

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
APPLICATION FOR STORMWATER LOCAL ASSISTANCE FUND (SLAF)
STORMWATER CAPITAL PROJECTS

SECTION A - ORGANIZATIONAL DATA

Name of Applicant:	City of Richmond DPU		
Applicant Address:	730 East Broad St. Richmond, VA 2321		
Contact Person:	Grace A. LeRose		
Phone:	804-646-0033	Email:	Grace.LeRose@richmondgov.com
Name of Engineer:	Hazen and Sawyer		
Engineer Address:	4807 Hermitage Road Suite 203 Richmond, VA 23227		
Contact Person:	Christopher W. Tabor, PE		
Phone:	804-266-1400 ext 1#	Email:	ctabor@hazenandsawyer.com

SECTION B - PROPOSED FUNDING

PROJECT FUNDING

a) Amount of SLAF Grant Funds Requested	716,000																
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 5%;"></th><th style="width: 60%;">Source of Match Funds</th><th style="width: 20%;">Amount</th><th style="width: 15%;">CHECK BOX IF COMMITTED</th></tr></thead><tbody><tr><td style="text-align: center;">1</td><td>50% Stormwater Utility Funding</td><td style="text-align: right;">716,000</td><td></td></tr><tr><td style="text-align: center;">2</td><td></td><td></td><td></td></tr><tr><td style="text-align: center;">3</td><td></td><td></td><td></td></tr></tbody></table>			Source of Match Funds	Amount	CHECK BOX IF COMMITTED	1	50% Stormwater Utility Funding	716,000		2				3			
	Source of Match Funds	Amount	CHECK BOX IF COMMITTED														
1	50% Stormwater Utility Funding	716,000															
2																	
3																	
b) Total Other Funding Available (1 + 2 + 3 ...)**	716,000																
c) Total Project Cost (a + b)	1,432,000																

*SLAF Grants provide up to 50% of project costs. Applicant must identify anticipated source(s) and amount(s) of match funds.

**This amount must be at least equal to the amount of Grant Funds being requested.

SECTION C - WATER QUALITY DATA

Location of Project	Latitude	37.493733	Longitude	-77.437668
(Latitude and Longitude of project is a required entry on this application. The points should be the nearest approximation of the center of your project. Please identify them in decimal degrees.)				
Name of Stream / Waterbody impacted by stormwater runoff being addressed by the project				
Albro Creek				
River Basin for Receiving Stream / Waterbody				
James River				

SECTION D -BRIEF PROJECT DESCRIPTION AND STATEMENT OF NEED

Please include a description of project including: type of project (e.g. extended detention pond retrofit), size of area treated (acres), TMDL or impaired water the project addresses, if the project is relevant to a TMDL Implementation Plan, and other relevant information pertaining to the project. Describe the need for the proposed project. Needs should be in areas of restoring, protecting or preventing pollution in State waters. (attach additional pages if necessary)

The proposed project is for the restoration of 1,281 feet of stream and the creation of 3.0 acres of wetlands to restore and improve the water quality of Albro Creek (A.K.A. Bellemeade Creek); a creek which flows to the James River via Goodes Creek. The local drainage area that conveys flow to the restoration site is 35.17 acres and the local project site is unique as it is physically isolated from the upstream section of the Albro Creek and corresponding watershed via a large diversion pipe. The upstream section of Albro Creek services approximately 1,200 acres. As the restored stream has the potential to remove more nutrients than the smaller drainage area (35.17 acres) is generating, a flow splitting structure upstream of the restored stream and near the inlet of the existing concrete diversion pipe will be utilized to convey additional flows to the restored section of Albro Creek during wet weather events.

The impacted area is within the MS4 section of the City and provides local and regional benefits by reducing pollutant loadings to the James River and Chesapeake Bay. This project is intended to improve water quality, provide flood protection if possible, reduce bank erosion and generally reduce nutrient production in a quantifiable manner to assist the City in meeting environmental improvement requirements.

SECTION E - POLLUTION REDUCTION

The calculated Total Pounds (Per Year) of Total Phosphorous reduced from stormwater as a result of this project

= pounds per year

The established methodology for calculating the TP reduction is outlined in Attachment A of the SLAF Guidelines. To verify calculations for pollution reduction, the following information is required with the application:

- 1) Print out the Site Data tab of the Virginia Runoff Reduction Method Spreadsheet showing the data entered and resultant TP load. Supporting documentation with rationale for parameter selection must be provided to demonstrate that the parameter estimates are valid for the project.
- 2) Provide Text to indicate which pollution reduction calculation methodology was selected, why it is appropriate for the project, the calculated phosphorus load reduction, any assumptions with supporting documentation, and parameters selected with rationale for selection (must be provided to demonstrate that the estimates are valid for the project). All supporting calculations must be provided.
- 3) If the project is a retrofit of an existing BMP provide photographs showing the BMP before the upgrade. Provide text to describe the upgrade / enhancement and the incremental phosphorus load reduction achieved utilizing the SLAF guideline references, with supporting documentation. Rationale and calculated estimates for BMP's current (former) efficiency must be provided.

SECTION F - READINESS-TO-PROCEED**PROJECT STATUS**

	Yes	No	N/A
Is the project included in Stormwater or Watershed Management Plan? (If Yes, attach documentation to application)		✓	
Is the project identified in current year Capital Improvement Plan or Annual Budget? (If Yes, attach documentation to application)	✓		
Is acquisition of land necessary to complete project?		✓	
Has the land necessary for the project already been acquired? (If Yes, attach documentation to application)			✓
Has an engineer been selected for project design? (If Yes, provide name)	✓		

ANTICIPATED SCHEDULE

	<i>Schedule Item Description</i>	<i>Date</i>
a.	Notice to Proceed on Design	October 2014
b.	Completion of Plans/Specifications	May 2015
c.	Plans and Specs Approved	June 2015
d.	Advertise for Bids	September 2015
e.	Bid Opening	October 2015
f.	Award Contracts	December 2015
g.	Estimated Construction Time (expressed in months)	10

SECTION G -PROJECT BUDGET INFORMATION

Legal / Administration	\$14000.00
Land, Right-of-Way	
Architectural Engineering Basic Fees	200,000
Project Inspection Fees	\$46000.00
Other (Explain)	\$30000.00
Stormwater BMP Construction	1,100,000
Contingencies	\$42000.00
TOTAL*	1,432,000 *

*This amount should be the exact same as the amount in Item c) Total Project Cost, Section B, Page 1.

SECTION H

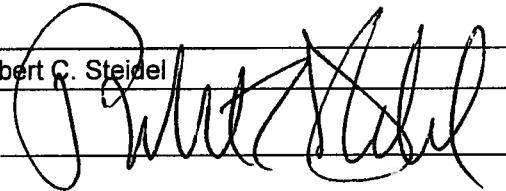
	Yes	No	N/A
Has applicant adopted a dedicated source of revenue to implement a stormwater control program in accordance with §15.2-2114? (If so, attach documentation)	✓		
Is the applicant subject to an MS4 discharge permit in accordance with §62.1-44.5?	✓		
Does the project address requirements of your MS4 permit? If yes, explain:	✓		
<p>Public Education and Public Involvement via location adjacent to the Bellemeade Community Center and the work presents opportunities for education and water quality monitoring. Bellemeade Community Center and has been a focal point of community involvement associated with environmental education and stewardship as indicated by a recent Times-Dispatch newspaper article "Hundreds Donate Time to Lift the Community" Sunday, October 19, 2014</p> <p>Stormwater Management at City Facilities incorporating stream rehabilitation and constructed wetlands to reduce TSS, TP, and TN loads and improve water quality.</p>			

Name of MS4 Permittee if different from Applicant

SECTION I - ASSURANCES AND CERTIFICATIONS

The undersigned representative of the applicant certifies that the information contained herein and the attached statements and exhibits are true, correct and complete to the best of their knowledge and belief. The undersigned also agrees to clarify or supplement information pertaining to this application upon request.

Name: Robert C. Steidel Title: Director Public Utilities

Signature:  Date: 24 Oct. 19

SECTION J - ATTACHMENTS

Include all required attachments appropriate for your application. The following is a list of potential attachments:

- 1) Documentation supporting the Pollution Reduction methodology, calculations, text, etc. as described in Section E.
- 2) Excerpt from Stormwater or Watershed Management Plan. (Section F)
- 3) Excerpt from Capital Improvement Plan or Annual Budget. (Section F)
- 4) Documentation of land acquisition. (Section F)
- 5) Documentation of Dedicated Revenue Source for Stormwater Management Program. (Section H)

Virginia Runoff Reduction Method ReDevelopment Worksheet - v2.8 - June 2014

Site Data Summary

Total Rainfall = 43 inches

Site Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.33	0.00	1.27	0.33	1.92	5.46
Turf (acres)	1.37	9.67	15.90	1.37	28.30	80.45
Impervious (acres)	0.17	1.09	3.52	0.17	4.95	14.09
					35.18	100.00

Site Rv	0.31
Post Development Treatment Volume (ft ³)	39055
Post Development TP Load (lb/yr)	24.54
Post Development TN Load (lb/yr)	175.54
Total TP Load Reduction Required (lb/yr)	4.91

Total Runoff Volume Reduction (ft ³)	5818
Total TP Load Reduction Achieved (lb/yr)	7
Total TN Load Reduction Achieved (lb/yr)	40.92
Adjusted Post Development TP Load (lb/yr)	17.78
Remaining Phosphorous Load Reduction (Lb/yr) Required	0.00

Drainage Area Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
Forest (acres)	1.92	0.00	0.00	0.00	0.00	1.92
Turf (acres)	28.30	0.00	0.00	0.00	0.00	28.30
Impervious (acres)	4.95	0.00	0.00	0.00	0.00	4.95
						35.18

Drainage Area Compliance Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
TP Load Red. (lb/yr)	6.76	0.00	0.00	0.00	0.00	6.76
TN Load Red. (lb/yr)	40.92	0.00	0.00	0.00	0.00	40.92

Channel and Flood Protection

	Weighted CN	1-year storm Adjusted CN	2-year storm Adjusted CN	10-year storm Adjusted CN
Target Rainfall Event (in)		0.00	0.00	0.00
D.A. A CN	72	#N/A	#N/A	#N/A
D.A. B CN	0	100	100	100
D.A. C CN	0	100	100	100
D.A. D CN	0	100	100	100
D.A. E CN	0	100	100	100

Section J – Supporting Documentation

1. Virginia Runoff Reduction Method Spreadsheet (Version 2.8, June 2014; 2011 BMP Stds & Specs)
Input Data:

- a. Annual rainfall of 43 inches based on 30-year rainfall data for the City of Richmond.
- b. Initial TP loading for 35.17 acre project site (see attached Watershed Drainage Area Map)
- c. Soils distribution for the project area based U.S. Geological Survey.
- d. Land use distribution for the project area based U.S. Geological Survey.

2. Methodology for Calculating Total Phosphorus (TP) Reduction – Stream Restoration

- a. Total Phosphorus reduction estimates were made in accordance with Stormwater Local Assistance Fund Guidelines (SLAF)– Attachment A
- b. Edge of Stream 2011 Interim Approved removal Rates per Linear Foot of Qualifying Stream Restoration” as published within *Recommendations of the Expert Panel to Define Removal Rates for Individual Stream Restoration Projects by Berg et al* (Sep 8, 2014 revision) removal efficiency was used (0.068 lb/LF/year).
- c. The stream restoration project is 1,281 linear feet.
- d. The calculated total pounds per year of total phosphorus:

$$(1,281 \text{ linear feet}) \times \left(0.068 \frac{\text{lb}}{\text{linear}} \text{ feet}\right) = 87.1 \text{ lb/yr}$$

3. Methodology for Calculating Total Phosphorus (TP) Reduction – Ponds

- a. Pond design is based on the design of Level 2 Extended Detention ponds as described by the *Virginia Division of Environmental Quality Stormwater Design Specification No. 15, Extended Detention (ED) Pond (2011)*.
- b. Virginia Runoff Reduction Method Spreadsheet (Version 2.8, June 2014; 2011 BMP Stds & Specs) assuming and assumed treatment as Level 2 ED pond
- c. Input data from 1. (above) used with credit area of 4.95 acres impervious and 23.8 acres managed turf
- d. Total Phosphorus Load for Runoff Reduction Practices calculated via spreadsheet is 6.76 lb/yr

4. Methodology for Calculating Total Suspended Solids (TSS) Reduction

- a. “Edge of Stream 2011 Interim Approved removal Rates per Linear Foot of Qualifying Stream Restoration” as published within *Recommendations of the Expert Panel to Define Removal Rates for Individual Stream Restoration Projects by Berg et al* (Sep 8, 2014 revision) removal efficiency for Total Suspended Solids was used (44.88 lb/LF/year).
- b. The stream restoration project is 1,281 linear feet.
- c. The calculated total pounds per year of Total Suspended Solids:

$$(1,281 \text{ linear feet}) \times \left(44.88 \frac{\text{lb}}{\text{linear}} \text{ feet}\right) = 57,491 \text{ lb/yr}$$

GOO-09.03 (Minefee St BMP – 2123 Wright Ave) (updated on 11-14-12)

Vicinity Map NTS

Project Manager:

Engineer:

Project Scope: Opportunities may exist for ~800 LF of stream restoration and establishment of conservation buffer around this Goodes Creek Tributary

Neighborhood: Bellemeade

Council District: 6

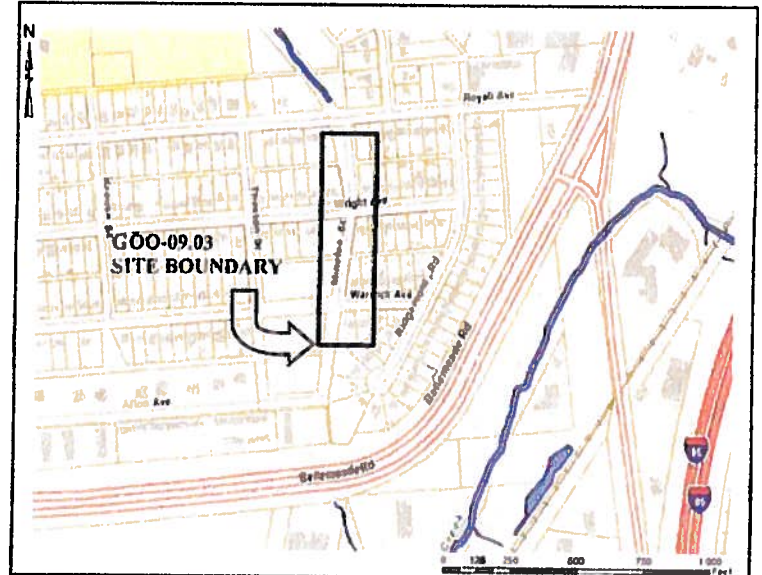
Category: Water Quality

PROJECT STATUS

PLANNING:

DESIGN:

CONSTRUCTION:



Funding Information

PLANNING

Task Order signed:

DESIGN

Contract No.:

PG No.:

Engineer's Design Cost:

Easements:

CONSTRUCTION

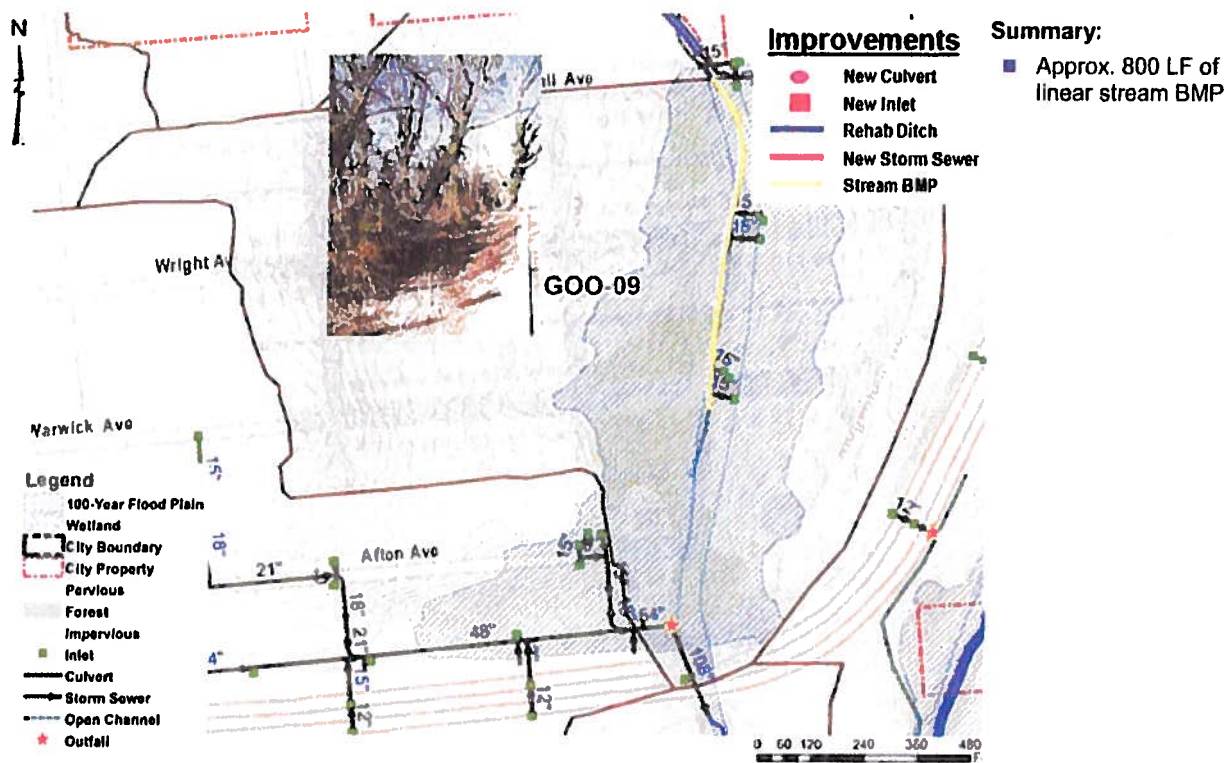
Permitting: See Back Page

Estimated Const. Cost:

Contractor:

Project Update





Pollutant Load Reduction

TN Reduction (lb/yr)	8.20 (22.4% ¹)
TP Reduction (lb/yr)	1.11 (0.4% ¹)
TSS Reduction (lb/yr)	176 (1.6% ¹)

¹ Based on total subwatershed mass load

Project Cost and Rank Summary

Construction Cost	\$280,000
Capital Cost	\$434,000
Annual O&M Cost	\$8,700
Annual Cost (Including O&M)	\$34,800
Project Score	176
Ratio of Cost to Project Score	198

In Project Area			NEPA Review			Corps		DEQ	DCR	City Permits								
Hazardous Material	Historical Sites	Threatened & Endangered Species	Categorical Exclusion	Find of No Significant Impact (FONSI)	Environmental Impact Statement	Nationwide Permit	Joint Permit	Water Protection Permit	VSMP	Building Permit	E&S Control and Land Disturbance	Perennial Stream & RPA Report	Work-in-Streets	Blasting Permit	VDOT Permit	Railroad Permit	Permanent Easement	Temporary Construction Easement
						Y			Y		Y	Y	Y					Y

STORMWATER FACILITIES IMPROVEMENTS

CATEGORY: UTILITIES
FOCUS AREA: SNE
LOCATION: CITYWIDE
EST. COMPLETION DATE: ONGOING

DEPARTMENT: PUBLIC UTILITIES
SERVICE: STORMWATER MANAGEMENT
FUND: 0806
AWARD #: 500084,500085,500086



DESCRIPTION & SCOPE: This project provides for Citywide rehabilitation and upgrade of stormwater sewers and associated facilities, inspection and replacement programs, miscellaneous stormwater extensions, and emergency replacements.

PURPOSE: To complete the necessary replacement of and upgrades to the stormwater facilities.

HISTORY & KEY MILESTONES: This project has been funded to rehabilitate and/or replace drainage structures, ditches and culverts throughout the city. Development and use of "Green" technology has proven to be a

positive step toward the reduction of untreated urban runoff into the City's rivers and streams. A proactive approach is being taken to meet federal, state and local regulations.

FINANCIAL SUMMARY

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	TOTAL FY 2015-2019
FY 2015 ADOPTED	N/A	5,170,000	13,900,000	13,900,000	13,900,000	13,900,000	60,770,000
FY 2014 ADOPTED	7,550,000	13,900,000	13,900,000	13,900,000	13,900,000	N/A	55,600,000
CHANGE	N/A	(8,730,000)	-	-	-	13,900,000	5,170,000
OPERATING IMPACT	THE FUNDS REQUESTED IN THIS PROJECT ARE NECESSARY TO REDUCE MAINTENANCE COSTS AND ORDINARILY KEEP RATE INCREASES TO A MINIMUM.						

TOTAL PROJECT COST	ONGOING
PRIOR YEAR FUNDING	24,023,665
PRIOR YEAR AVAILABLE	6,761,512
FY 2015 ADOPTED	5,170,000
FY 2016 – FY 2018 PLANNED	55,600,000
REMAINING NEED	ONGOING

FY 2015 BUDGET DISTRIBUTION

	AMOUNT
PLANNING/DESIGN	-
ACQUISITION/RELOCATION	-
SITE IMPROVEMENTS	-
CONSTRUCTION	5,170,000
FURNITURE/FIXTURES/EQUIPMENT	-
OTHER	-
TOTAL	5,170,000

FUNDING SOURCE(s): CASH, UTILITY BONDS, GRANTS

NOTES: ON MAY 28, 2013 CITY COUNCIL ADOPTED THE FY2014-2018 CIP WHICH INCLUDED AN AMENDMENT TO INCREASE THE STORMWATER UTILITY FY2014 APPROPRIATION AMOUNT BY \$50,000.

Section J – Supporting Documentation

Dedicated Revenue Source

The City's Stormwater Utility was implemented in 2009 to ensure that Richmond's stormwater management program receives adequate financial support independent of the City's tax rate and general fund. These funds are used to implement and maintain a comprehensive stormwater quality management plan as required by the US EPA and Virginia DEQ.

The Utility fees cover the City's MS4 and the surface drainage of the combined sewer system. The Utility has an annual budget of approximately \$7.6 million used to maintain 180 miles of separate stormwater drainage pipes, 22,000 catch basins, 600 miles of ditches, and 50 public BMPs. The Utility also funds Stormwater Capital Improvement Projects.

- All owners of developed properties are charged a fee for service.
- Bills are sent out on a monthly basis and included with water and wastewater fees.
- Residential rates are shown in the table below:

Impervious Surface Area	Monthly Fee
1. Up to 1000 sq ft	\$2.08
2. Between 1001 and 2399 sq ft	\$3.75
3. Greater than 2400 sq ft	\$5.83

- Non-residential rates are calculated as follows:

First, the number of Equivalent Residential Units (ERU) is calculated using the equation:

$$1 \text{ ERU} = 1,425 \text{ sq ft.}$$

A facility having 15,000 sq ft of impervious area would have $15,000 \div 1,425 = 10.5$ ERUs.

To determine the fee, multiply the ERU by \$3.75.

$$10.5 \text{ ERU} \times \$3.75 = \$39.38 \text{ per month.}$$



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

December 17, 2014

Ms. Grace LeRose
City of Richmond
730 E. Broad Street
Richmond, Virginia 23219

Re: Stormwater Local Assistance Fund (SLAF) FY 2015
City of Richmond

Dear Ms. LeRose:

I am pleased to inform you that I have authorized SLAF matching grant funds for your community for the project(s) and amounts shown below. This authorization is contingent upon compliance with all program requirements. Actual grant award will not occur until after your receipt of construction bids and DEQ's approval of a final project budget based on those bids. My staff will be in contact with you in the near future to set up a meeting to discuss the next steps and schedule for moving forward with your project(s).

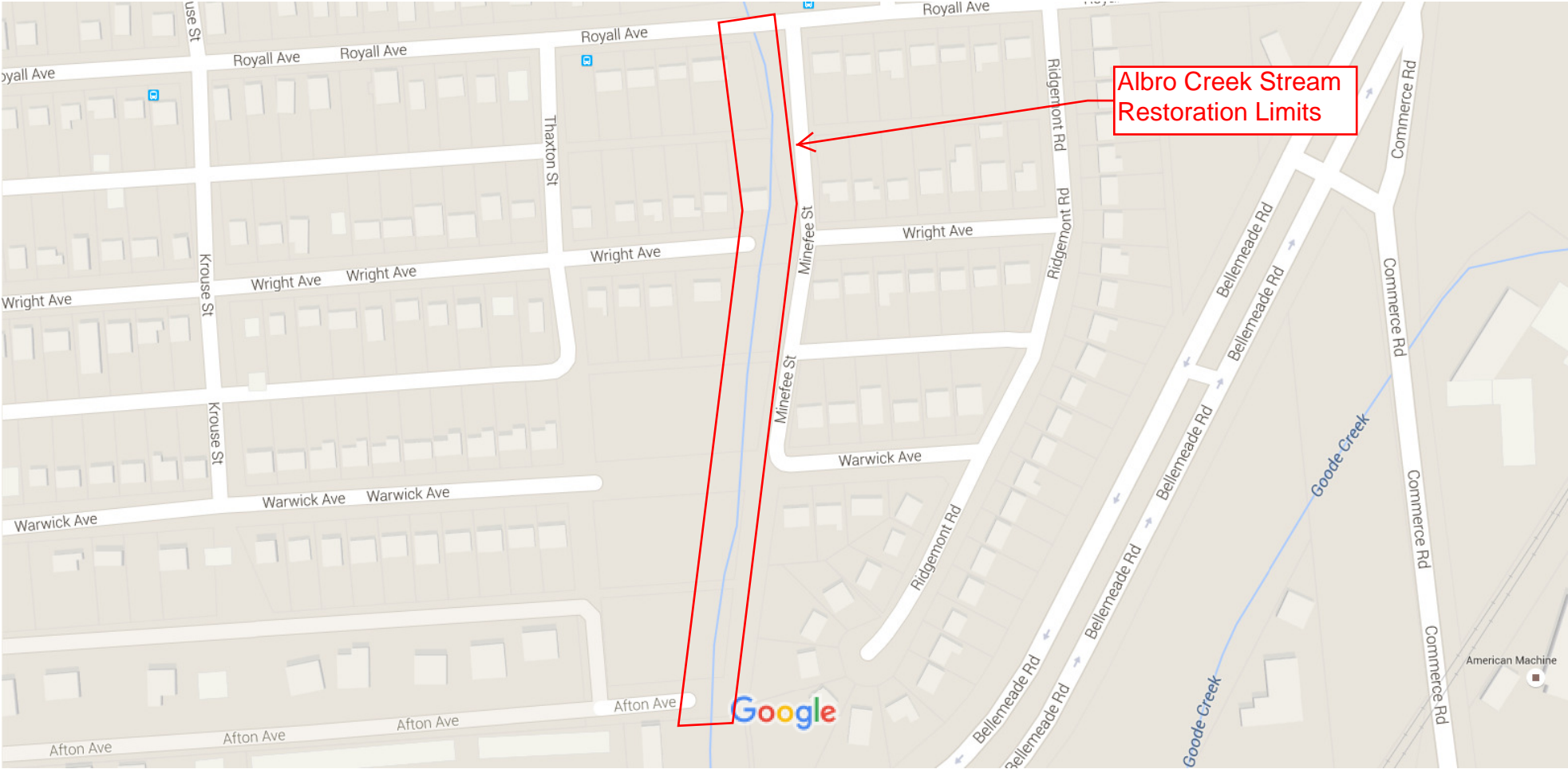
• Reedy Creek Stream Restoration & Constructed Wetlands	\$635,000
• Rattlesnake Creek Stream Restoration	\$552,000
• Goode's Creek Stream Restoration & Constructed Wetlands	\$716,000

Please do not hesitate to contact Walter Gills (804 698-4133) or Kelly Ward (804 698-4295) if you have any questions or need assistance.

Sincerely,

David K. Paylor

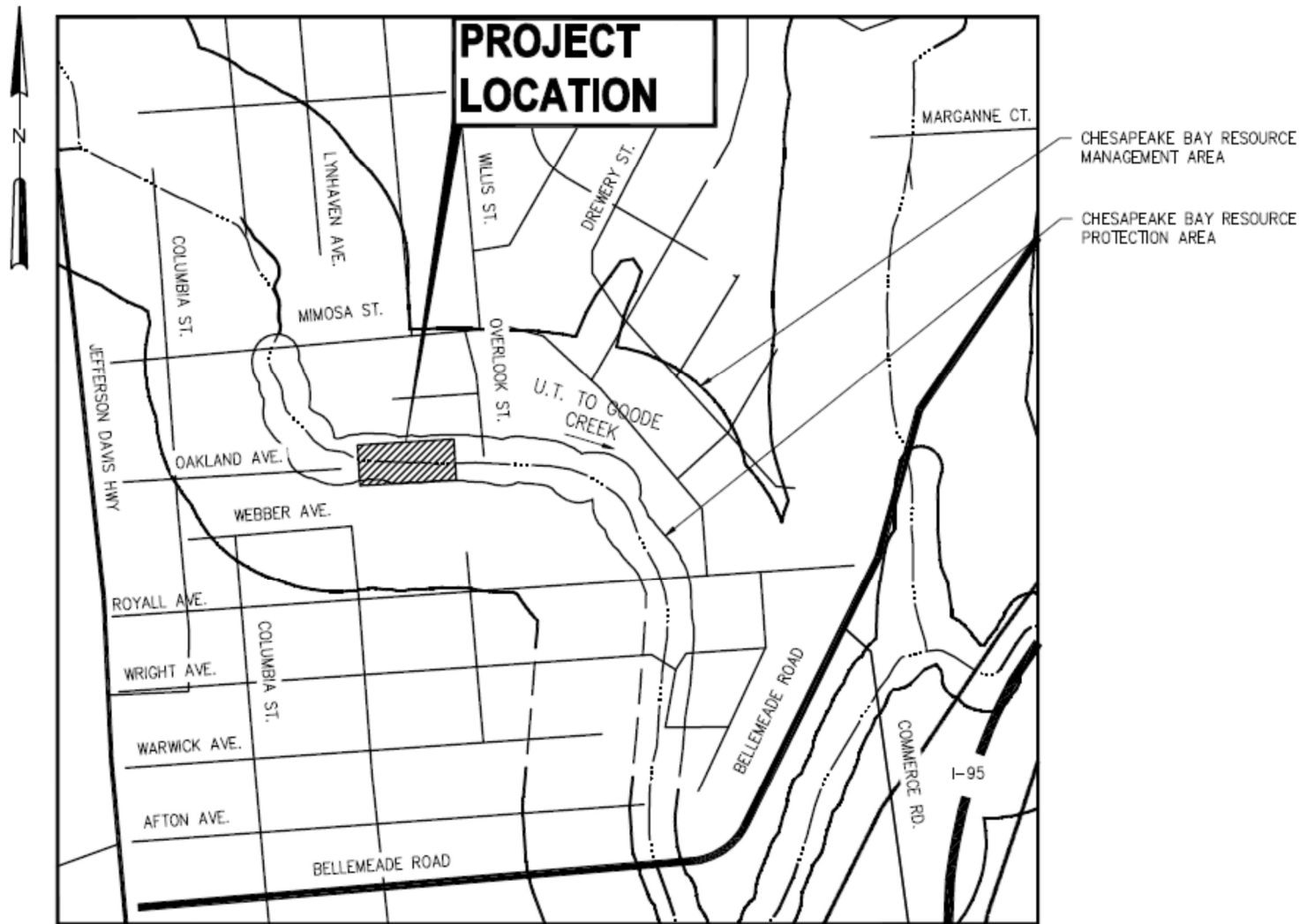
pc: Walter Gills - DEQ/CWFAP



Albro Creek Stream
Restoration Limits

Map data ©2015 Google 100 ft

Bellemeade Creek West of Overlook St. Stream Bank Stabilization Project



VICINITY MAP