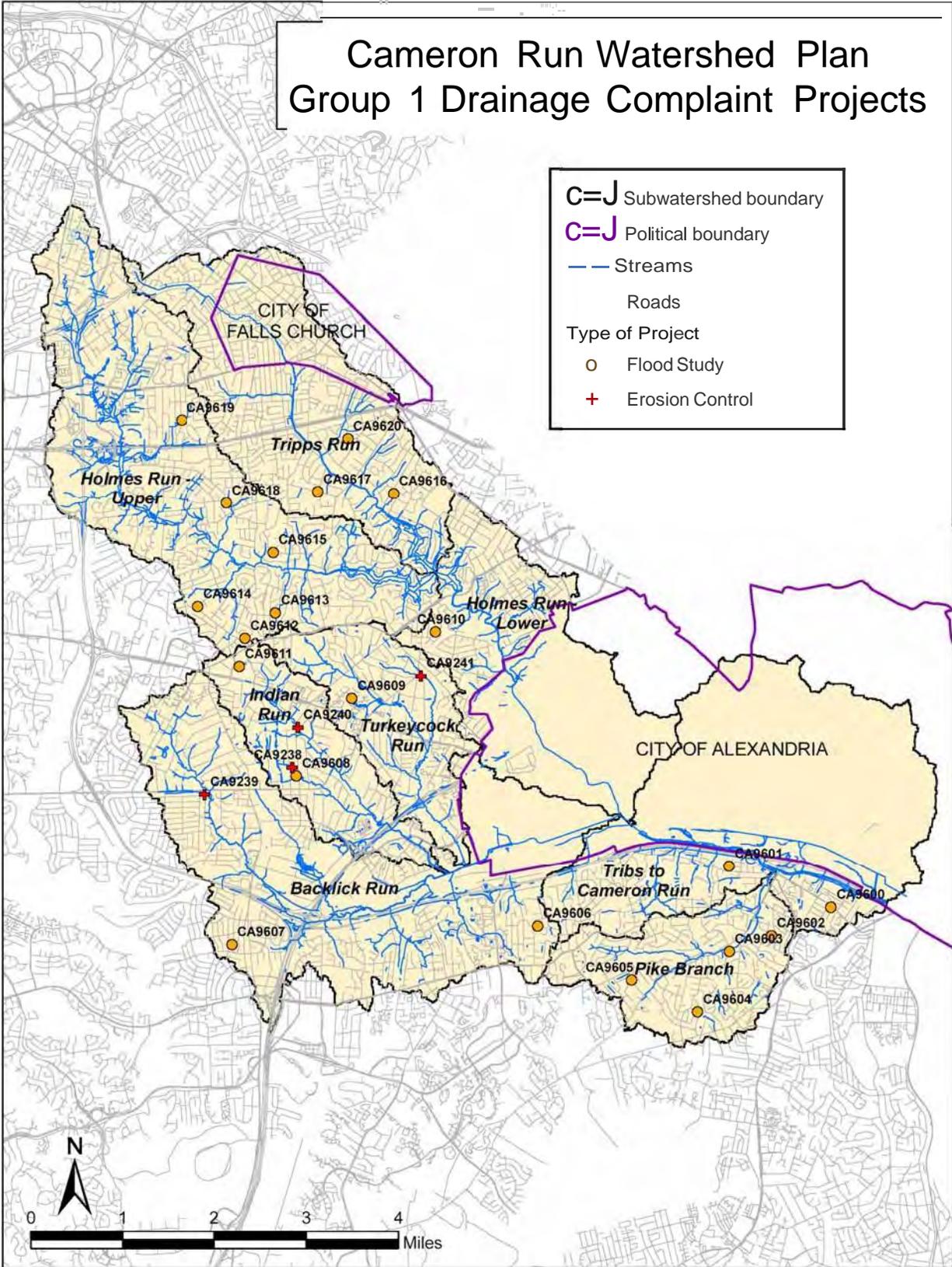
**APPENDIX A-4**

**Project Fact Sheets for Selected  
Drainage Complaint Projects**

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# Cameron Run Watershed Plan Group 1 Drainage Complaint Projects

**C=J** Subwatershed boundary  
**C=J** Political boundary  
 — Streams  
 — Roads  
 Type of Project  
 ○ Flood Study  
 + Erosion Control



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## Indian Run Streambank Stabilization - B

<b>Project ID:</b>	CA9238	<b>Project Type:</b>	Erosion
<b>Project Name:</b>	Indian Run Streambank Stabilization - B	<b>Subwatershed:</b>	Indian Run
<b>Project Location:</b>	Montgomery Street	<b>Study Area</b>	acres
<b>Parcel ID No.:</b>	0714 10 0059		

**Project Location:**



**Proposed Action:**

Restore natural stream channel morphology, stabilize banks, and enhance riparian buffer.

**Proposed Project:**



**Benefits:** Prevent property and structural loss.  
 Improve stream stability and instream habitat. Reduce erosion.  
 Improve floodplain and nutrient cycling functions.

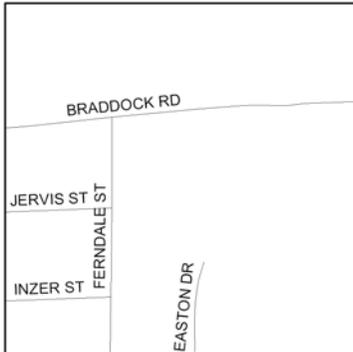
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Streambank Stabilization	325	LF	\$80.00	\$26,000
			<b>Base Cost =</b>	\$26,000
			Mobilization ( 5% ) =	\$1,300
			<b>Subtotal 1 =</b>	\$27,300
			Contingency (25% ) =	\$6,825
			<b>Subtotal 2 =</b>	\$34,125
			Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 45% ) =	\$15,356
			<b>Total =</b>	\$49,481
			<b>Estimated Project Cost =</b>	\$50,000

## Backlick Run Streambank Stabilization

<b>Project ID:</b>	CA9239	<b>Project Type:</b>	Erosion
<b>Project Name:</b>	Backlick Run Streambank Stabilization	<b>Subwatershed:</b>	Backlick Run
<b>Project Location:</b>	Braddock Road	<b>Study Area</b>	acres
<b>Parcel ID No.:</b>	0713 07 0030		

**Project Location:**



**Proposed Action:**

Restore natural stream channel morphology, stabilize banks, and enhance riparian buffer.

**Proposed Project:**



**Benefits:** Prevent property and structural loss.  
 Improve stream stability and instream habitat. Reduce erosion.  
 Improve floodplain and nutrient cycling functions.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Streambank Stabilization	450	LF	\$80.00	\$36,000
<b>Base Cost =</b>				\$36,000
Mobilization ( 5% ) =				\$1,800
<b>Subtotal 1 =</b>				\$37,800
Contingency (25% ) =				\$9,450
<b>Subtotal 2 =</b>				\$47,250
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 45% ) =				\$21,263
<b>Total =</b>				\$68,513
<b>Estimated Project Cost =</b>				\$69,000

## Indian Run Streambank Stabilization - A

<b>Project ID:</b>	CA9240	<b>Project Type:</b>	Erosion
<b>Project Name:</b>	Indian Run Streambank Stabilization - A	<b>Subwatershed:</b>	Indian Run
<b>Project Location:</b>	Indian Run below Columbia Road	<b>Study Area</b>	acres
<b>Parcel ID No.:</b>	0712 08 0029A		

**Project Location:**



**Proposed Action:**

Restore natural stream channel morphology, stabilize banks, and enhance riparian buffer.

**Proposed Project:**



**Benefits:** Prevent property and structural loss.  
 Improve stream stability and instream habitat. Reduce erosion.  
 Improve floodplain and nutrient cycling functions.

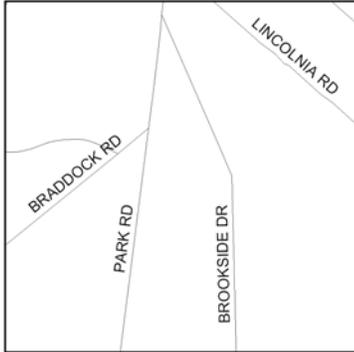
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Streambank Stabilization	550	LF	\$80.00	\$44,000
			<b>Base Cost =</b>	\$44,000
			Mobilization ( 5% ) =	\$2,200
			<b>Subtotal 1 =</b>	\$46,200
			Contingency (25% ) =	\$11,550
			<b>Subtotal 2 =</b>	\$57,750
			Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 45% ) =	\$25,988
			<b>Total =</b>	\$83,738
			<b>Estimated Project Cost =</b>	\$84,000

## Turkeycock Run Stream Stabilization

<b>Project ID:</b>	CA9241	<b>Project Type:</b>	Erosion
<b>Project Name:</b>	Turkeycock Run Stream Stabilization	<b>Subwatershed:</b>	Turkeycock Run
<b>Project Location:</b>	Brookside Drive	<b>Study Area</b>	acres
<b>Parcel ID No.:</b>	0721 06 0065B		

**Project Location:**



**Proposed Action:**

Restore natural stream channel morphology, stabilize banks, and enhance riparian buffer.

**Proposed Project:**



**Benefits:** Prevent property and structural loss.  
 Improve stream stability and instream habitat. Reduce erosion.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Streambank Stabilization	200	LF	\$200.00	\$40,000
<b>Base Cost =</b>				\$40,000
Mobilization ( 5% ) =				\$2,000
<b>Subtotal 1 =</b>				\$42,000
Contingency (25% ) =				\$10,500
<b>Subtotal 2 =</b>				\$52,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 45% ) =				\$23,625
<b>Total =</b>				\$76,125
<b>Estimated Project Cost =</b>				<b>\$77,000</b>

## Huntington Drainage Study

<b>Project ID:</b>	CA9600	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Huntington Drainage Study	<b>Subwatershed:</b>	Tributaries to Cameron Run
<b>Project Location:</b>	Huntington Avenue	<b>Study Area</b>	53.22 acres
<b>Parcel ID No.:</b>	0831 10 0019A; 0831 10 0038A; 0831 10 0039B; 0831 12 0006A; 0831 14B 0058B; 0831 20 0003A; 0833 20 0015A; 0833 29 0010B		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements. This drainage study is being completed as part of an on-going flood damage reduction study for the Huntington community (see Section 4.2.7.1).

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

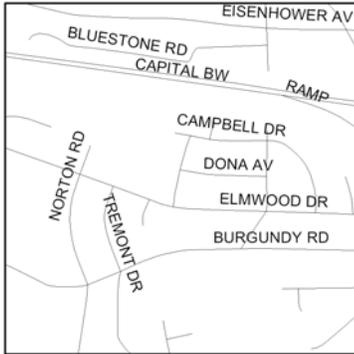
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				\$38,000

## Burgundy Village Drainage Study

<b>Project ID:</b>	CA9601	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Burgundy Village Drainage Study	<b>Subwatershed:</b>	Tributaries to Cameron Run
<b>Project Location:</b>	Elmwood Drive	<b>Study Area</b>	38.14 acres
<b>Parcel ID No.:</b>	0822 03A 0003; 0822 03B 0005; 0822 13 0147; 0822 13 0166; 0822 13 0194		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house, yard, and road flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Reduce road flooding.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

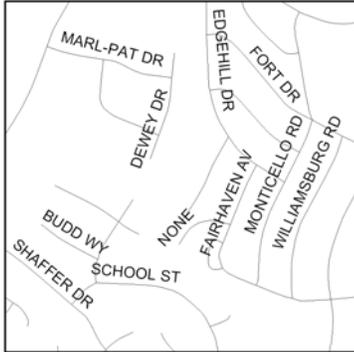
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				\$38,000

## Jefferson Garden & Wilton Hall Drainage Study

<b>Project ID:</b>	CA9602	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Jefferson Garden & Wilton Hall Drainage Study	<b>Subwatershed:</b>	Pike Branch
<b>Project Location:</b>	Fairhaven Avenue; Madison Hill Court	<b>Study Area</b>	47.96 acres
<b>Parcel ID No.:</b>	0824 30 0011; 0824 30 0017; 0833 02020003A; 0833 02020011A; 0833 02070019B; 0833 024B0030A		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements. Improvements to the curb and gutter system have been initiated in this area since the analysis was performed, and evaluation of their effectiveness and the need for any additional improvements should be considered during the recommended drainage study.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

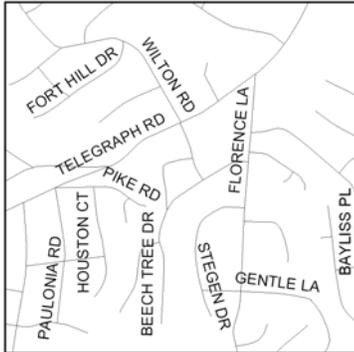
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				<b>\$38,000</b>

## Wilton Woods & Millwood Estates Drainage Study

<b>Project ID:</b>	CA9603	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Wilton Woods & Millwood Estates Drainage Stud	<b>Subwatershed:</b>	Pike Branch
<b>Project Location:</b>	Wilton Road; Beach Tree Drive	<b>Study Area</b>	99.56 acres
<b>Parcel ID No.:</b>	0824 01 0027; 0824 06 0017; 0824 07 0015; 0824 07 0016; 0824 07 0018; 0824 12 0012; 0824 35 0009; 0824 35 0014; 0824 35 0015; 0824 36 0010; 0824 36 0082; 0824 40 0007A		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$45,000.00	\$45,000
<b>Base Cost =</b>				\$45,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$45,000
Contingency (25% ) =				\$11,250
<b>Subtotal 2 =</b>				\$56,250
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$56,250
<b>Estimated Project Cost =</b>				\$57,000

## Virginia Hills Drainage Study

<b>Project ID:</b>	CA9604	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Virginia Hills Drainage Study	<b>Subwatershed:</b>	Pike Branch
<b>Project Location:</b>	Berkshire Drive	<b>Study Area</b>	131.9 acres
<b>Parcel ID No.:</b>	0824 14010051; 0824 14070029; 0824 14160010; 0824 14170010; 0922 02010034; 0922 02010039; 0922 02010041; 0922 02070024; 0922 05 0501; 0922 06 0005; 0922 22 0020; 0922 23 0008; 0922 24 0083		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

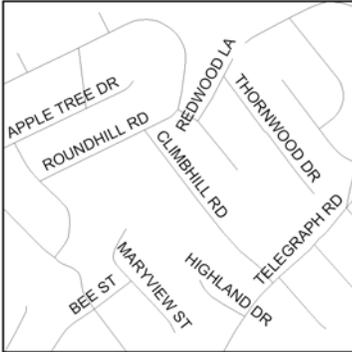
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$45,000.00	\$45,000
<b>Base Cost =</b>				\$45,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$45,000
Contingency (25% ) =				\$11,250
<b>Subtotal 2 =</b>				\$56,250
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$56,250
<b>Estimated Project Cost =</b>				\$57,000

## Rose Hill Drainage Study

<b>Project ID:</b>	CA9605	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Rose Hill Drainage Study	<b>Subwatershed:</b>	Pike Branch
<b>Project Location:</b>	Roundhill Road	<b>Study Area</b>	28.47 acres
<b>Parcel ID No.:</b>	0823 13 0071; 0823 13 0112; 0823 13 0141; 0823 13 0172; 0823 25 0008		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements. Additional complaints have been received from this area since the analysis was performed and all complaints will be considered during the detailed drainage study recommended for this area.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

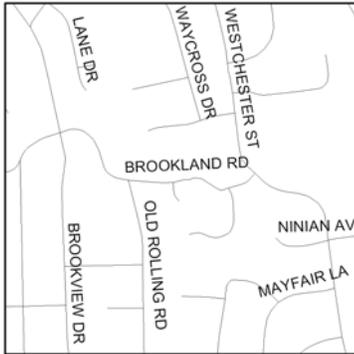
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				<b>\$38,000</b>

## Brookland Estates Drainage Study

<b>Project ID:</b>	CA9606	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Brookland Estates Drainage Study	<b>Subwatershed:</b>	Backlick Run
<b>Project Location:</b>	Brookland Road	<b>Study Area</b>	56.02 acres
<b>Parcel ID No.:</b>	0812 06080022; 0812 07 0127; 0814 01 0090; 0814 01 0090B; 0814 07 0048; 0814 18 0011; 0814 20 0114; 0814 20 0119		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				\$38,000

## Crestwood Drainage Study

<b>Project ID:</b>	CA9607	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Crestwood Drainage Study	<b>Subwatershed:</b>	Backlick Run
<b>Project Location:</b>	Floyd Avenue	<b>Study Area</b>	51.25 acres
<b>Parcel ID No.:</b>	0803 02050006; 0803 02050012; 0803 02190002; 0803 02200014; 0803 03110014; 0804 04020020		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements. Possible cross-connections between the storm drainage network and sanitary sewer system have also been reported for this area, and should be investigated as part of the recommended drainage study.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				<b>\$38,000</b>

## Braddock Hills Drainage Study

<b>Project ID:</b>	CA9608	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Braddock Hills Drainage Study	<b>Subwatershed:</b>	Indian Run
<b>Project Location:</b>	Dodson Drive	<b>Study Area</b>	93.2 acres
<b>Parcel ID No.:</b>	0714 06 A; 0714 06 0003A; 0714 09 0006; 0714 09 0030; 0714 10 0011; 0714 13 0017; 0714 13 0064; 0714 15 0005		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house, yard, and road flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Reduce road flooding.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

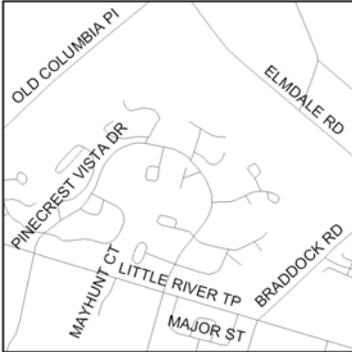
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$45,000.00	\$45,000
<b>Base Cost =</b>				\$45,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$45,000
Contingency (25% ) =				\$11,250
<b>Subtotal 2 =</b>				\$56,250
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$56,250
<b>Estimated Project Cost =</b>				\$57,000

## Pinecrest Drainage Study

<b>Project ID:</b>	CA9609	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Pinecrest Drainage Study	<b>Subwatershed:</b>	Turkeycock Run
<b>Project Location:</b>	Pinecrest Vista Drive	<b>Study Area</b>	22.93 acres
<b>Parcel ID No.:</b>	0712 34060053; 0712 34090047; 0721 26020001; 0721 26020027; 0721 26090035		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house, yard, and road flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Reduce road flooding.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				\$38,000

## Parklawn Drainage Study

<b>Project ID:</b>	CA9610	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Parklawn Drainage Study	<b>Subwatershed:</b>	Holmes Run - Lower
<b>Project Location:</b>	Arcadia Road	<b>Study Area</b>	17.27 acres
<b>Parcel ID No.:</b>	0613 07B 0001; 0613 07C 0010; 0613 16 0001		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

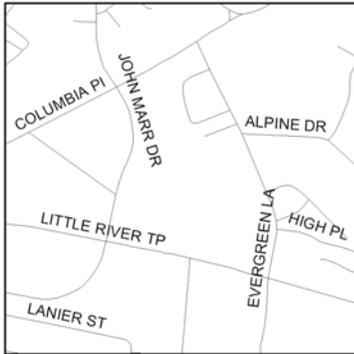
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$15,000.00	\$15,000
<b>Base Cost =</b>				\$15,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$15,000
Contingency (25% ) =				\$3,750
<b>Subtotal 2 =</b>				\$18,750
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$18,750
<b>Estimated Project Cost =</b>				\$19,000

## Evergreen Heights Drainage Study

<b>Project ID:</b>	CA9611	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Evergreen Heights Drainage Study	<b>Subwatershed:</b>	Indian Run
<b>Project Location:</b>	John Marr Drive	<b>Study Area</b>	44.19 acres
<b>Parcel ID No.:</b>	0711 01 0096; 0711 01 0110; 0712 02 0030; 0712 02 0034		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

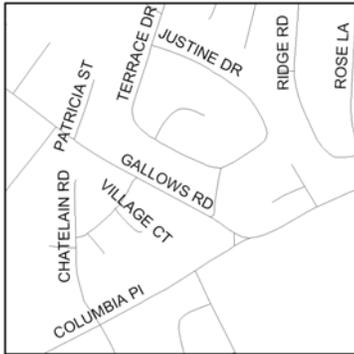
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				\$38,000

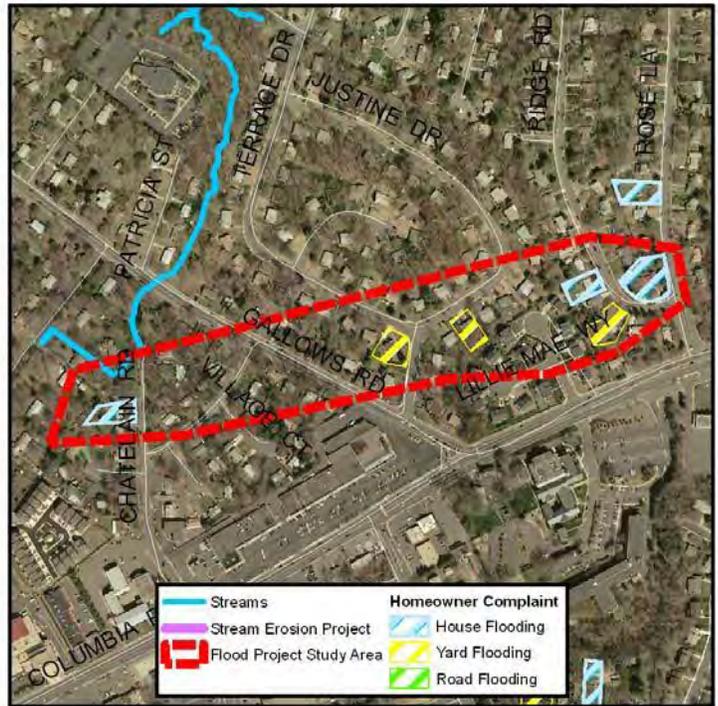
## Webbwood Drainage Study

<b>Project ID:</b>	CA9612	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Webbwood Drainage Study	<b>Subwatershed:</b>	Holmes Run - Upper
<b>Project Location:</b>	Columbia Pike	<b>Study Area</b>	19.23 acres
<b>Parcel ID No.:</b>	0603 17 0010R; 0603 18 0052; 0604 04B 0001; 0604 04C 0001; 0604 06 0001; 0604 07 0118		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$15,000.00	\$15,000
<b>Base Cost =</b>				\$15,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$15,000
Contingency (25% ) =				\$3,750
<b>Subtotal 2 =</b>				\$18,750
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$18,750
<b>Estimated Project Cost =</b>				\$19,000

## Sleepy Hollow Woods Drainage Study

<b>Project ID:</b>	CA9613	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Sleepy Hollow Woods Drainage Study	<b>Subwatershed:</b>	Holmes Run - Upper
<b>Project Location:</b>	Murray Lane	<b>Study Area</b>	32.19 acres
<b>Parcel ID No.:</b>	0604 04B 0008; 0604 16E 0003; 0604 16F 0018; 0604 16L 0012		

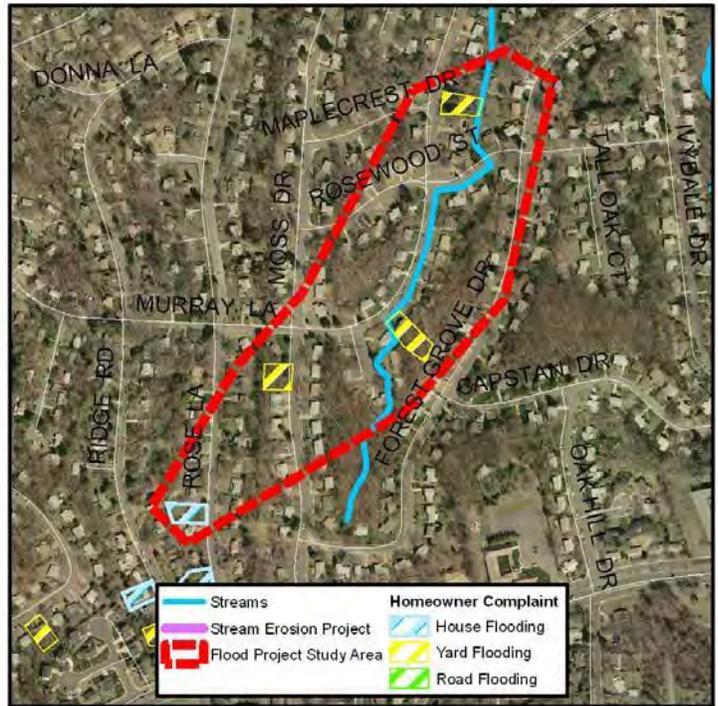
**Project Location:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

**Proposed Project:**



- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

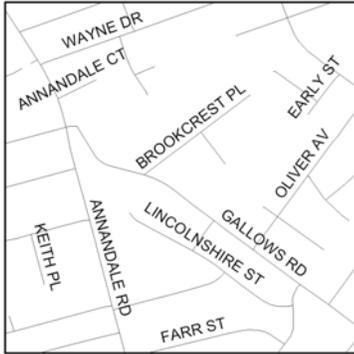
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				\$38,000

## Kenwood Drainage Study

<b>Project ID:</b>	CA9614	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Kenwood Drainage Study	<b>Subwatershed:</b>	Holmes Run - Upper
<b>Project Location:</b>	Gallows Road	<b>Study Area</b>	43.13 acres
<b>Parcel ID No.:</b>	0603 23 0002; 0603 27 0003; 0603 28 0017; 0603 28 0037; 0603 28 0042; 0603 28 0072; 0603 28 0073; 0603 34 0001		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				<b>\$38,000</b>

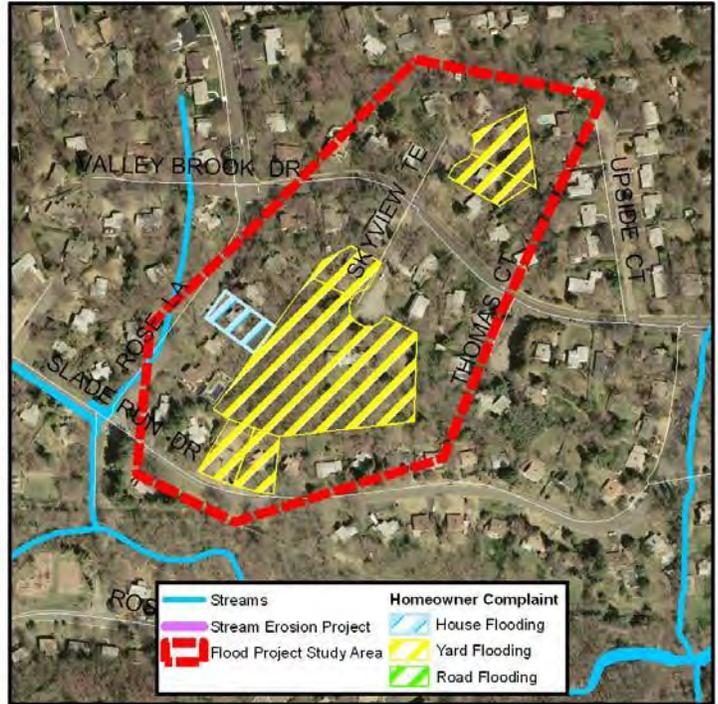
## Valley Brook Drainage Study

<b>Project ID:</b>	CA9615	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Valley Brook Drainage Study	<b>Subwatershed:</b>	Holmes Run - Upper
<b>Project Location:</b>	Slade Run Drive	<b>Study Area</b>	19.17 acres
<b>Parcel ID No.:</b>	0602 30 C1; 0602 30 0019; 0602 30 0020; 0602 30 0031; 0602 30 0056; 0602 30 0057; 0602 30 0062		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

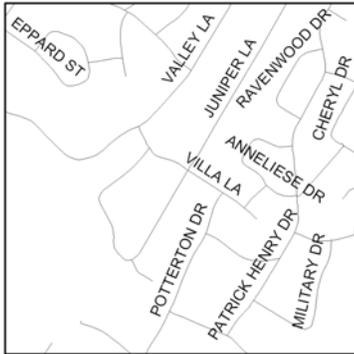
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$15,000.00	\$15,000
<b>Base Cost =</b>				\$15,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$15,000
Contingency (25% ) =				\$3,750
<b>Subtotal 2 =</b>				\$18,750
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$18,750
<b>Estimated Project Cost =</b>				\$19,000

## Ravenwood Drainage Study

<b>Project ID:</b>	CA9616	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Ravenwood Drainage Study	<b>Subwatershed:</b>	Tripps Run
<b>Project Location:</b>	Potterton Drive	<b>Study Area</b>	44.64 acres
<b>Parcel ID No.:</b>	0513 23 0088; 0611 03 0053A; 0611 03 0064; 0611 04 0075A; 0611 11 1052		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				<b>\$38,000</b>

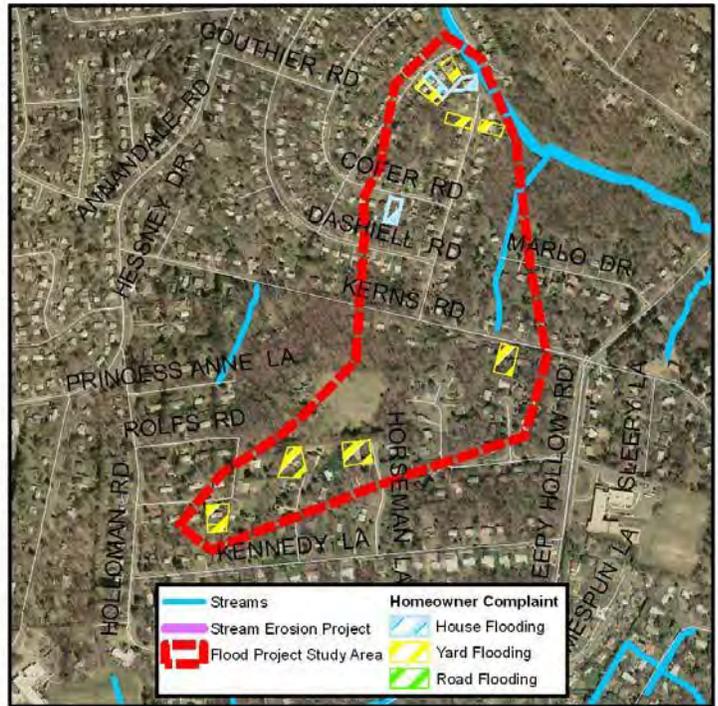
## Marlo Heights Drainage Study

<b>Project ID:</b>	CA9617	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Marlo Heights Drainage Study	<b>Subwatershed:</b>	Tripps Run
<b>Project Location:</b>	Kerns Road	<b>Study Area</b>	67.32 acres
<b>Parcel ID No.:</b>	0504 20 0176; 0504 20 0158; 0602 13 0016; 0504 20 0160; 0504 20 0163; 0602 15 0079; 0602 12 0001; 0504 20 0162; 0504 20 0155; 0602 37 0037; 0602 40 0005		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				\$38,000

## Anna Lee Heights Drainage Study

<b>Project ID:</b>	CA9618	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Anna Lee Heights Drainage Study	<b>Subwatershed:</b>	Holmes Run - Upper
<b>Project Location:</b>	Graham Road	<b>Study Area</b>	11.93 acres
<b>Parcel ID No.:</b>	0601 11 0005; 0601 20 0010; 0601 11 0016		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

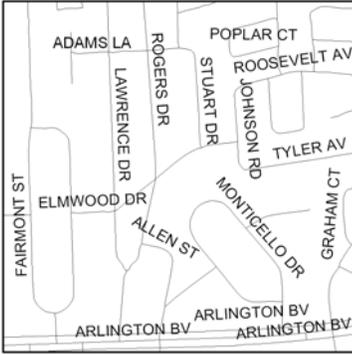
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$15,000.00	\$15,000
<b>Base Cost =</b>				\$15,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$15,000
Contingency (25% ) =				\$3,750
<b>Subtotal 2 =</b>				\$18,750
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$18,750
<b>Estimated Project Cost =</b>				\$19,000

## Fenwick Park Drainage Study

<b>Project ID:</b>	CA9619	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Fenwick Park Drainage Study	<b>Subwatershed:</b>	Holmes Run - Upper
<b>Project Location:</b>	Elmwood Drive	<b>Study Area</b>	56.19 acres
<b>Parcel ID No.:</b>	0503 09 0198; 0503 15 0060; 0503 15 0067; 0503 15 0080; 0503 15 0108; 0503 15 0122; 0503 15 0133; 0503 15 0160; 0503 15 0161; 0503 15 0176; 0503 15 0187; 0503 17 0081		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

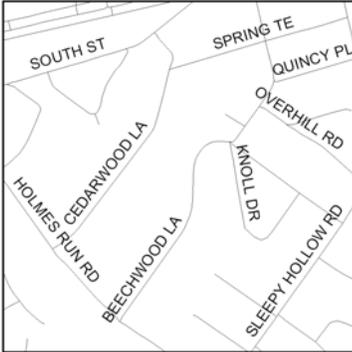
**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				<b>\$38,000</b>

## Sleepy Hollow Drainage Study

<b>Project ID:</b>	CA9620	<b>Project Type:</b>	Flooding
<b>Project Name:</b>	Sleepy Hollow Drainage Study	<b>Subwatershed:</b>	Tripps Run
<b>Project Location:</b>	Beechwood Land; Quincy Place	<b>Study Area</b>	30.54 acres
<b>Parcel ID No.:</b>	0504 23 0061; 0504 21 0029; 0513 07 0015; 0504 21 0043; 0513 06 0007; 0513 06 0008		

**Project Location:**



**Proposed Project:**



**Proposed Action:**

Conduct a neighborhood drainage improvement study to investigate reported house and yard flooding problems in the area, and develop preliminary plans and cost estimates to provide improvements.

- Benefits:**
- Prevent property and structural loss.
  - Improve stormwater quantity controls.
  - Improve stormwater quality controls.
  - Opportunity for public education.

**Estimated Project Cost:**

ITEM	QUANTITY	UNITS	UNIT COST	TOTAL
Neighborhood Drainage Improvement Study	1	EA	\$30,000.00	\$30,000
<b>Base Cost =</b>				\$30,000
Mobilization ( 0% ) =				\$0
<b>Subtotal 1 =</b>				\$30,000
Contingency (25% ) =				\$7,500
<b>Subtotal 2 =</b>				\$37,500
Engineering Design, Surveys, Land Acquisition, Utility Relocation, and Permits ( 0% ) =				\$0
<b>Total =</b>				\$37,500
<b>Estimated Project Cost =</b>				<b>\$38,000</b>

