

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

SECTION A - ORGANIZATIONAL DATA

Name of Applicant:

Applicant Address:

Contact Person:

Phone: Email:

Name of Engineer:

Engineer Address:

Contact Person:

Phone: Email:

SECTION B - PROPOSED FUNDING

PROJECT FUNDING

a) Amount of SLAF Grant Funds Requested

	Source of Match Funds	Amount	CHECK BOX IF COMMITTED
1	Stormwater Utility Budget	\$552,000	✓
2			
3			

b) Total Other Funding Available (1 + 2 + 3 ...)

c) Total Project Cost (a + b)

*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 Longitude

(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

River Basin for Receiving Stream / Waterbody

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	10/2014
b.	Completion of Plans/Specifications	09/2015
c.	Plans and Specs Approved	10/2015
d.	Advertise for Bids	9/2015
e.	Bid Opening	11/2015
f.	Award Contracts	12/2015
g.	Estimated Construction Time (expressed in months)	7

SECTION G -PROJECT BUDGET INFORMATION

Legal / Administration	\$11,000
Land, Right-of-Way	\$0
Architectural Engineering Basic Fees	\$200,000
Project Inspection Fees	\$33,000
Other (Explain)	\$0
Stormwater BMP Construction	\$750,000
Contingencies	\$110,000
TOTAL*	\$1,104,000*

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

METHODOLOGY FOR CALCULATING TOTAL PHOSPHORUS REDUCTION

RATTLESNAKE CREEK STREAM RESTORATION PROJECT

For the purpose of determining stormwater pollution reduction, Total Phosphorus (TP) is the representative pollutant that will serve as a surrogate for other pollutants of concern.

The initial TP loads for the approximately 837 acre watershed draining to Rattlesnake Creek upstream of the proposed stream restoration project site (see attached Watershed Drainage Area Map) was calculated utilizing the Site Tab of the Virginia Runoff Reduction Method Spreadsheet (Version 2.8, June 2014; 2011 BMP Stds & Specs). The initial (current conditions) calculated TP load is approximately 551 lbs/yr (see the attached Virginia Runoff Reduction Method Spreadsheet).

As part of the stream restoration efforts, the Forested land cover project site is planned to be bush hogged to allow access for construction equipment; following construction activities, the soils will be restored and the entire project site will be reforested to return the site to a natural vegetated state.

The Rattlesnake Creek Stream Restoration Project is an urban stream restoration project that will be based on natural channel design practices to emphasize contribution to stream functional improvements, while reducing stormwater pollutants in an urban watershed of more than 20% impervious cover.

The TP load reduction (in pounds) as a result of this project was determined per the SLAF Program Guidelines, Attachment A List of BMPs. On this list, Urban Stream Restoration is listed as Chesapeake Bay Program BMP Practice 18. For this BMP practice, the annual TP Mass Load Removal is calculated in pounds of TP removal per linear foot of stream restoration. The SLAF Program Guidelines indicates the annual TP Mass Load Removal is to be calculated using a removal rate of 0.068 lbs/linear feet restored.

The identified stream reach of Rattlesnake Creek is approximately 1,500 linear feet of impaired stream channel. The following annual total phosphorus load reduction is based on the SLAF Program Guidelines indicated TP Mass Load Removal and assumed length of existing stream channel:

$$(1,500 \text{ linear feet}) \times (0.068 \text{ lbs/linear feet}) = 102 \text{ lbs/yr}$$

The revised interim rate for TSS reduction is 44.88 lbs/ft/year as given by the recommendations of the Expert Panel to define removal rates for individual stream restoration projects (Sept 8, 2014 revision):

$$(1,500 \text{ linear feet}) \times \left(44.88 \frac{\text{lbs}}{\text{linear}} \text{ ft/year}\right) = 67,320 \text{ lbs of sediment per year}$$

Virginia Runoff Reduction Method ReDevelopment Worksheet v2.8

To be used with 2011 BMP Standards and Specifications

Site Data

Project Name: Rattlesnake Creek Stream Restoration Project - Watershed Loading

Date: 10/14/2014

	data input cells
	calculation cells
	constant values

Post-ReDevelopment Project & Land Cover Information **Total Disturbed Acreage** 1.66

Constants

Annual Rainfall (inches)	23		
Target Rainfall Event (inches)	1.00		
Phosphorus EMC (mg/L)	0.26	Nitrogen EMC (mg/L)	1.86
Target Phosphorus Target Load (lb/acre/yr)	0.41		
P _i	0.90		

Pre-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	188.07	70.81	33.48	292.14
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	248.88	93.43	44.28	386.59
Impervious Cover (acres)	0.00	107.15	25.07	25.62	157.84
				Total	836.57

Post-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	188.07	70.81	33.48	292.14
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	248.88	93.43	44.28	386.59
Impervious Cover (acres)	0.00	107.15	25.07	25.62	157.84
				Total	836.57

Area Check

Okay	Okay	Okay	Okay
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Rv Coefficients

	A soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Land Cover Summary

	Listed	Adjusted ¹	Land Cover Summary	Land Cover Summary
			Post-ReDevelopment	Post-ReDevelopment New Impervious
Forest/Open Space Cover (acres)	292.14	292.14	Forest/Open Space Cover (acres)	292.14
Composite Rv(forest)	0.03	0.03	Composite Rv(forest)	0.03
% Forest	35%	35%	% Forest	35%
Managed Turf Cover (acres)	386.59	386.59	Managed Turf Cover (acres)	386.59
Composite Rv(turf)	0.21	0.21	Composite Rv(turf)	0.21
% Managed Turf	46%	46%	% Managed Turf	46%
Impervious Cover (acres)	157.84	157.84	ReDev. Impervious Cover (acres)	157.84
Rv(impervius)	0.95	0.95	Rv(impervius)	0.95
% Impervius	19%	19%	% Impervius	19%
Total Site Area (acres)	836.57	836.57	Total ReDev. Site Area (acres)	836.57
Site Rv	0.29	0.26	ReDev. Site Rv	0.26
			New Impervious Cover (acres)	0.00
			Rv(impervius)	0.95
			% Impervius	Check Area
			Total New Dev. Site Area (acres)	0.00
			New Dev. Site Rv	0.95

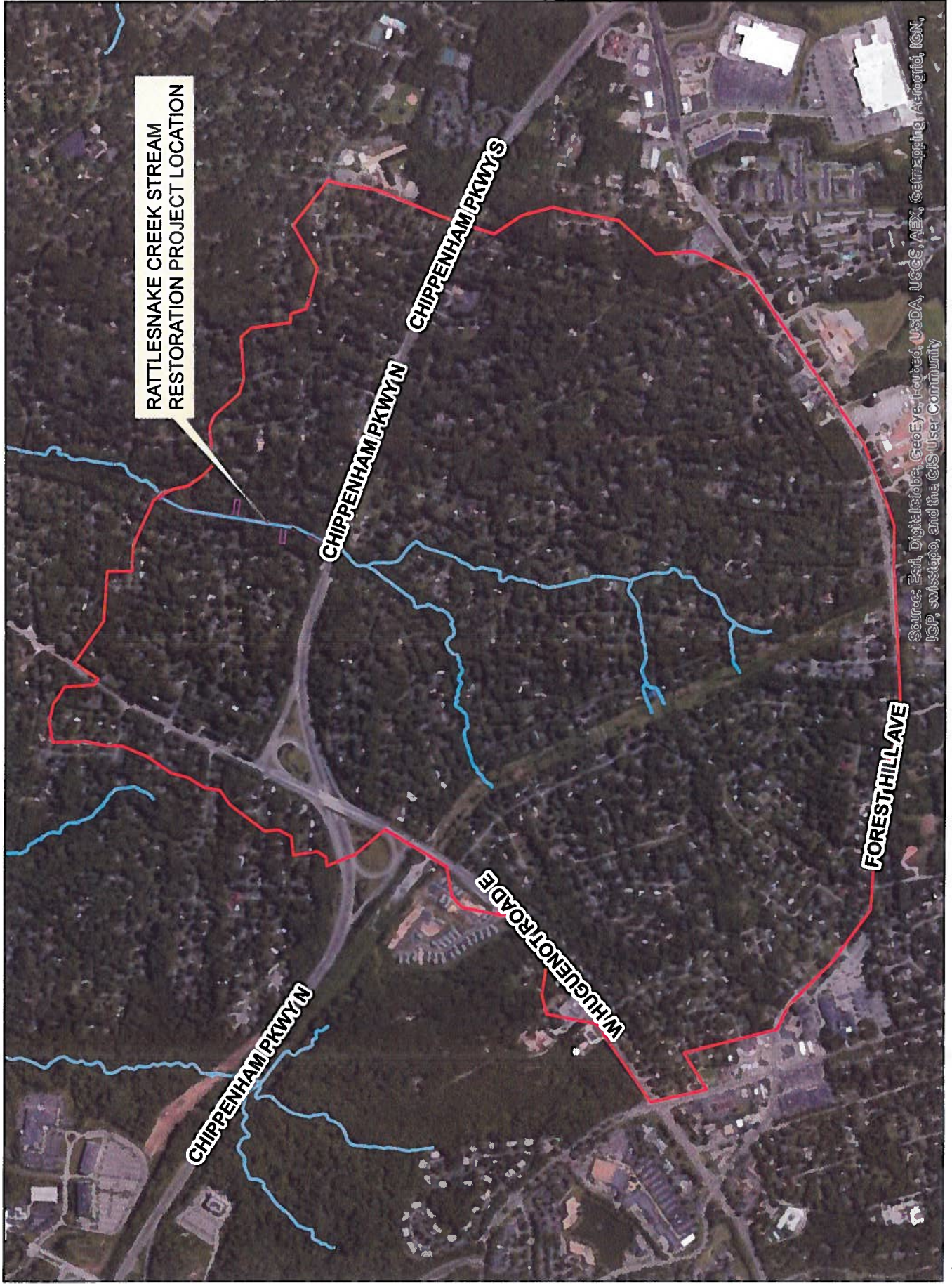
	Pre-Development	Post-Development
Pre-Development Treatment Volume (acre-ft)	20.1240	20.1240
Post-Development Treatment Volume (acre-ft)		20.1240
Pre-Development Treatment Volume (cubic feet)	876.602	876.602
Post-Development Treatment Volume (cubic feet)		876.602
Pre-Development Load (TP) (lb/yr)	550.77	550.77
Post-Development Load (TP) (lb/yr)		550.77

¹Adjusted Land Cover Summary reflects the pre redevelopment land cover minus the pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover. The adjusted total acreage is consistent with the Post Redevelopment acreage (minus the acreage of new impervious cover). The load reduction requirement for the new impervious cover to meet the new development load limit is computed in Column I.

Maximum % Reduction Required Below Pre-ReDevelopment Load	20%	
TP Load Reduction Required for Redeveloped Area (lb/yr)	110.15	TP Load Reduction Required for New Impervious Area (lb/yr) 0.00
Total Load Reduction Required (lb/yr)	110.15	

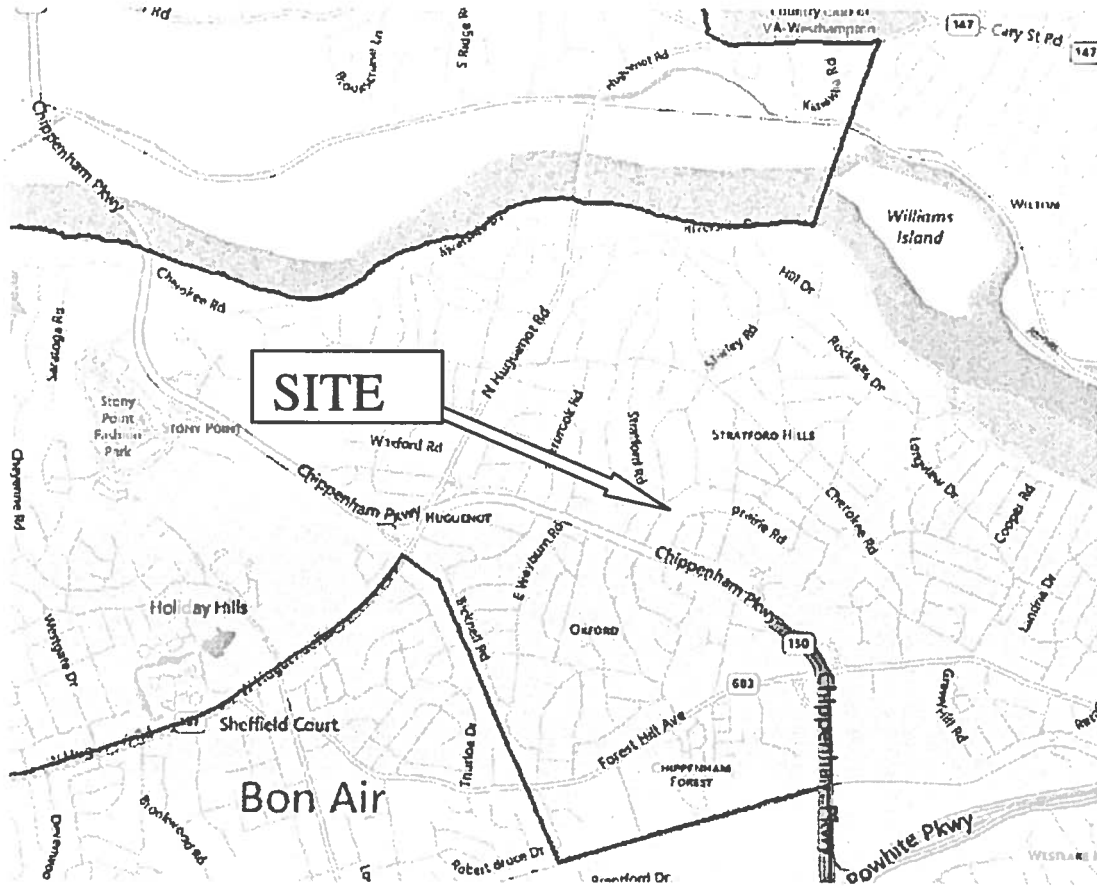
Pre-Development Load (TN) (lb/yr)	3940.10	Post-Development Load (TN) (lb/yr)	3940.10
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RATTLESNAKE CREEK STREAM RESTORATION PROJECT - WATERSHED MAP





SITE MAP



VICINITY MAP

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.

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