

# 1943 - CID510112\_PetersburgCity\_CFPF: Henrico Street Drainage Improvements

## Application Details

**Funding Opportunity:** 1447-Virginia Community Flood Preparedness Fund - Project Grants - CY23 Round 4  
**Funding Opportunity Due Date:** Nov 12, 2023 11:59 PM  
**Program Area:** Virginia Community Flood Preparedness Fund  
**Status:** Under Review  
**Stage:** Final Application

**Initial Submit Date:** Nov 10, 2023 4:03 PM  
**Initially Submitted By:** Darryl Walker  
**Last Submit Date:**  
**Last Submitted By:**

## Contact Information

### Primary Contact Information

**Active User\*:** Yes  
**Type:** External User  
**Name\*:** Mr. Darryl Walker  
Salutation First Name Middle Name Last Name  
**Title:**  
**Email\*:** [dwalker@petersburg-va.org](mailto:dwalker@petersburg-va.org)  
**Address\*:** 1340 E. Washington Street  
  
Petersburg Virginia 23803  
City State/Province Postal Code/Zip  
**Phone\*:** (804) 733-2357 Ext.  
Phone  
### ### ####  
**Fax:** ### ### ####  
**Comments:**

### Organization Information

**Status\*:** Approved  
**Name\*:** PETERSBURG CITY  
**Organization Type\*:** Local Government  
**Tax ID\*:**

**Unique Entity Identifier (UEI)\*:**

**Organization Website:** [sturille@petersburg-va.org](mailto:sturille@petersburg-va.org)

**Address\*:** City of Petersburg  
135 N. Union Street

Petersburg Virginia 23803  
City State/Province Postal Code/Zip

**Phone\*:** (804) 733-2300 Ext.  
### ### ####

**Fax:** ### ### ####

**Benefactor:**

**Vendor ID:**

**Comments:**

## VCFPF Applicant Information

### *Project Description*

**Name of Local Government\*:** Petersburg City

Your locality's CID number can be found at the following link: [Community Status Book Report](#)

**NFIP/DCR Community Identification Number (CID)\*:** 510112

If a state or federally recognized Indian tribe,

**Name of Tribe:**

**Authorized Individual\*:** March Altman  
First Name Last Name

**Mailing Address\*:** 135 N Union Street  
Address Line 1  
Address Line 2  
  
Petersburg Virginia 23803  
City State Zip Code

**Telephone Number\*:** 804-733-2300

**Cell Phone Number\*:** 804-733-2301

**Email\*:** [maltman@petersburg-va.org](mailto:maltman@petersburg-va.org)

Is the contact person different than the authorized individual?

**Contact Person\*:** Yes

**Contact:** Joanne Williams  
First Name Last Name  
1340 East Washington Street  
Address Line 1  
Address Line 2  
  
Petersburg Virginia 23803  
City State Zip Code

**Telephone Number:** 804-347-3321

**Cell Phone Number:** 804-347-3321

**Email Address:** [jwilliams@petersburg-va.org](mailto:jwilliams@petersburg-va.org)

Enter a description of the project for which you are applying to this funding opportunity

**Project Description\*:**

The City and James River Association are currently in the process of developing construction documents for implementation of the Henrico Street Drainage Improvement project using grant funds from the National Fish and Wildlife Foundation and matching funds from the City. Funding support from the Community Flood Preparedness Fund will enable the City to procure a construction contractor to complete the storm water system upgrades.

Low-income geographic area means any locality, or community within a locality, that has a median household income that is not greater than 80 percent of the local median household income, or any area in the Commonwealth designated as a qualified opportunity zone by the U.S. Secretary of the Treasury via his delegation of authority to the Internal Revenue Service. A project of any size within a low-income geographic area will be considered.

Is the proposal in this application intended to benefit a low-income geographic area as defined above?

**Benefit a low-income geographic area\*:** Yes

Information regarding your census block(s) can be found at [census.gov](https://www.census.gov)

**Census Block(s) Where Project will Occur\*:** 2011, 2013, 2014, 2015, 2016, 2021, 2022

**Is Project Located in an NFIP Participating Community?\*** Yes

**Is Project Located in a Special Flood Hazard Area?\*** No

**Flood Zone(s) (if applicable):** N/A

**Flood Insurance Rate Map Number(s) (if applicable):** 5101120026D

## Eligibility CFPF - Round 4 - Projects

### Eligibility

Is the applicant a local government (including counties, cities, towns, municipal corporations, authorities, districts, commissions, or political subdivisions created by the General Assembly or pursuant to the Constitution or laws of the Commonwealth, or any combination of these)?

**Local Government\*:** Yes  
Yes - Eligible for consideration  
No - Not eligible for consideration

Does the local government have an approved resilience plan and has provided a copy or link to the plan with this application?

**Resilience Plan\*:** Yes  
Yes - Eligible for consideration under all categories  
No - Eligible for consideration for studies, capacity building, and planning only

If the applicant is not a town, city, or county, are letters of support from all affected local governments included in this application?

**Letters of Support\*:** N/A  
Yes - Eligible for consideration  
No - Not eligible for consideration  
N/A - Not applicable

Has this or any portion of this project been included in any application or program previously funded by the Department?

**Previously Funded\*:** No  
Yes - Not eligible for consideration  
No - Eligible for consideration

Has the applicant provided evidence of an ability to provide the required matching funds?

**Evidence of Match Funds\*:** N/A  
Yes - Eligible for consideration  
No - Not eligible for consideration  
N/A - Match not required

## Scoring Criteria for Flood Prevention and Protection Projects - Round 4

## Scoring

### Category Scoring:

Hold CTRL to select multiple options

**Project Category\*:** All other projects

Is the project area socially vulnerable? (based on ADAPT Virginia's Social Vulnerability Index Score)

### Social Vulnerability Scoring:

Very High Social Vulnerability (More than 1.5)

High Social Vulnerability (1.0 to 1.5)

Moderate Social Vulnerability (0.0 to 1.0)

Low Social Vulnerability (-1.0 to 0.0)

Very Low Social Vulnerability (Less than -1.0)

**Socially Vulnerable\*:** High Social Vulnerability (1.0 to 1.5)

Is the proposed project part of an effort to join or remedy the community's probation or suspension from the NRP?

**NFIP\*:** No

Is the proposed project in a low-income geographic area as defined below?

"Low-income geographic area" means any locality, or community within a locality, that has a median household income that is not greater than 80 percent of the local median household income, or any area in the Commonwealth designated as a qualified opportunity zone by the U.S. Secretary of the Treasury via his delegation of authority to the Internal Revenue Service. A project of any size within a low-income geographic area will be considered.

**Low-Income Geographic Area\*:** Yes

Projects eligible for funding may also reduce nutrient and sediment pollution to local waters and the Chesapeake Bay and assist the Commonwealth in achieving local and/or Chesapeake Bay TMDLs. Does the proposed project include implementation of one or more best management practices with a nitrogen, phosphorus, or sediment reduction efficiency established by the Virginia Department of Environmental Quality or the Chesapeake Bay Program Partnership in support of the Chesapeake Bay TMDL Phase III Watershed Implementation Plan?

**Reduction of Nutrient and Sediment Pollution\*:** No

Does this project provide community scale benefits?

**Community Scale Benefits\*:** Less than 25% of census block

Expected Lifespan of Project

**Expected Lifespan of Project\*:** Over 20 Years

### Comments:

Storm sewer system upgrades are typically estimated to have a lifespan of 50-years or more.

## Scope of Work - Projects - Round 4

### Scope of Work

#### Upload your Scope of Work

Please refer to Part IV, Section B. of the grant manual for guidance on how to create your scope of work

**Scope of Work\*:** [CID510112\\_CityofPetersburg\\_CFPF-5\\_Proj.pdf](#)

### Comments:

### Budget Narrative

**Budget Narrative Attachment\*:** [Strm\\_Upgrades\\_Budget Narrative Attachment.pdf](#)

### Comments:

## Scope of Work Supporting Information - Projects

### Supporting Information - Projects

Provide population data for the local government in which the project is taking place

**Population\*:** 33394.00

Provide information on the flood risk of the project area, including whether the project is in a mapped floodplain, what flood zone it is in, and when it was last mapped. If the property or area around it has been flooded before, share information on the dates of past flood events and the amount of damage sustained

**Historic Flooding data and Hydrologic Studies\*:** [3 - Historic Flood Damage Data and Images.pdf](#)

Include studies, data, reports that demonstrate the proposed project minimizes flood vulnerabilities and does not create flooding or increased flooding (adverse impact) to other properties

**No Adverse Impact\*:** [No Adverse Impact Statement.pdf](#)

Include supporting documents demonstrating the local government's ability to provide its share of the project costs. This must include an estimate of the total project cost, a description of the source of the funds being used, evidence of the local government's ability to pay for the project in full or quarterly prior to reimbursement, and a signed pledge agreement from each contributing organization

**Ability to Provide Share of Cost\*:** [Ability to Provide Share of Cost Statement.pdf](#)

A benefit-cost analysis must be submitted with the project application

**Benefit-Cost Analysis\*:** [Benefit Cost Analysis Statement.pdf](#)

Provide a list of repetitive loss and/or severe repetitive loss properties. Do not provide the addresses for the properties, but include an exact number of repetitive loss and/or severe repetitive loss structures within the project area

**Repetitive Loss and/or Severe Repetitive Loss Properties\*:** [Repetitive Loss Statement.pdf](#)

Describe the residential and commercial structures impacted by this project, including how they contribute to the community such as historic, economic, or social value. Provide an exact number of residential structures and commercial structures in the project area

**Residential and/or Commercial Structures\*:**

The Lakemont neighborhood consists of residential structures, single family and multi-family; a school, commercial structures, and some faith-based institutions. Implementation of the storm sewer improvement projects will result in direct benefit in reduction in flood risk for at least 200 impacted properties.

If there are critical facilities/infrastructure within the project area, describe each facility

**Critical Facilities/Infrastructure\*:**

Lakemont Elementary School is within the overall project area.

Explain the local government's financial and staff resources. How many relevant staff members does the local government have? To what relevant software does the local government have access? What are the local government's capabilities?

**Financial and Staff Resources\*:**

The City of Petersburg's need for assistance is well documented in terms of financial and staff limitations. The city has few staff available to implement the projects, so will rely upon a Consultant for project/grant administration in close collaboration with Department of Public Works staff, primarily the Stormwater Program Manager.

Identify and describe the goals and objectives of the project. Include a description of the expected results of the completed project and explain the expected benefits of the project. This may include financial benefits, increased awareness, decreased risk, etc.

**Goals and Objectives\*:**

The primary goal of this project will be completion of additional tasks associated with the implementation of storm sewer system upgrades to resolve localized flooding. These improvements will be made within 3 years of the funding being acquired.

Outline a plan of action laying out the scope and detail of how the proposed work will be accomplished with a timeline identifying expected completion dates. Determine milestones for the project that will be used to track progress. Explain what deliverables can be expected at each milestone, and what the final project deliverables will be. Identify other project partners

**Approach, Milestones, and Deliverables\*:** [Approach Milestones and Deliverables.docx](#)

Where applicable, briefly describe the relationship between this project and other past, current, or future resilience projects. If the applicant has received or applied for any other grants or loans, please identify those projects, and, if applicable, describe any problems that arose with meeting the obligations of the grant and how the obligations of this project will be met

**Relationship to Other Projects\*:**

In 2013, the city received a technical assistance grant from the National Fish and Wildlife Foundation to implement a GIS database and develop a City-wide Water Quality Master Plan. During the development of the Water Quality Master Plan, work sessions were conducted with City staff to identify drainage problem areas throughout the city. As a result, several neighborhood drainage studies were identified as priority to better understand the root cause of repetitive flooding and routine maintenance issues. Through partnerships and funding assistance, the city has been able to identify and prioritize drainage improvement projects in the Lakemont Neighborhood in the City's Ward 1. This project emerged from the

Lakemont Neighborhood Drainage Study (2019), which investigated flooding issues in the neighborhood and developed several future improvements projects to resolve flooding issues. A Preliminary Engineering Report for the Battlefield Flood Remediation Project was completed in 2021. Funding for implementation (design and construction) for some of the projects was requested in Round 3, CFPF; however, additional tasks have been identified as essential tasks required prior to implementation, as presented in the work plan.

For ongoing projects or projects that will require future maintenance, such as infrastructure, flood warning and response systems, signs, websites, or flood risk applications, a maintenance, management, and monitoring plan for the projects must be provided

**Maintenance Plan\*:** [5 - Maintenance and Management Plan.pdf](#)

Describe how the project meets each of the applicable scoring criteria contained in Appendix B. Documentation can be incorporated into the Scope of Work Narrative

**Criteria\*:**

The project meets the following criteria:

All Other Projects - The project is an upgrade to the stormwater sewer system within the Lakemont neighborhood (Henrico Street Drainage Improvements) in the City of Petersburg, qualifying as all other projects (10 points)

Social Vulnerability Index - The social vulnerability index score in Census Tract 8101, where the project is located, is 3.0, or Very High Social Vulnerability (10 points).

Community Scale of Benefits - This project will serve to benefit the Lakemont neighborhood where it is located, which accounts for approximately a third of the Census Tract, making the community scale of benefits 25-49% of census block (20 points).

Expected Lifespan of Project - This project will provide long-lasting benefits to the Lakemont neighborhood; concrete structures are generally assumed to last anywhere from 50-100 years, and the upgrades will be made with both current flooding and future resilience in mind. Thus, it is expected that the project will yield results that will last over 20 years (10 points).

Remedy for NFIP probation or suspension - No, this project is not being completed to remedy NFIP probation or suspension (0 points).

Proposed project part of a low-income geographic area - Yes, as described in the Need for Assistance section, the City is a low-income geographic area (10 points).

Proposed project implements a Chesapeake Bay TMDL BMP ? No, the creation of an updated stormwater system is not considered a Chesapeake Bay TMDL BMP (0 points).

Point Total: 60 points

## Budget

### Budget Summary

**Grant Matching Requirement\*:** LOW INCOME - All other Projects Fund 85%/Match 15%

**I certify that my project is in a low-income geographic area:** Yes

**Total Project Amount\*:** \$1,370,000.00

**REQUIRED Match Percentage Amount:** \$205,500.00

### BUDGET TOTALS

**Before submitting your application be sure that you meet the match requirements for your project type.**

**Match Percentage:** 15.00%  
Verify that your match percentage matches your required match percentage amount above.

**Total Requested Fund Amount:** \$1,164,500.00

**Total Match Amount:** \$205,500.00

**TOTAL:** \$1,370,000.00

### Personnel

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

### Fringe Benefits

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

**Travel**

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

**Equipment**

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

**Supplies**

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

**Construction**

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

**Contracts**

Description	Requested Fund Amount	Match Amount	Match Source
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Henrico Street Drainage Improvement Project	\$1,164,500.00	\$205,500.00	N/A - Request 100% of funding from CFPF
	\$1,164,500.00	\$205,500.00	

**Maintenance Costs**

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

**Pre-Award and Startup Costs**

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

**Other Direct Costs**

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

**Long and Short Term Loan Budget - Projects - VCFPF**

**Budget Summary**

Are you applying for a short term, long term, or no loan as part of your application?

If you are not applying for a loan, select "not applying for loan" and leave all other fields on this screen blank

**Long or Short Term\*:** Not Applying for Loan

**Total Project Amount:** \$0.00

**Total Requested Fund Amount:** \$0.00

**TOTAL:** \$0.00

**Salaries**

Description	Requested Fund Amount
No Data for Table	

**Fringe Benefits**

Description	Requested Fund Amount
No Data for Table	

**Travel**

Description	Requested Fund Amount
No Data for Table	

**Equipment**

Description	Requested Fund Amount
No Data for Table	

**Supplies**

Description	Requested Fund Amount
No Data for Table	

**Construction**

Description	Requested Fund Amount
No Data for Table	

**Contracts**

Description	Requested Fund Amount
No Data for Table	

**Other Direct Costs**

Description	Requested Fund Amount
No Data for Table	

Supporting Documentation



## Supporting Documentation

Named Attachment	Required	Description	File Name	Type	Size	Upload Date
Detailed map of the project area(s) (Projects/Studies)		Project Area Map	<a href="#">1 - Stormwater System Upgrades Map.pdf</a>	pdf	1 MB	11/03/2023 10:46 AM
FIRMette of the project area(s) (Projects/Studies)		FIRMette of the Project Area	<a href="#">2 - FIRMette.pdf</a>	pdf	1 MB	11/03/2023 10:47 AM
Historic flood damage data and/or images (Projects/Studies)		Historic Flood Data and Images	<a href="#">3 - Historic Flood Damage Data and Images.pdf</a>	pdf	4 MB	11/06/2023 09:14 PM
A link to or a copy of the current floodplain ordinance		Current Petersburg Floodplain Ordinance	<a href="#">4 - Petersburg Floodplain Ordinance.pdf</a>	pdf	356 KB	11/03/2023 10:47 AM
Maintenance and management plan for project		Maintenance and Management Plan	<a href="#">5 - Maintenance and Management Plan.pdf</a>	pdf	20 KB	11/10/2023 10:48 AM
A link to or a copy of the current hazard mitigation plan		2017 Hazard and Mitigation Plan	<a href="#">6 - Hazard Mitigation Plan.pdf</a>	pdf	4 MB	11/03/2023 10:48 AM
A link to or a copy of the current comprehensive plan		2013 Comprehensive Plan (last updated 2015)	<a href="#">7 - Comprehensive Plan 2015-09-13.pdf</a>	pdf	7 MB	11/03/2023 10:48 AM
Social vulnerability index score(s) for the project area		Henrico St & Richmond Ave SM 2023	<a href="#">8 - Henrico St Richmond Ave SM 2023.pdf</a>	pdf	966 KB	11/03/2023 10:48 AM
Authorization to request funding from the Fund from governing body or chief executive of the local government		Letter of Authorization to Request Funding	<a href="#">9 - Letter of Authorization.pdf</a>	pdf	266 KB	11/09/2023 08:55 AM
Signed pledge agreement from each contributing organization						
Maintenance Plan						
<i>Benefit-cost analysis must be submitted with project applications over \$2,000,000. In lieu of using the FEMA benefit-cost analysis tool, applicants may submit a narrative to describe in detail the cost benefits and value. The narrative must explicitly indicate the risk reduction benefits of a flood mitigation project and compares those benefits to its cost-effectiveness.</i>						
Benefit Cost Analysis						
Other Relevant Attachments		Petersburg Qualified Opportunity Zone	<a href="#">10 - OZ Map.pdf</a>	pdf	12 MB	11/06/2023 09:17 PM

## Letters of Support

Description	File Name	Type	Size	Upload Date
Letter of Support from James River Association	<a href="#">JRA Letter of Support_11.8.23.pdf</a>	pdf	59 KB	11/09/2023 08:55 AM
Other relevant information	<a href="#">Battlefield Drainage Improvements - Preliminary Engineering Report.pdf</a>	pdf	51 MB	11/10/2023 10:40 AM
Partnership for Petersburg Letter of Support	<a href="#">Partnership for Petersburg Letter of Support.pdf</a>	pdf	261 KB	11/10/2023 09:55 AM

## Resilience Plan

### Resilience Plan

Description	File Name	Type	Size	Upload Date
2022 Resilience Plan (Appendices omitted due to file size but can be provided upon request)	<a href="#">Resilience Plan CID 510112.pdf</a>	pdf	1 MB	11/10/2023 03:49 PM

# City of Petersburg, Virginia

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## Resilience Plan

Prepared in accordance with the 2022 Grant Manual for the Virginia  
Community Flood Preparedness Fund

Community Identification Number (CID#): 510112



March 2022



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## **ACRONYMS & ABBREVIATIONS**

Bay	Chesapeake Bay
BMP	Best management practice
CITY	City of Petersburg
CWA	Clean Water Act
DEQ	Virginia Department of Environmental Quality
DPU	Petersburg Department of Public Utilities
DPW	Petersburg Department of Public Works
EMA	Easement and Maintenance Agreement
EPA	United States Environmental Protection Agency
GIS	Geographic information systems
HHW	Household Hazardous Wastes
HUC	Hydrologic Unit Code
IDDE	Illicit Discharge Detection and Elimination
MEP	Maximum Extent Possible
MS4	Municipal Separate Storm Sewer System
NMP	Nutrient Management Plan
SWM	Stormwater Management
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
VPDES	Virginia Pollution Discharge & Elimination System Permit
VSMP	Virginia Stormwater Management Program



## EXECUTIVE SUMMARY

Per the 2022 Grant Manual for the Virginia Community Flood Preparedness Fund, the Resilience Plan must include the following elements:

1. It is project-based with projects focused on flood control and resilience.
2. It incorporates nature-based infrastructure to the maximum extent possible.
3. It includes considerations of all parts of a locality regardless of socioeconomics or race.
4. It includes coordination with other local and inter-jurisdictional projects, plans, and activities and has a clearly articulated timeline or phasing for plan implementation.
5. Is based on the best available science, and incorporates climate change, sea level rise, storm surge (where appropriate), and current flood maps.

The City of Petersburg, by reference, has incorporated the following documents into its initial Resilience Plan, developed March 28, 2022:

- Richmond-Crater Multi-Regional Hazard Mitigation Plan (2017 Update): Executive Summary for the City of Petersburg: [http://www.craterpdc.org/environment/documents/hazmit2017/Petersburg\\_HMP\\_JusSum\\_Maps\\_2017.pdf](http://www.craterpdc.org/environment/documents/hazmit2017/Petersburg_HMP_JusSum_Maps_2017.pdf)
- City of Petersburg Comprehensive Plan (2014): <http://www.petersburg-va.org/DocumentCenter/View/1836/Comprehensive-Plan-Working-Master-Copy-CC1?bidId=>
- Draft Comprehensive Plan 2040: <http://www.petersburg-va.org/DocumentCenter/View/6042/2021CompPlan?bidId=>
- Water Quality Master Plan: Appendix A
- Chesapeake Bay TMDL Action Plan: <https://www.petersburgva.gov/295/Stormwater-Management>, and Chesapeake Bay TMDL Action Plan 2021: Appendix B
- Lakemont Drainage Study (2019): Appendix C
- Flood Maps: <https://msc.fema.gov/portal/search?AddressQuery=petersburg#searchresultsanchor>

Consistent with the multitude of objectives of the reference plans, the City of Petersburg is committed to implementing nature-based infrastructure to the maximum extent possible. Please refer to **Table I** for a list of required elements and the specific reference location.



**Table 1. Required Element Reference Table.**

Item #	Required Item	Reference Document (Page #)	Rationale
1	Project-based (focused on flood control and resilience).	Hazard Mitigation Plan (pages 9-11)	Please refer specifically to Petersburg-1 and Petersburg-15 of the Hazard Mitigation Plan.
2	Nature-based infrastructure (MEP).	Resilience Plan Executive Summary (pg. 3) Draft Comprehensive Plan 2040 (page 5) Chesapeake Bay TMDL Action Plan (all inclusive)	The City of Petersburg is committed to incorporating nature-based solutions to the maximum extent possible. Refer to the Executive Summary of this document and item number 4 of the Draft Comprehensive Plan 2040 where the City will include sustainable measures to provide quality groundwater and surface water. Further, stream restoration, a nature-based solution was specifically studied and identified as a strategy in the City’s Chesapeake Bay TMDL Action Plans (2015 and 2021).
3	Inclusive City-wide regardless of socioeconomics or race.	Hazard Mitigation Plan (all inclusive) Draft Comprehensive Plan 2040 (all inclusive) City-wide Water Quality Master Plan (all inclusive) Chesapeake Bay TMDL Action Plan (all inclusive) Flood Maps (all inclusive)	The City has developed multiple planning documents that encompass the entire jurisdiction, regardless of socioeconomics or race. These planning level documents are then used to further localized studies to identify projects. An example of this model is the Water Quality Master Plan that identified the need for neighborhood drainage studies and the subsequent Lakemont Neighborhood Drainage Study.
4	Inter-jurisdictional with clearly articulated timeline or phasing.	Hazard Mitigation Plan (pages 9-11) Chesapeake Bay TMDL Action Plan (all inclusive) Lakemont Neighborhood Drainage Study (page 11)	The Hazard Mitigation Plan includes a table with projects, or strategies, identified on pages 9-11 that include a column titled timeframe for specific implementation. The Chesapeake Bay TMDL Action Plan includes nature-based solutions that are intended to be completed by June 30, 2025, in accordance with the City’s MS4 Permit. The Lakemont Neighborhood Drainage Study, which is an outcome of the City’s Water Quality Master Plan includes projects that were prioritized (phasing) by the impacted community and are currently being implemented.
5	Based on best available science, incorporates climate change, sea level rise, storm surge, and current flood maps.	Chesapeake Bay TMDL Action Plan (all inclusive) Water Quality Master Plan (pages 1, 3, 14, etc.) Lakemont Neighborhood Drainage Study (pages 7-25) Flood Maps (all inclusive)	The Chesapeake Bay TMDL Action Plan, Water Quality Master Plan, and Lakemont Neighborhood Drainage Study were all prepared by professional engineers by one of the City’s on-call consultants, Timmons Group. Each document was prepared based on best available science, including the most recent and relevant guidance from the Department of Environmental Quality and best engineering practices current at the time of report preparation. The Flood Maps were updated based on best available science and published for public comment in 2021 by FEMA.



# Appendix A



# Appendix B

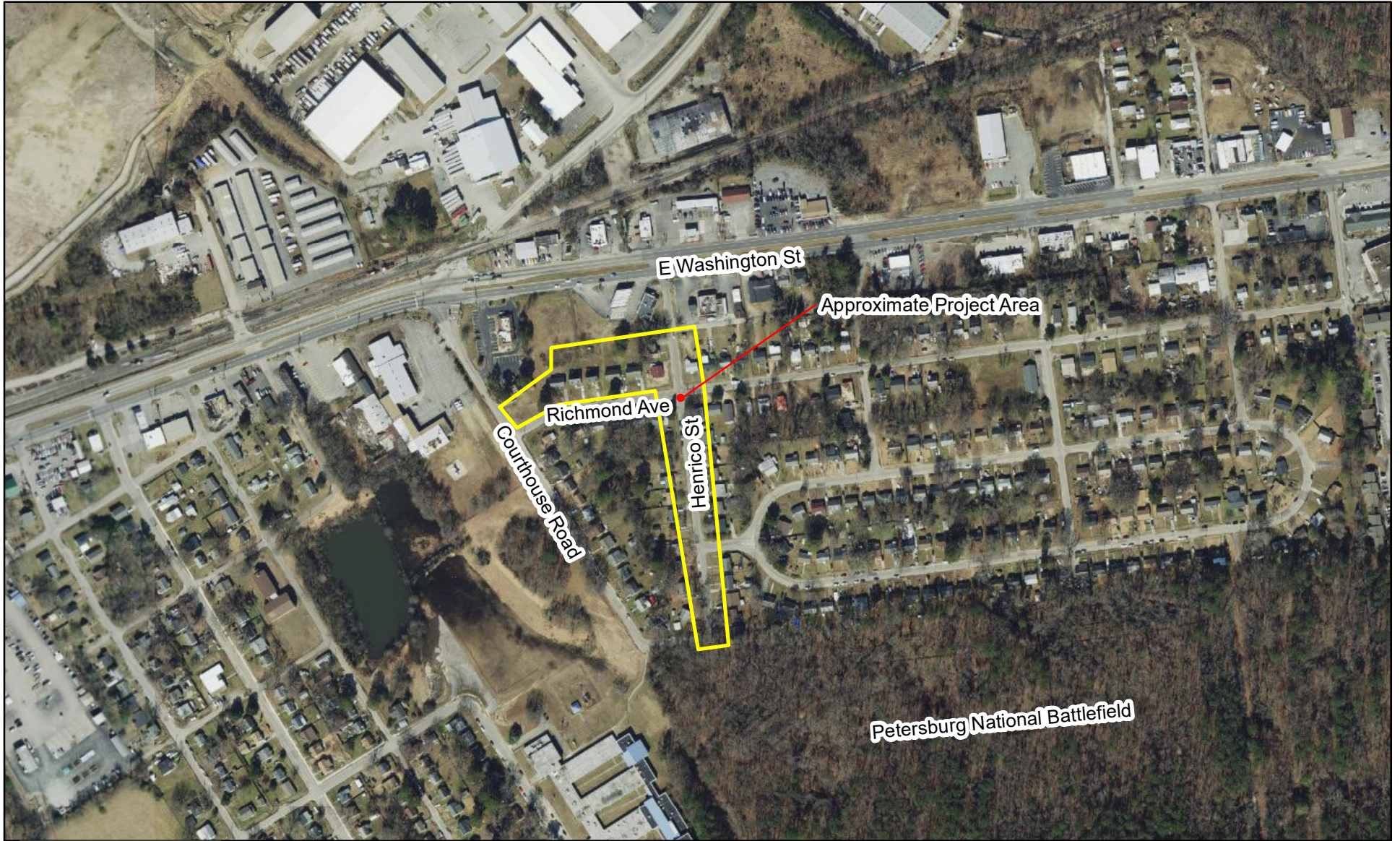




# Appendix C

# CFPF GRANT APPLICATION

## Stormwater System Upgrades

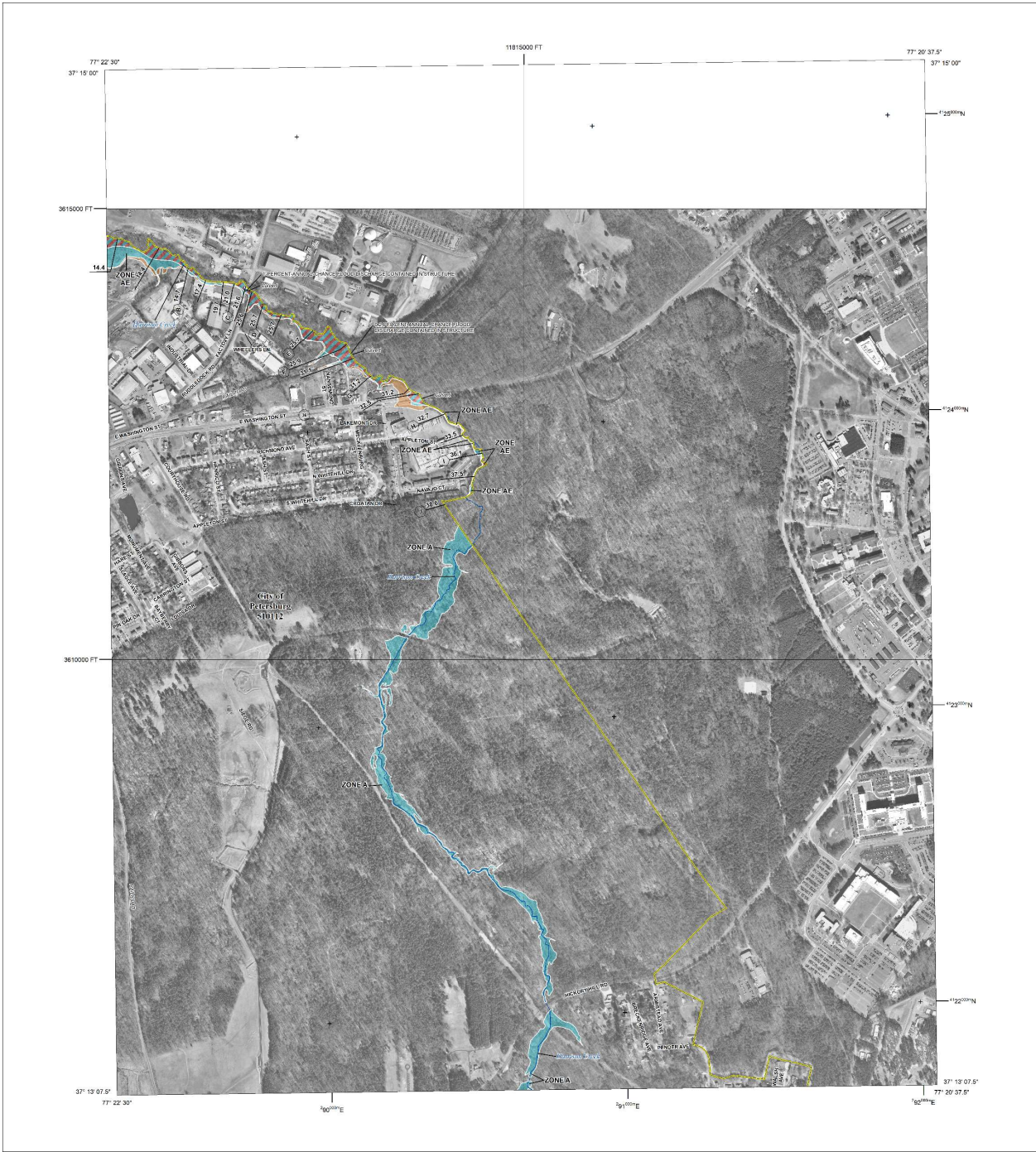


### Legend

 Project Boundary



This map is for informational purposes only, please reference the inspection form for detailed information.



**FLOOD HAZARD INFORMATION**

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT  
 THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING  
 DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT  
[HTTPS://MSC.FEMA.GOV](https://msc.fema.gov)

- SPECIAL FLOOD HAZARD AREAS**
  - Without Base Flood Elevation (BFE) Zone AE, AH, AR
  - With BFE or Depth Zone AE, AO, AH, VE, AR
  - Regulatory Floodway
  - 0.2% Annual Chance Flood Hazard, Areas of less than one square mile
  - Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
  - Future Conditions 1% Annual Chance Flood Hazard Zone X
  - Area with Reduced Flood Risk due to Levee See Notes, Zone X
  - Area with Flood Risk due to Levee Zone D
- OTHER AREAS OF FLOOD HAZARD**
  - NO SCREEN
  - Areas of Minimal Flood Hazard Zone X
  - Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES**
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- CROSS SECTIONS**
  - Cross Sections with 1% Annual Chance Water Surface Elevation
  - Coastal Transect
  - Profile Baseline
  - Hydrographic Feature
  - Base Flood Elevation Line (BFE)
- OTHER FEATURES**
  - Limit of Study
  - Jurisdiction Boundary

**NOTES TO USERS**

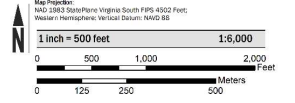
For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with the FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP), in general, please call the FEMA Mapping and Insurance Helpline at 1-877-FEMA-Map (1-877-369-6271) or visit the FEMA Flood Map Service Center website at [floodmaps.fema.gov](http://floodmaps.fema.gov). Additional products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities adjoining land in adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM index. These may be ordered directly from the Flood Map Service Center at the number listed above.

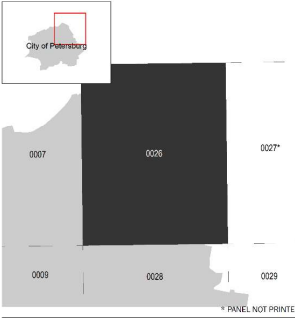
For community and countywide map data refer to the Flood Insurance Study Report for this jurisdiction. To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-425-6800.

Base map information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). This information was derived from digital orthophotography at a 2-foot resolution from photography dated 09/16.

**SCALE**



**PANEL LOCATOR**



**NATIONAL FLOOD INSURANCE PROGRAM**  
 FLOOD INSURANCE RATE MAP  
 CITY OF PETERSBURG, VIRGINIA  
 PANEL 26 of 45

COMMUNITY	NUMBER	PANEL	SUFFIX
PETERSBURG, CITY OF	510112	0026	D

VERSION NUMBER: 2.6.4.6  
 MAP NUMBER: 5101120026D  
 MAP REVISED: DECEMBER 15, 2022

## Chapter 58 - FLOODS

*Footnotes:*

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**Cross reference**— *Buildings and building regulations, ch. 22; environment, ch. 50; health and sanitation, ch. 62; planning, ch. 82; streets, sidewalks and other public places, ch. 98; subdivisions, app. A; utilities, ch. 114; waterways, ch. 122; zoning, app. B.*

**State Law reference**— *Flood Damage Reduction Act, Code of Virginia, § 10.1-600 et seq.*

## ARTICLE I. - IN GENERAL

Secs. 58-1—58-30. - Reserved.

## ARTICLE II. - FLOODPLAIN MANAGEMENT

*Footnotes:*

--- (2) ---

**Editor's note**— *Ord. No. 11-09, adopted January 18, 2011, amended Article II in its entirety to read as herein set out. Former Article II, §§ 58-31—58-37, 58-56—58-59, 58-76, 58-77, 58-96—58-98, 58-116, 58-136—58-138, 58-156—58-158, 58-176 pertained to similar subject matter, and derived from Code 1981, §§ 13.5-1—13.5-7, 13.5-19—13.5-22, 13.5-34, 13.5-35, 13.5-41—13.5-43, 13.5-50, 13.5-67—13.5-73.*

## DIVISION 1. - GENERALLY

Sec. 58-31. - Purpose.

This article is adopted pursuant to the authority granted to localities by chapter 6 of title 10.1 of the Code of Virginia Flood Protection and Dam Safety (Va. Code § 10.1-600 et. seq.) The purpose of these provisions is to prevent the loss of life and property, the creation of health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base by:

- (1) Regulating uses, activities and development which, acting alone or in combination with other existing or future uses, activities and development, will cause unacceptable increases in flood heights, velocities and frequencies.
- (2) Restricting or prohibiting certain uses, activities and development from locating within areas subject to flooding.
- (3) Requiring all those uses, activities and developments that do occur in floodprone areas to be protected and floodproofed against flooding and flood damage.

- (4) Protecting individuals from buying lands and structures which are unsuited for intended purposes, because of flood hazards.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-32. - Definitions.

Unless the context specifically indicates otherwise, the meaning of terms used in this article shall be as follows:

*Base flood* means a flood that, on the average, is likely to occur once every 100 years (i.e., that has a one percent chance of occurring each year, although such a flood may occur in any year).

*Base flood elevation* means the Federal Emergency Management Agency designated 100-year water surface elevation. The water surface elevation of the base flood in relation to the datum specified on the community's flood insurance rate map. For the purposes of this article, the 100-year flood or one percent annual chance flood.

*Basement* means any area of the building having its floor sub-grade (below ground level) on all sides.

*Crater Regional Building Code Board of Appeals* means the board appointed to review appeals made by individuals with regard to decisions of the building official and/or zoning administrator in the interpretation of this article.

*Development* means any manmade change to improved or unimproved real estate, including but not limited to, buildings or other structures, the placement of manufactured homes, streets and other paving, utilities, filling, grading, excavation, mining, dredging, drilling operations, or storage of equipment or materials.

*Elevated building* means a non-basement building built to have the lowest floor elevated above the ground level by means of fill, solid foundation perimeter walls, pilings, or columns (posts and piers).

*Encroachment* means the advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

*Existing manufactured home park/subdivision* means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before September 18, 1990.

*Expansion to an existing manufactured home park/subdivision* means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

*Flood or flooding* means:

- (1) A general or temporary condition of partial or complete inundation of normally dry land areas from:
  - (a) The overflow of inland or tidal waters; or,
  - (b) The unusual and rapid accumulation or runoff of surface waters from any source.
  - (c) Mudflows which are proximately caused by flooding as defined in paragraph (1)(b) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
- (2) The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (1)(a) of this definition.

*Flood insurance rate map (FIRM)* means an official map of a community, on which the Administrator has delineated both the special hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a digital flood insurance rate map (DFIRM).

*Flood insurance study (FIS)* means an examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudflow and/or flood-related erosion hazards.

*Floodplain* means:

- (1) A relatively flat or low land area adjoining a river, stream or watercourse which is subject to partial or complete inundation; or
- (2) An area subject to the unusual and rapid accumulation or runoff of surface water from any source.

*Floodprone area* means any land area susceptible to being inundated by water from any source.

*Flood proofing* means any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

*Floodway* means the designated area of the floodplain required to carry and discharge floodwaters of a given magnitude. For the purposes of this article, the floodway shall be capable of accommodating a flood of the 100-year magnitude.

*Freeboard* means a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. Freeboard tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization in the watershed. When a freeboard is included in the height of a structure, the flood insurance premiums will be significantly cheaper.

*Highest adjacent grade* means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

*Historic structure* means any structure that is:

- (1) Listed individually in the national register of historic places (a listing maintained by the department of interior) or preliminarily determined by the secretary of the interior as meeting the requirements for individual listing on the national register;
- (2) Certified or preliminarily determined by the secretary of the interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the secretary to qualify as a registered historic district;
- (3) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the secretary of the interior; or
- (4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
  - (a) By an approved state program as determined by the secretary of the interior; or
  - (b) Directly by the secretary of the interior in states without approved programs.

*Lowest floor* means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Federal Code 44CFR § 60.3.

*Manufactured home* means, for the purposes of this article, a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term "manufactured home" does not include a recreational vehicle. For floodplain management purposes the term "manufactured home" also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days.

*Manufactured home park/subdivision* means a parcel (or contiguous parcels) of land divided into two or more lots for rent or sale for the placement of manufactured homes.

*New construction* means, for the purposes of determining insurance rates, structures for which the start of construction commenced on or after March 16, 1981 and includes any subsequent improvements to such structures. For floodplain management purposes, the term "new construction" means structures for which

the start of construction commenced on or after September 18, 1990, and includes any subsequent improvements to such structures.

*New manufactured home park/subdivision* means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after September 18, 1990.

*Recreational vehicle* means, for purposes of this article, a vehicle which is:

- (1) Built on a single chassis.
- (2) Four hundred square feet or less when measured at the largest horizontal projection.
- (3) Designed to be self-propelled or permanently towable by a light duty truck.
- (4) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.

*Shallow flooding area* means a special flood hazard area with base flood depths from one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

*Special flood hazard area* means the land in the floodplain subject to a one percent or greater chance of being flooded in any given year as determined in section 58-56 of this article.

*Start of construction* means, for other than new construction and substantial improvement, under the Coastal Barriers Resource Act (P.L. 97-384), the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation, or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration on any wall, ceiling, floor, or other structural part of a building, whether or not the alteration affects the external dimensions of the building.

*Structure* means for flood plain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.



*Substantial damage* means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

*Substantial improvement* means any reconstruction, rehabilitation, addition or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. This term includes structures which have incurred substantial damage regardless of the actual repair work performed. The term does not, however, include either:

- (1) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to ensure safe living conditions; or
- (2) Any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure.

*Violation* means the failure of a structure or other development to be fully compliant with the community's flood plain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance as required in this article is presumed to be in violation until such time as that documentation is provided.

*Watercourse* means a lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

(Ord. No. 11-09, 1-18-2011)

**Cross reference**— Definitions generally, § 1-2.

Sec. 58-33. - General penalty for violation of article.

Any person who fails to comply with any of the requirements or provisions of this article or directions of the director of planning or any authorized employee of the City of Petersburg shall be guilty of a class 1 misdemeanor as provided in section 1-14 of the Code of the City of Petersburg and subject to the penalties therefore.

In addition to the above penalties, all other actions are hereby reserved, including an action in equity for the proper enforcement of this article. The imposition of a fine or penalty for any violation of, or noncompliance with, this article shall not excuse the violation or noncompliance or permit it to continue; and all such persons shall be required to correct or remedy such violations or noncompliances within a reasonable time. Any structure constructed, reconstructed, enlarged, altered or relocated in noncompliance with this article may be declared by the City of Petersburg to be a public nuisance and abatable as such. Flood insurance may be withheld from structures constructed in violation of this article.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-34. - City disclaimer of liability for flood damages.

The degree of flood protection required by this article is considered reasonable for regulatory purposes, and is based upon scientific and engineering considerations. Floods more severe than the regulatory 100-year flood can and will occur on rare occasions, as flood heights may be increased by natural or manmade causes. The provisions of this article are not intended to imply that lands outside the designated floodplain districts, or development permitted within such districts, will be free from flooding or flood damage. This article shall not create liability on the part of the city, or any officer or employee thereof, for any flood damages that may result under compliance with the provisions of this article or any administrative decision lawfully made pursuant thereto.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-35. - Applicability of article; compliance; abrogations; greater restrictions.

- (a) *Applicability.* The provisions of this article shall apply to all lands within the jurisdiction of the City of Petersburg and identified as being floodprone within this article.
- (b) *Compliance.* No land shall hereafter be developed, and no structure shall be located, relocated, constructed, reconstructed, enlarged, or structurally altered, except in full compliance with the terms and provisions of this article and any other applicable ordinances and regulations which apply to uses within the jurisdiction of this article.
- (c) *Abrogation and greater restrictions.* This article supersedes any article currently in effect in floodprone areas. However, any underlying article shall remain in full force and effect to the extent that the provisions of such article are more restrictive.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-36. - Administration and enforcement; duties of zoning administrator and building inspector.

It shall be the responsibility of the zoning administrator of the city to administer and enforce the provisions of this article; provided, however, that this section shall not be construed to abrogate the authority and responsibility of the building inspector of the city to administer and enforce the provisions of the Virginia Uniform Statewide Building Code, as it applies to development within designated floodplain districts.

(Ord. No. 11-09, 1-18-2011)

**Cross reference**— Administration, ch. 2.

Sec. 58-37. - Building permits required; applications; required information.

- (a) A building permit to erect, construct, reconstruct, enlarge, extend or structurally alter any building or structure within a floodplain district shall be required, as set forth in the Virginia Uniform Statewide Building Code. Applications for building permits shall be filed with the building inspector of the city; and no such permit shall be issued until the applicant has furnished satisfactory evidence that all necessary permits have been received from those governmental agencies from which approval is required by state and federal law and the zoning administrator has reviewed all sites to assure that they are reasonably safe from flooding. Under no circumstances shall any use, activity, and/or development adversely affect the capacity of the channels or floodways of any watercourse, drainage ditch, or any other drainage facility or system.
- (b) In addition to information required by the building code to be provided in conjunction with building permit applications, the following shall be included when the property involved is located, wholly or partially, within a floodplain district:
- (1) The elevation of the 100-year flood, and delineation of the 100-year floodplain.
  - (2) The elevation of the lowest floor, including basement.
  - (3) The elevation to which a nonresidential structure is to be floodproofed.
  - (4) Topographic information showing existing and proposed ground elevations.

(Ord. No. 11-09, 1-18-2011)

Secs. 58-38—58-55. - Reserved.

## DIVISION 2. - DISTRICT BOUNDARIES

Sec. 58-56. - Established; criteria.

- (a) *Areas included; basis for delineation.* The various floodplain districts shall include areas subject to inundation by waters of the 100-year flood. The basis for the delineation of these districts shall be the flood insurance study (FIS) and the flood insurance rate maps (FIRM) for the City of Petersburg prepared by the Federal Emergency Management Agency, Federal Insurance Administration, dated February 4, 2011, and any subsequent revisions or amendments thereto.
- (b) *Floodway district.* The floodway district is delineated for purposes of this article, using the criterion that a certain area within the floodplain must be capable of carrying the waters of the 100-year flood without increasing the water surface elevation of that flood more than one foot, at any point. The areas included in this district are specifically defined in table 5 of the flood insurance study referenced in subsection (a) of this section and shown on the accompanying flood boundary and floodway map.

(c)

*Special floodplain district.* The special floodplain district shall be those areas identified as an AE zone on the maps accompanying the flood insurance study for which 100-year flood elevations have been provided.

- (d) *Approximated floodplain district.* The approximated floodplain district shall be those areas identified as an A or A99 zone on the maps accompanying the flood insurance study. In these zones, no detailed flood profiles or elevations are provided, but the 100-year floodplain boundary has been approximated. For these areas, the 100-year flood elevations and floodway information from federal, state, and other acceptable sources shall be used when available. Where the specific 100-year flood elevation cannot be determined for this area using other sources of data, such as the U.S. Army Corps of Engineers Floodplain Information Reports, U.S. Geological Survey Floodprone Quadrangles, etc., then the applicant for the proposed use, development or activity shall determine this elevation in accordance with hydrologic and hydraulic engineering techniques. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the zoning administrator.
- (e) *Shallow flooding district.* The shallow flooding district shall be those areas identified as zone AO or AH on the maps accompanying the flood insurance study.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-57. - Official floodplain map designated.

The boundaries of the floodplain districts are established, as shown on the flood insurance rate map, which is declared to be a part of this article and which shall be kept on file at the office of the clerk of the city council.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-58. - District boundary changes.

The delineation of any of the floodplain districts may be revised by the city council, where natural or manmade changes have occurred or where more detailed studies conducted or undertaken by the U.S. Army Corps of Engineers, or other qualified agency or individual, document the justification for such change. However, prior to any such change, approval must be obtained from the Federal Insurance Administration.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-59. - Interpretations of boundaries; disputes.

Initial interpretations of the boundaries of the floodplain districts shall be made by the zoning administrator. Should a dispute arise concerning the boundaries of any of the districts, the crater regional building code board of appeals shall make the necessary determination. The person questioning or

contesting the location of the district boundary shall be given a reasonable opportunity to present his case to the board of appeals and to submit his own technical evidence, if he so desires.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-60. - Submitting technical data.

A community's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, a community shall notify the Federal Insurance Administrator of the changes by submitting technical or scientific data. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and flood plain management requirements will be based upon current data.

(Ord. No. 11-09, 1-18-2011)

Secs. 58-61—58-75. - Reserved.

### DIVISION 3. - DISTRICT USES, ACTIVITIES AND DEVELOPMENT

#### Subdivision I. - In General

Sec. 58-76. - District provisions, generally.

- (a) All uses, activities and development occurring within any floodplain district shall be undertaken only upon the issuance of a building permit and requisite zoning approval. Such development shall be undertaken only in strict compliance with the provisions of this article, chapter 102 and all other applicable codes and articles, such as the Virginia Uniform Statewide Building Code. Prior to the issuance of any such permit, the zoning administrator shall require all applications to include evidence of compliance with all applicable state and federal laws.
- (b) Under no circumstances shall any use, activity or development adversely affect the capacity of the channels or floodways of any watercourse, drainage ditch, or any other drainage facility or system.
- (c) New construction and substantial improvements shall be according to the VA USBC, and anchored to prevent flotation, collapse or lateral movement of the structure.
- (d) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state anchoring requirements for resisting wind forces.
- (e)

New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

- (f) New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.
- (g) Electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities, including duct work, shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
- (h) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
- (i) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.
- (j) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

In addition to provisions (a)—(h) above, in all special flood hazard areas, the additional provisions shall apply:

- (k) Prior to any proposed alteration or relocation of any channels or of any watercourse, stream, etc., within this jurisdiction a permit shall be obtained from the U. S. Corps of Engineers, the Virginia Department of Environmental Quality, and the Virginia Marine Resources Commission (a joint permit application is available from any of these organizations). Furthermore, in riverine areas, notification of the proposal shall be given by the applicant to all affected adjacent jurisdictions, the department of conservation and recreation (division of dam safety and floodplain management) and the Federal Insurance Administrator.
- (l) The flood carrying capacity within an altered or relocated portion of any watercourse shall be maintained.

#### Sec. 58-77. - Specific standards.

In all special flood hazard areas where base flood elevations have been provided in the flood insurance study or generated according [to] article 4, section 4.6, the following provisions shall apply:

- (a) Residential construction:
  - (1) New construction or substantial improvement of any residential structure (including manufactured homes) shall have the lowest floor, including basement, elevated to or above the base flood elevation (recommend  $\geq$  one foot freeboard).
- (b) Nonresidential construction:
  - (1)

New construction or substantial improvement of any commercial, industrial, or nonresidential building (or manufactured home) shall have the lowest floor, including basement, elevated to or above the base flood elevation (recommend  $\geq$  one foot freeboard). Buildings located in all A1-30, AE, and AH zones may be floodproofed in lieu of being elevated provided that all areas of the building components below the elevation corresponding to the BFE plus one foot are water tight with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification, including the specific elevation (in relation to mean sea level) to which such structures are floodproofed, shall be maintained by (title of community administrator).

- (c) Elevated buildings: fully enclosed areas, of new construction or substantially improved structures, which are below the regulatory flood protection elevation shall:
- (1) Not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator).
  - (2) Be constructed entirely of flood resistant materials below the regulatory flood protection elevation;
  - (3) Include, in zones A, AO, AE, and A1-30, measures to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet the following minimum design criteria:
    - a. Provide a minimum of two openings on different sides of each enclosed area subject to flooding.
    - b. The total net area of all openings must be at least one square inch for each square foot of enclosed area subject to flooding.
    - c. If a building has more than one enclosed area, each area must have openings to allow floodwaters to automatically enter and exit.
    - d. The bottom of all required openings shall be no higher than one foot above the adjacent grade.
    - e. Openings may be equipped with screens, louvers, or other opening coverings or devices, provided they permit the automatic flow of floodwaters in both directions.
    - f. Foundation enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires

openings as outlined above.

- (d) Manufactured homes, as defined in this article, that are placed or substantially improved on sites:
  - (1) Outside of a manufactured home park or subdivision;
  - (2) In a new manufactured home park or subdivision;
  - (3) In an expansion to an existing manufactured home park or subdivision; or
  - (4) In an existing manufactured home park or subdivision on which a manufactured home has incurred substantial damage, as the result of a flood;shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation and shall be securely anchored to an adequately anchored foundation system to resist floatation, collapse, and lateral movement.
- (e) Manufactured homes to be placed or substantially improved on sites in an existing manufactured home park or subdivision that are not subject to the provisions of subsection (d) of this section shall be elevated so that either:
  - (1) The lowest floor of the manufactured home is at or above the base flood elevation; or
  - (2) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and is securely anchored to an adequately anchored foundation system to resist floatation, collapse, and lateral movement.
- (f) Recreational vehicles placed on sites shall:
  - (1) Be on the site for fewer than 180 consecutive days;
  - (2) Be fully licensed and ready for highway use; or
  - (3) Meet the permit requirements for placement and the elevation and anchoring requirements for manufactured homes in subsection (d) or (e) of this section as appropriate.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-78. - Design criteria for utilities and facilities.

- (a) *Sanitary sewer facilities.* All new or replacement sanitary sewer facilities and private package sewage treatment plants (including all pumping stations and collector systems) shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into the floodwaters. In addition, such facilities shall be located and constructed to minimize or eliminate flood damage or impairment.
- (b)



*Water facilities.* All new or replacement water facilities shall be designed to minimize or eliminate infiltration of floodwaters into the system, and shall be located and constructed to minimize or eliminate flood damages.

- (c) *Drainage facilities.* All storm drainage facilities shall be designed to convey the flow of surface water, without damage to persons or property. The systems shall ensure drainage away from buildings and on-site waste disposal sites. The city council may require a primarily underground system to accommodate frequent floods and a secondary surface system to accommodate larger, less frequent floods. Drainage facilities shall be designed to prevent the discharge of excess runoff onto adjacent properties.
- (d) *Utilities.* All utilities, such as gas lines and electrical and telephone systems, being placed in floodprone areas shall be located, elevated (where possible) and constructed to minimize the chance of impairment during an occurrence of flooding.
- (e) *Streets and sidewalks.* Streets and sidewalks shall be designed to minimize their potential for increasing and aggravating the levels of flood flow. Drainage openings shall be required to sufficiently discharge flood flows without unduly increasing flood heights.

(Ord. No. 11-09, 1-18-2011)

Secs. 58-79—58-95. - Reserved.

Subdivision II. - Floodway District

Sec. 58-96. - Improvements to offset development.

Encroachments, including fill, new construction, substantial improvements and other developments are prohibited unless certification such as hydrologic and hydraulic analyses (with supporting technical data) is provided to the zoning administrator demonstrating that encroachments shall not result in any increase in flood levels during occurrence of the base flood. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently-accepted technical concepts. Such improvements also shall be approved by all appropriate local and state authorities, as required in section 58-76.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-97. - Manufactured homes, recreational vehicles.

The placement of any manufactured home or recreational vehicle within the floodway district is specifically prohibited.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-98. - Permitted activities; prerequisites.

In the floodway district the following activities are permitted, provided they are in compliance with the provisions of this article and are not prohibited by any other ordinance, and provided that they do not require structures, fill or storage of materials and equipment:

- (1) Agricultural uses, such as general farming, pasture, grazing, outdoor plant nurseries, horticulture, truck farming, forestry, sod farming, and wild crop harvesting.
- (2) Public and private recreational uses and activities, such as parks, day camps, picnic grounds, golf courses, boat launching, and swimming areas, hiking and horseback riding trails, wildlife and nature preserves, game farms, fish hatcheries, skeet game ranges, and hunting and fishing areas.
- (3) Accessory residential uses, such as yard areas, gardens, play areas, and pervious parking and loading areas.
- (4) Accessory industrial and commercial uses, such as yard areas, pervious parking and loading areas, airport landing strips, etc.

(Ord. No. 11-09, 1-18-2011)

Secs. 58-99—58-115. - Reserved.

Subdivision III. - Special Floodplain and Approximated Floodplain Districts

Sec. 58-116. - Standards for the special floodplain district and approximated floodplain district

Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the areas of special flood hazard, designated as zones A1-30 and AE on the flood insurance rate map, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the City of Petersburg.

Development activities in Zones A1-30, AE, and AH, on the City of Petersburg's Flood Insurance Rate Map which increase the water surface elevation of the base flood by more than one foot may be allowed, provided that the applicant first applies - with the City of Petersburg's endorsement - for a conditional flood insurance rate map revision, and receives the approval of the Federal Emergency Management Agency.

No structure shall be located within ten feet of the boundary of the special floodplain district and approximated floodplain district.

(Ord. No. 11-09, 1-18-2011)

Secs. 58-117—58-135. - Reserved.

#### DIVISION 4. - MODIFICATIONS, EXCEPTIONS; EXISTING STRUCTURES

##### Subdivision I. - In General

Sec. 58-136. - Conditions.

In accordance with applicable provisions of the Virginia Uniform Statewide Building Code, the crater regional building code board of appeals shall grant modifications to the provisions of the Virginia Uniform Statewide Building Code, pertaining to the manner of construction or materials to be used in the erection, alteration or repair of a building or structure in a floodplain district, only under the following conditions:

- (1) No modification shall be granted for any proposed development within a floodway district that will cause any increase in flood levels during the 100-year flood.
- (2) A modification shall only be granted upon the following:
  - (a) A showing of good and sufficient cause.
  - (b) A determination that failure to grant the modification would result in exceptional hardship to the applicant.
  - (c) A determination that the granting of the modification shall not result in unacceptable or prohibited flood heights, additional threats to public safety, or extraordinary public expense; and will not create nuisances, cause fraud on or victimization of the public, or conflict with existing codes or ordinances.
- (3) A modification shall only be granted upon a determination that the modification is the minimum necessary, considering the flood hazard, to afford relief.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-137. - Notification by board of appeals of increase in cost of flood insurance.

Upon granting a modification to construct a structure below the 100-year flood level, the crater regional building code board of appeals shall notify the applicant, in writing, that the cost of flood insurance will be commensurate with the increased risk resulting from such construction.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-138. - Board of appeals to maintain records.

Records shall be maintained, by the Crater Regional Building Code board of appeals, of all modifications granted, including the justification for each, and shall be included in any reports required by, and submitted to, the emergency management agency.

(Ord. No. 11-09, 1-18-2011)

Secs. 58-139—58-155. - Reserved.

#### Subdivision II. - Special Exceptions

Sec. 58-156. - Special exceptions to requirements of article; conditions; documentation of affecting factors; authority of building inspector.

- (1) The building inspector of the city shall have the authority to grant special exceptions to the provisions of this article, other than such provisions as pertain to the requirements of the Virginia Statewide Uniform Building Code; provided, that the applicant shall furnish sufficient information and documentation to satisfy the inspector as to the following factors:
  - (a) The danger to life and property due to increased flood heights or velocities caused by encroachments. No special exception shall be granted for any proposed use, development or activity within any floodway district that will cause any increase in the 100-year flood elevation.
  - (b) The danger that materials may be swept on to other lands, or downstream, to the injury of others.
  - (c) The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.
  - (d) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.
  - (e) The importance of the services provided by the proposed facility to the community.
  - (f) The requirements of the facility for a waterfront location.
  - (g) The availability of alternative locations, not subject to flooding, for the proposed use.
  - (h) The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.
  - (i) The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.
  - (j) The safety of access to the property, in time of flood, by ordinary and emergency vehicles.
  - (k) The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters expected at the site.

- (l) The repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the special exception is the minimum necessary to preserve the historic character and design of the structure.
- (2) The building inspector may refer any application and accompanying documentation pertaining to any request for a special exception to any engineer or other qualified person or agency for technical assistance in evaluating the proposed project in relation to flood heights and velocities, and the adequacy of the plans for flood protection and other related matters.
- (3) Special exceptions shall be issued only after the building inspector has determined that the granting of such will not result in:
  - (a) Unacceptable or prohibited increases in flood heights;
  - (b) Additional threats to public safety;
  - (c) Extraordinary public expense; and will not
  - (d) Create nuisances;
  - (e) Cause fraud or victimization of the public; or
  - (f) Conflict with local laws or ordinances.

A special exception shall only be issued upon the determination that the special exception is the minimum required to provide relief from any hardship to the applicant.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-157. - Notification by building inspector of increase in cost of flood insurance.

Upon issuance of a special exception for any development or activity below the 100-year flood level, the building inspector shall notify the applicant, in writing, that the cost of flood insurance will be commensurate with the increased risk resulting from such development or activity.

(Ord. No. 11-09, 1-18-2011)

Sec. 58-158. - Records to be maintained by building inspector.

Records shall be maintained by the building inspector of all special exceptions granted, including the justification for each, and shall be included in any reports required by, and submitted to, the Federal Emergency Management Agency.

(Ord. No. 11-09, 1-18-2011)

Secs. 58-159—58-175. - Reserved.

Subdivision III. - Existing Structures

Sec. 58-176. - Existing structures in floodplain districts; conditions for continuation.

A structure or use of a structure or premises which lawfully existed before September 18, 1990, but which is not in conformity with these provisions may be continued, subject to the following conditions:

- (1) Existing structures or uses located in floodway districts shall not be expanded or enlarged unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that the proposed expansion would not result in any increase in the base flood elevation.
- (2) Any modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use located in any flood plain areas to an extent or amount of less than 50 percent of its market value shall conform to the VA USBC.
- (3) The modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use, regardless of its location in a floodplain area to an extent or amount of 50 percent or more of its market value shall be undertaken only in full compliance with this article and shall require the entire structure to conform to the VA USBC.
- (4) Uses, or adjuncts thereof, which are, or become, nuisances shall not be permitted to continue.

(Ord. No. 11-09, 1-18-2011)

# Richmond – Crater Multi-Regional Hazard Mitigation Plan (2017 Update)

## Executive Summary for the City of Petersburg



### 1. Introduction

Disasters have the potential to devastate a community’s economic, social, and environmental well-being. Hazard mitigation is the effort to reduce loss of life and property by lessening the potential impact of future disasters. Mitigation planning is a key process to break the cycle of disaster damage, reconstruction, and repeated damage.

The 26 localities of the Richmond and Crater regions of Virginia have worked together to update the *Richmond-Crater Multi-Regional Hazard Mitigation Plan* to identify vulnerabilities associated with natural disasters and develop long-term strategies to reduce or eliminate long-term risks. The effort was guided by the Hazard Mitigation Technical Advisory Committee (HMTAC) consisting of emergency management staff from each of the 26 localities (appointed by each locality’s chief administrative official).

While the full plan is an exhaustive review of hazard mitigation within the multi-regional planning area, this executive summary highlights key information specific to City of Petersburg with emphasis on the results from the Hazard Identification and Risk Assessment (HIRA). Additional information on the region, analysis methodologies, and mitigation actions can be found in the full plan posted on the RRPDC website ([www.richmondregional.org](http://www.richmondregional.org) )

### 2. Hazard Mitigation Planning in City of Petersburg

#### 2.1 Demographic Characteristics

<b>Population (2014):</b>	32,439
<b>Population projection (2040):</b>	28,613
<b>Land Area (2010):</b>	22.93 sq. miles
<b>Density (2014):</b>	1414.70 persons per sq. mile
<b>Median household income (2014):</b>	\$33,927
<b>Percent below poverty level (2014):</b>	27.50%
<b>Housing units (2014):</b>	16,475
<b>% of housing units in multi-unit structures (2014):</b>	33.50%
<b>Homeownership rate (2014):</b>	52.00%
<b>Median value owner occupied housing unit (2014):</b>	\$109,800

Source: 2014 American Community Survey, 2010 Decennial Census, U.S. Census Bureau

## 2.2 About City of Petersburg

The City of Petersburg has a finite amount of land for growth as annexation of county land is not an option. Developable land is limited by Chesapeake Bay Preservation Act requirements and other physical site constraints. About 3,586 acres are available for future development (about 70% of the vacant land). Land use fragmentation is a major issue in Petersburg with incompatible uses often located side by side. Petersburg has shown steady population loss in the 1990, 2000, and 2010 Census. However, the same chart shows an increase in population between 2010 and 2020 with continued increases through 2040.

The city has two distinct residential patterns. The first is found in the “Old City,” north of I-85. A mix of residential types (e.g., single family, multi-family, and duplexes) is found here. Newer developments, mainly suburban subdivisions, have sprung up south of I-85. Some infill of single-family homes and duplexes has also been seen.

Commercial development has occurred along the major thoroughfares leading from the central business district. There has been commercial infill development, and a new shopping center has been built on U.S. Route 301. A marina is planned for the area between the I-95 Bridge and the U.S. Route 1/301 bridge.

Industrial uses can be found along the Appomattox River in the central business district. New industrial parks have also been built in the southwest (near I-85 and U.S. Route 604) and southeast (I-95 and Route 632) parts of the city.

## 2.3 Critical Facilities

A critical facility is defined as a facility in either the public or private sector that provides essential products and services to the public; is otherwise necessary to preserve the health, welfare, and quality of life in the community; or fulfills important public safety, emergency response, and/or disaster recovery functions. In some instances, one or more critical facility is located within the identified hazard area and is so noted. For this update, critical facilities are defined as follows:

- **Public Safety:** Police, Emergency Operations Centers, Sheriff, Fire, Correctional Facilities, and Emergency Management
- **Infrastructure:** Cell towers, fuel storage, pumping stations, water and wastewater treatment facilities, and transportation structures
- **Government Facilities:** Courthouses and judicial facilities, government offices and facilities
- **Medical Facilities:** Hospitals, nursing facilities, rehabilitation centers and outpatient centers
- **Education:** K – 12 public schools, colleges and universities, and technical schools

## 2.4 Identified Hazards

A solid fact base is a key component of any plan. The Hazard Identification and Risk Assessment (HIRA) serves as the fact base for the regional hazard mitigation plan and evaluates the region’s vulnerability to natural hazards so that mitigation strategies, activities, and projects can be developed to minimize hazard risks. It includes the



identification of natural hazards and risks that are likely to impact the region based on historical experience, an estimate of the frequency and magnitude of potential disasters, and an assessment of potential loss to life and property. Emphasis is on hazards with a high likelihood of occurring, a significant level of impact, or both.

The information below summarizes the effects on City of Petersburg of the hazards identified for the multi-regional plan area. The statistics come from a National Climatic Data Center (NCDC) database. For some hazards, no data was available.

**(1) Flooding (Moderate Threat)**

<b>Repetitive Loss Structures:</b>	0
<b>Severe Repetitive Loss Structures:</b>	0
<b>RL/SRL Claims:</b>	0
<b>RL/SRL Building and Contents Payments:</b>	0
<b>Critical Facilities within Identified Floodplain Areas:</b>	2
<b>Annualized Flood Damages:</b>	\$50,761
<b>NFIP Policies:</b>	137
<b>NFIP Policy Coverage:</b>	\$38,183,500
<b>NFIP Claims Since 1978:</b>	76
<b>NFIP Payments Since 1978:</b>	\$481,948

**Significant Events:**

- 8/27/2011:** Hurricane Irene impacted the area with heavy rainfall and gusty winds which knocked power out to millions of people in the area. It took electrical crews several days to fully restore power in the planning area. Irene originated east of the Lesser Antilles and tracked north and northwest into the western Atlantic. The hurricane reached Category 3 intensity with maximum sustained winds of near 120 mph at its strongest point. The hurricane made an initial U.S. landfall in the eastern portions of the North Carolina Outer Banks on August 27, 2011 as a Category 1 hurricane. The storm then tracked north/northeast along the coast slowly weakening before making its final landfall in Brooklyn, New York on August 28 as a high-end tropical storm. Rainfall totals with the hurricane ranged from around two inches in western sections of the planning region to 5 to 9 inches in eastern sections closest to the coast. At its closest pass, Irene brought sustained winds of 30 to 45 mph with gusts of 60 to nearly 70 mph to the planning area. The winds downed power lines and trees throughout the area. A man was killed when a tree fell on his home near Colonial Heights.
- 9/4/2011:** Tropical Storm Lee moved inland along the Mississippi/Louisiana Gulf Coast on September 4, 2011. The remnants of the weakening storm tracked northeast, producing rainfall over a wide swath extending from the Gulf Coast to New England. Rainfall totals generally ranged from 4 to 8 inches in the planning area with the heaviest totals falling just east of Interstate 95. The rain fell on soils saturated only days earlier with Hurricane Irene’s passage. The result was

widespread flooding, particularly over the eastern sections of the planning region. Gusty winds in thunderstorms knocked down trees that had already been weakened from the hurricane resulting in thousands of power outages.

**(2) *Wind (Limited Threat), including winds from Hurricanes and Thunderstorms***

- **Annualized wind damages including thunderstorm winds:** \$0
- **Annualized hurricane wind damages:** \$0

**Significant Events:**

- **8/27/2011:** Hurricane Irene – See full description in Flood section
- **9/4/2011:** Hurricane Lee – See full description in Flood section.
- **6/29/2012:** A devastating line of thunderstorms known as a derecho moved east-southeast at 60 miles per hour (mph) from Indiana in the early afternoon to the Mid-Atlantic region around midnight. Winds were commonly above 60 mph with numerous reports of winds exceeding 80 mph. Some areas reported isolated pockets of winds greater than 100 mph. Nearly every county impacted by this convective system suffered damages and power outages. To make matters worse, the area affected was in the midst of a prolonged heat wave. Unlike many major tornado outbreaks in the recent past, this event was not forecast well in advance. Warm-season derechos, in particular, are often difficult to forecast and frequently result from subtle, small-scale forcing mechanisms that are difficult to resolve more than 12-24 hours in advance.
- **10/26/2012:** Hurricane Sandy made landfall along the southern New Jersey shore on October 29, 2012, causing historic devastation and substantial loss of life. The National Hurricane Center (NHC) Tropical Cyclone Report estimated the death count from Sandy at 147 direct deaths. In the United States, the storm was associated with 72 direct deaths in eight states: 2 in Virginia. The storm also resulted in at least 75 indirect deaths (i.e., related to unsafe or unhealthy conditions that existed during the evacuation phase, occurrence of the hurricane, or during the post-hurricane/clean-up phase). These numbers make Sandy the deadliest hurricane to hit the U.S. mainland since Hurricane Katrina in 2005, as well as the deadliest hurricane/post-tropical cyclone to hit the U.S. East Coast since Hurricane Agnes in 1972.

**(3) *Tornado (Significant Threat)***

- **Total tornado touchdowns since 1950:** 11
- **Annualized tornado damages:** \$891,490

**(4) *Thunderstorm, including Hail and Lightning (Moderate Threat)***

- **Annualized Thunderstorm Events, 1956 – 2016:** 0.82
- **Annualized Thunderstorm damages:** \$3,764

**Significant Events:**

- **6/29/2012:** The June 2012 Mid-Atlantic and Midwest derecho was one of the most destructive and deadly fast-moving severe thunderstorm complexes in North American history. The progressive derecho tracked across a large section of the Midwestern United States and across the central Appalachians into the mid-Atlantic states on the afternoon and evening of June 29, 2012, and into the early morning of June 30, 2012. It resulted in 20 deaths, widespread damage and millions of power outages across the study region.
- **6/13/2013:** On the morning of the 13, another linear complex of severe storms developed along a line near the southern border of Ohio. The storms eventually strengthened into a powerful derecho and raced to the south and east. Fatalities and injuries occurred as a result of falling trees and power lines as the storms ripped through Virginia, along with numerous reports of damaging winds and power outages. The derecho downed numerous trees and damaged structures with winds up to 80 mph (130 km/h) in some areas.
- **5/22/2014:** A large Hail and Thunderstorm event came through the region. Some hail was reported to be as large as ping pong balls. Several areas were affected from fallen electric lines. The NCDC data reports that 12 direct deaths in the study region resulted from this event.
- **2/24/2016:** This storm started in the north eastern states and traveled down through Virginia and south. During the thunderstorm, hail in some parts of the region were as large as 3 inches in diameter.

**(5) Winter Weather (Moderate Threat)**

- **National Weather Service Alerts (1986-2016):** 0
- **Annualized winter weather damages:** \$0

**Significant Events:**

- **12/25/2010:** A 4- to 10-inch snowfall blanketed the region with the heaviest amounts falling over the south and eastern sections. Amounts ranged from 4 inches northwest of the City of Richmond, 6 to 7 inches in the Cities of Petersburg and Emporia, and around a foot near the Town of Wakefield.
- **2/10/2014:** This was a major ice and snow storm that affected the entire region and elsewhere in the Eastern United States. This event produced devastating amounts of freezing rain and snow along and east of Interstate 95 all the way down to the coast. Overall temperatures throughout the winter were much colder in 2014. This was rated as 3 (Major) on the NESIS scale. A Presidential Disaster event was declared in Chesterfield.
- **1/22/2016:** What transpired was reasonably close to what was forecast, with a major snowstorm for our entire region, which also included a mix of some sleet across portions of the area as well as small amounts of freezing rain. NOAA ranks Northeast U.S. storms according to overall impact, part of which is dependent on societal and economic factors, thus population density is a key component. This particular storm was ranked as a 4 (crippling) on the NESIS scale of 1-5. It is now 4th on the list of historic storms that have been ranked on the NESIS scale, with

only two storms ever ranked as a 5 (extreme). Presidential Disasters for this study region were declared for Sussex and Henrico Counties.

**(6) Drought (Limited Threat)**

- **Annualized drought damages:** \$0

**Significant Events:**

- **November 1976 – September 1977:** The region experienced ten months of below average precipitation. The drought began in November 1976 when rainfall totaled only 50% to 75% of normal. During the rest of the winter, storms tracked across the Gulf. During the spring and summer storms tracked across the Great Lakes. These weather patterns created significant droughts throughout most of Virginia.
- **June – November 1998:** A heat wave over the Southeast produced warm and dry conditions over much of Virginia. Unusually dry conditions persisted through much of the fall. The drought produced approximately \$38.8 million in crop damages over portions of central and south-central Virginia.
- **December 2001 – November 2004:** Beginning in the winter of 2001, the Mid-Atlantic began to show long-term drought conditions. The NWS issued reports of moisture-starved cold fronts that would continue throughout the winter. Stream levels were below normal with record lows observed at gauges for the York, James, and Roanoke River basins. By November 2002, the U.S. Secretary of Agriculture had approved 45 counties for primary disaster designation, while 36 requests remained pending.
- **2007:** Unusually dry conditions persisted through a significant portion of the year through much of southern and central Virginia. Virginia as a whole experienced its tenth driest year on record.
- **7/21/2011:** This was one of the hottest July's in the last 75 years, breaking records for multiple. According to the NCDC data, all counties were recorded as having excessive heat waves and drought throughout the entire month.
- **7/5/2012:** Another year of record setting highs and ties throughout the states. These high were accompanied with droughts and heat waves.

**(7) Mass Evacuation (Limited Threat)**

- Mass evacuations from urban areas can strain a community's resources and cause gridlock on major transportation routes, overcrowding of hospitals and shelters, and increased load on local utility infrastructures leading to potential failure.

**(8) Wildfire (Limited Threat)**

<b>Annualized wildfire damages:</b>	\$0
<b>Total acres burned (1995-2008):</b>	26.4
<b>Total dollar damage (1995-2008):</b>	\$0
<b>Annualized number of wildfire events:</b>	0.31
<b>High fire risk woodland communities:</b>	4
<b>Number of homes in high fire risk woodland communities:</b>	271
<b>Critical facilities within high risk wildfire areas:</b>	13

**(9) Landslide/Shoreline Erosion (Limited Threat)**

- The greatest landslide hazards are found in the higher elevations of western and southwestern Virginia. Analysis of the hazard here is limited by the availability of data. There is no comprehensive database documenting all landslide occurrences within the Commonwealth.

**(10) Land Subsidence/Karst/Sinkholes (Limited Threat)**

- According to the Virginia State Hazard Mitigation Plan, there have been no Federal Declared Disasters or NCDC recorded events for karst related events in the Commonwealth. Land subsidence is very site-specific. There is no comprehensive long-term record of past events in Virginia.

**(11) Earthquake (Limited Threat)**

- **Annualized earthquake losses:** \$78,970

**Significant Events:**

- Significant earthquakes were first recorded in Virginia in 1774. Virginia has had more than 160 earthquakes since 1977, of which 16% were felt. This averages to approximately one earthquake every month, with two felt each year. There have been four significant earthquakes centered in the region. There is quaternary faulting in the Central Virginia Seismic Zone, running through Powhatan, Goochland, Fluvanna, and Cumberland Counties. Quaternary faults and folds are believed to be sources of earthquakes greater than magnitude 6 in the past 1,600,000 years; however, the USGS reports that only liquefaction features are evidence of strong shaking and that individual faults in the Central Virginia Seismic Zone remain unidentified.
- **8/23/2011:** A 5.8 magnitude quake centered near Mineral, VA occurred at 1:51 pm EDT on August 23, 2011. The earthquake was reportedly felt as far north as Boston, as far south as Georgia and as far west as Chicago. Effects of the earthquake were reported to the USGS through its online survey from over 8,434 zip codes, and ranged from weak intensity to very strong. In terms of damage, particularly hard-hit were brick and unreinforced structures and infrastructure near the quake's epicenter. In addition to cracks and buckling, some buildings were knocked off of their foundations. Minor injuries were reported as a result of the damage and

debris. The earthquake forced the North Anna Power Station nuclear power plant offline pending an all-clear from a Nuclear Regulatory Commission review. Aftershocks of a lesser magnitude continued to plague the area for several weeks after the event. The strongest aftershock measured 4.5 and occurred on August 25 at 1:08 am EDT.

## 2.5 2017 – 2022 Mitigation Actions identified by City of Petersburg

City of Petersburg 2017 - 2022 Mitigation Actions							
Number	Strategy	Responsible Department	Priority	Goals Supported	Hazards Addressed	Timeframe	Resources
Petersburg - 1	Continue to enforce zoning and building codes, with emphasis on floodplain management.	Building Department	High	1, 2	Flooding	Ongoing	Staff
Petersburg - 2	Partner with parent-teacher associations and local schools to implement existing curriculum related to natural hazards (e.g., Masters of Disaster, Risk Watch).	Emergency Management	Low	2	All	Ongoing	Staff
Petersburg - 3	Complete application for StormReady Program.	Emergency Management	Low	1, 2, 3, 5	All	2018	Staff
Petersburg - 4	Consider participating in FEMA's CRS.	Public Works	Medium	1, 2	Flooding	Ongoing	Staff
Petersburg - 5	Inspect and clear debris (or encourage VDOT to) from stormwater drainage system.	Public Works	High	4	Flooding	Ongoing	Staff, VDOT
Petersburg - 6	Finish implementation of Reverse 911 system.	Emergency Management	Medium	1, 3, 5, 6, 7	All	Ongoing	City budget, grants
Petersburg - 7	Establish flood-level markers along bridges and other structures to indicate the rise of water levels along creeks and rivers in potential flood-prone areas.	Public Works	Medium	1, 2, 3	Flooding	Ongoing	Grants
Petersburg - 8	Investigate all public utility lines to evaluate their resistance to flood, wind, and winter storm hazards.	Public Works	Medium	7	Flood, wind, winter storm,	Ongoing	Staff

City of Petersburg 2017 - 2022 Mitigation Actions							
Number	Strategy	Responsible Department	Priority	Goals Supported	Hazards Addressed	Timeframe	Resources
					severe storm		
Petersburg - 9	Work with VDOT, private utilities, and/or private homeowners to trim or remove trees that could down power lines.	Public Works	Low	7	Flood, wind, winter storm, severe storm	Ongoing	Staff, VDOT
Petersburg - 10	Distribute brochures and use other means to educate the public regarding preparedness and mitigation.	Emergency Management	Medium	1, 2, 3	All	Ongoing	Staff
Petersburg - 11	Request list from VDEM or VA DCR and conduct annual review of RL and SRL property list to ensure accuracy. Review will include verification of the geographic location of each RL property and determination if mitigated and by what means. Provide corrections if needed by filing form FEMA AW-501.	Planning/ Assessor	Low	1, 2	Flooding	Annually	Staff
Petersburg - 12	Review locality's compliance with the NFIP with an annual review of the floodplain ordinances and any newly permitted activities in the 100-year floodplain.	Emergency Management	Medium	1, 2	Flooding	Annually	Staff
Petersburg - 13	Install quick connects for generators at critical facilities.	Emergency Management	Medium	1, 7	All	Ongoing	Grants

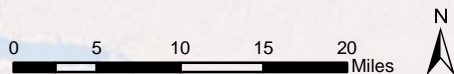
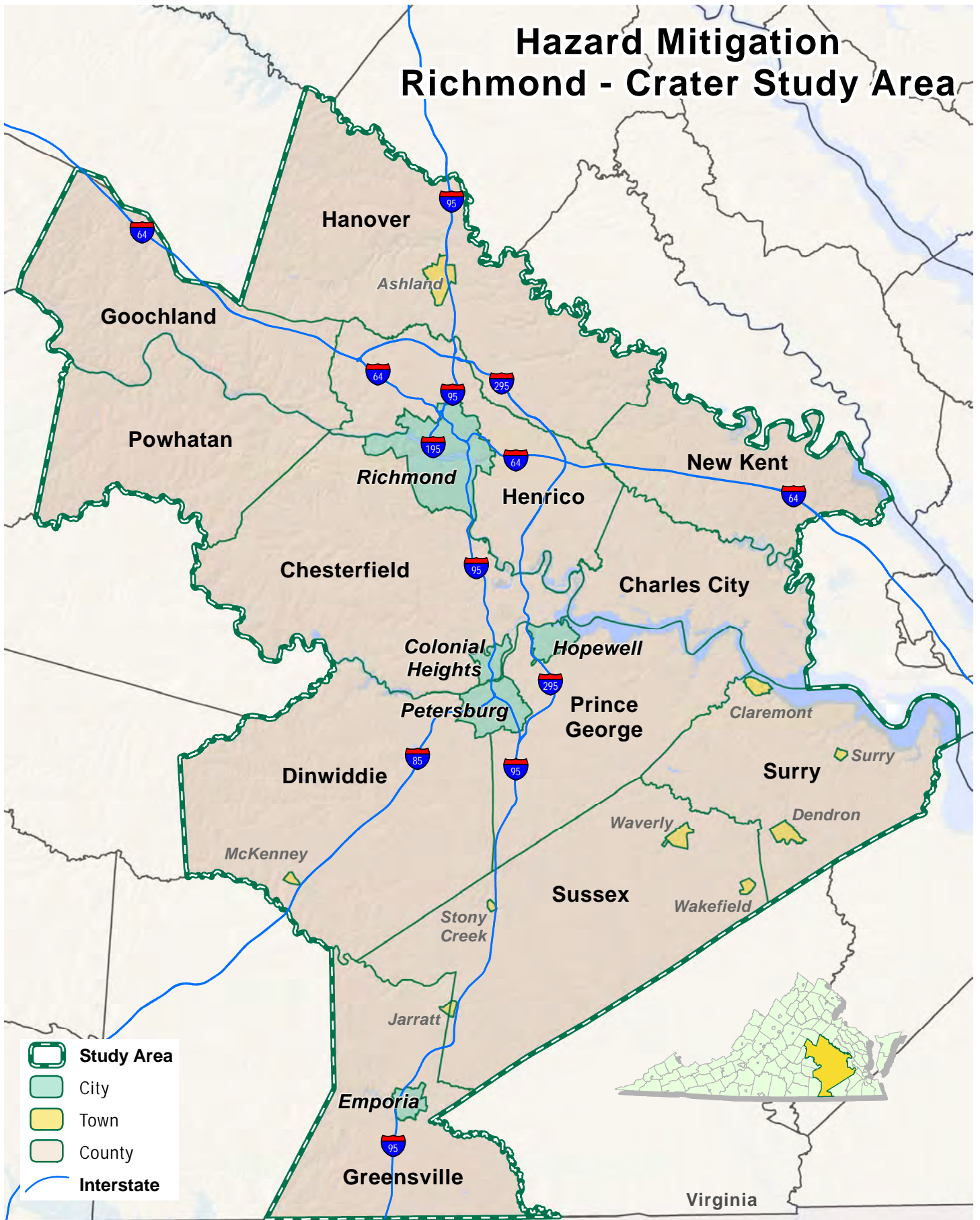


City of Petersburg 2017 - 2022 Mitigation Actions							
Number	Strategy	Responsible Department	Priority	Goals Supported	Hazards Addressed	Timeframe	Resources
Petersburg - 14	Work with state partners and neighboring localities to monitor and implement Next Generation 911 GIS data standards.	GIS Manager, PDC	High	1, 7	All	Ongoing	Staff
Petersburg - 15	Support mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include but are not limited to: 1. acquisition of flood prone property 2. elevation of flood prone structures 3. minor structural flood control projects 4. relocation of structures from hazard prone areas 5. retrofitting of existing buildings, facilities and infrastructure 6. retrofitting of existing buildings and facilities for shelters 7. critical infrastructure protection measures 8. stormwater management improvements 9. advanced warning systems and hazard gauging systems (weather radios, reverse-911, stream gauges, I-flows) 10. targeted hazard education 11. wastewater and water supply system hardening and mitigation	Community did not respond to status update request.	Community did not respond to status update request.	1, 2, 4, 5, 7	All	Ongoing	FEMA Grants
Petersburg - 16	Integrate mitigation plan requirements and actions into other appropriate planning mechanisms such as comprehensive plans and capital improvement plans.	Community did not respond to status update request.	Community did not respond to status update request.	1, 2	All	Ongoing	Staff

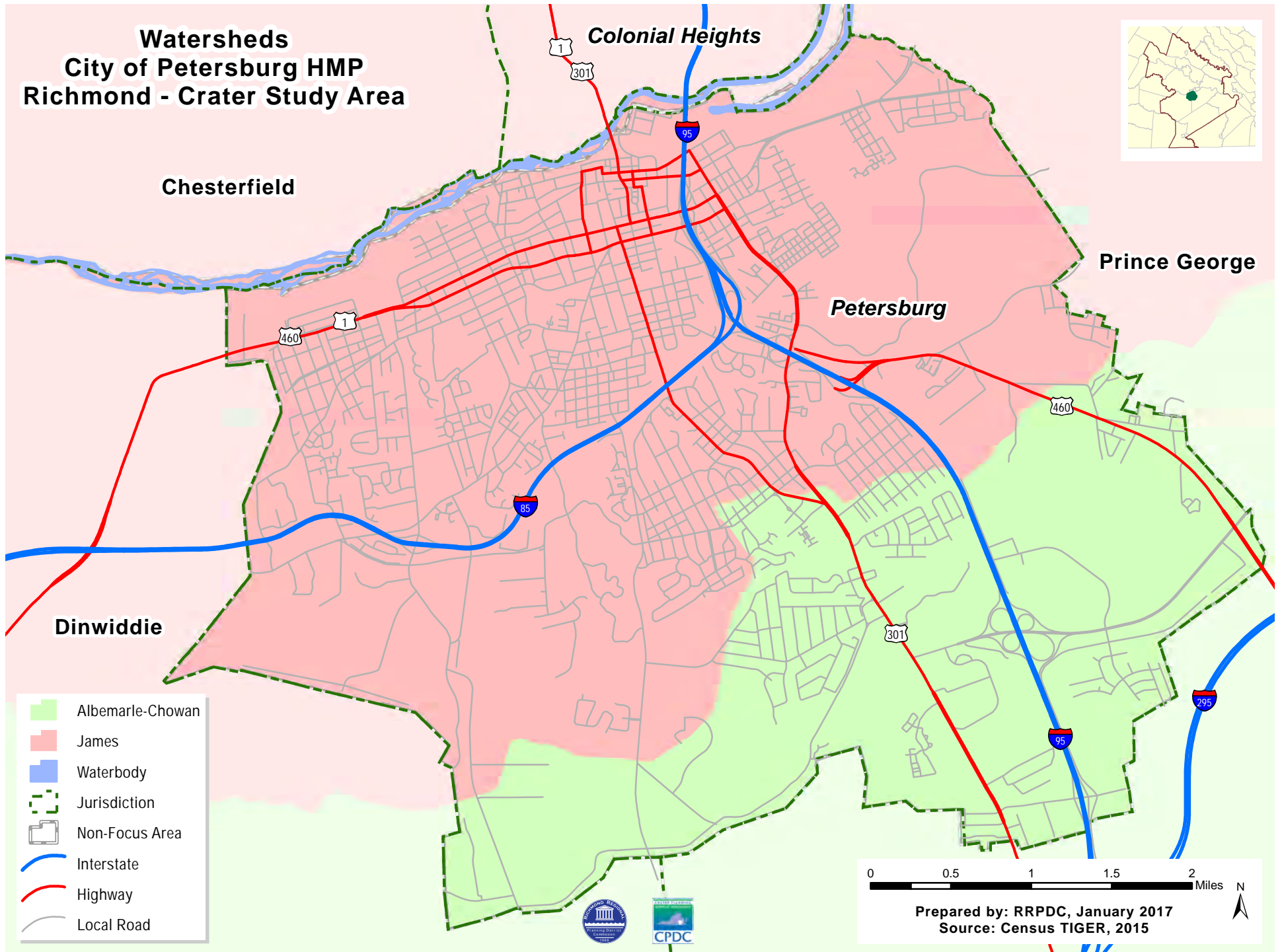
The Richmond-Crater Multi-Regional Hazard Mitigation Plan 2017 was developed by the Richmond Regional and Crater Planning District Commissions with the assistance and support of local planning, emergency management, and other local staff from the participating localities, as well as from Dewberry Consultants, LLC.

This document and the full plan on which it is based were prepared under a grant from FEMA's Grant Programs Directorate, U.S. Department of Homeland Security. Points of view or opinions expressed in this document are those of the authors and do not necessarily represent the official position or policies of FEMA's Grant Programs Directorate or the U.S. Department of Homeland Security.

# Hazard Mitigation Richmond - Crater Study Area



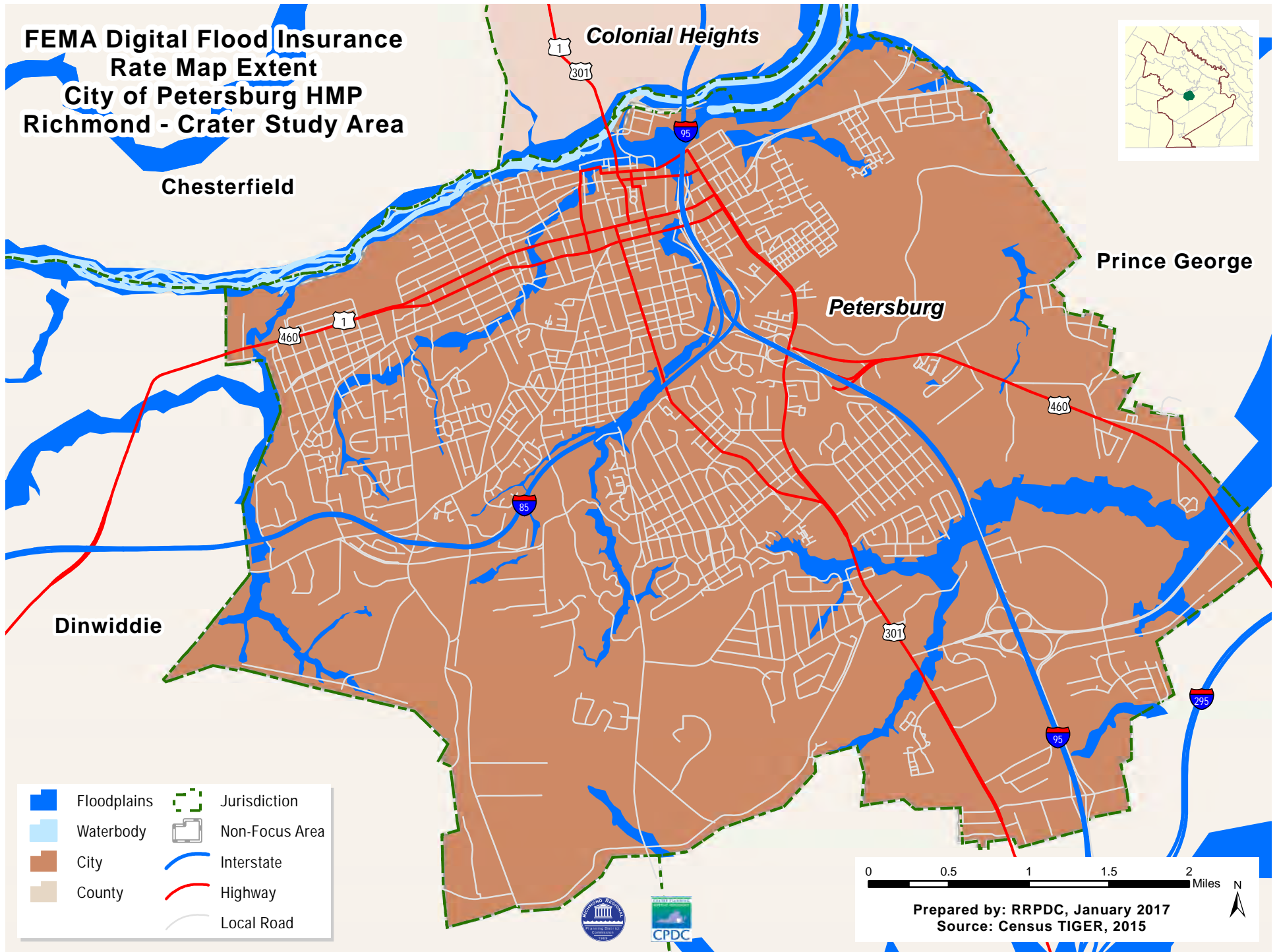
# Watersheds City of Petersburg HMP Richmond - Crater Study Area












- Albemarle-Chowan
- James
- Waterbody
- Jurisdiction
- Non-Focus Area
- Interstate
- Highway
- Local Road

0 0.5 1 1.5 2 Miles N  
Prepared by: RRPDC, January 2017  
Source: Census TIGER, 2015

**FEMA Digital Flood Insurance  
Rate Map Extent  
City of Petersburg HMP  
Richmond - Crater Study Area**



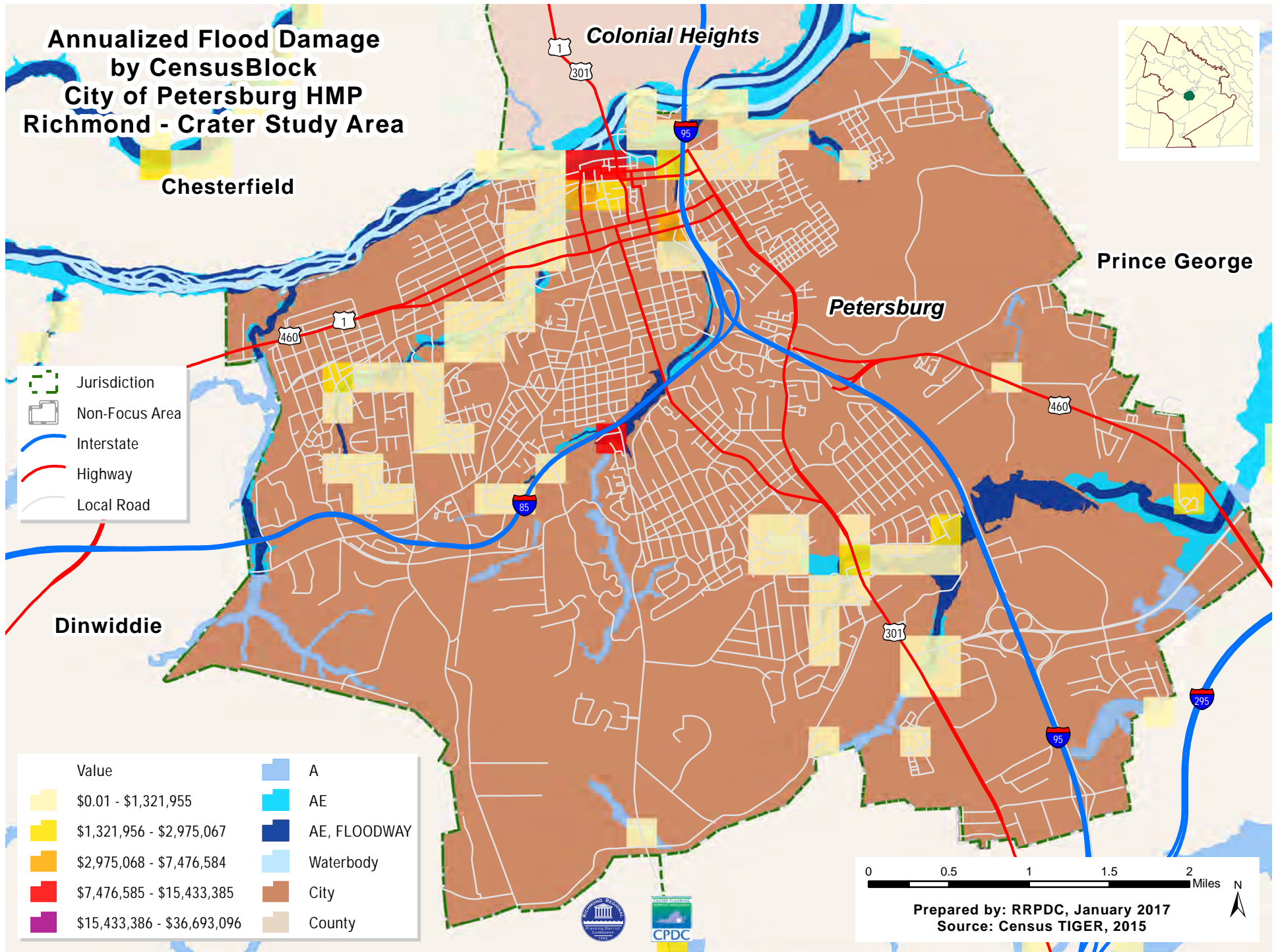
- |   |             |   |                |
|---|-------------|---|----------------|
|  | Floodplains |  | Jurisdiction   |
|  | Waterbody   |  | Non-Focus Area |
|  | City        |  | Interstate     |
|  | County      |  | Highway        |
|   |             |  | Local Road     |

0 0.5 1 1.5 2 Miles N

Prepared by: RRPDC, January 2017  
Source: Census TIGER, 2015



# Annualized Flood Damage by CensusBlock City of Petersburg HMP Richmond - Crater Study Area



- Jurisdiction
- Non-Focus Area
- Interstate
- Highway
- Local Road

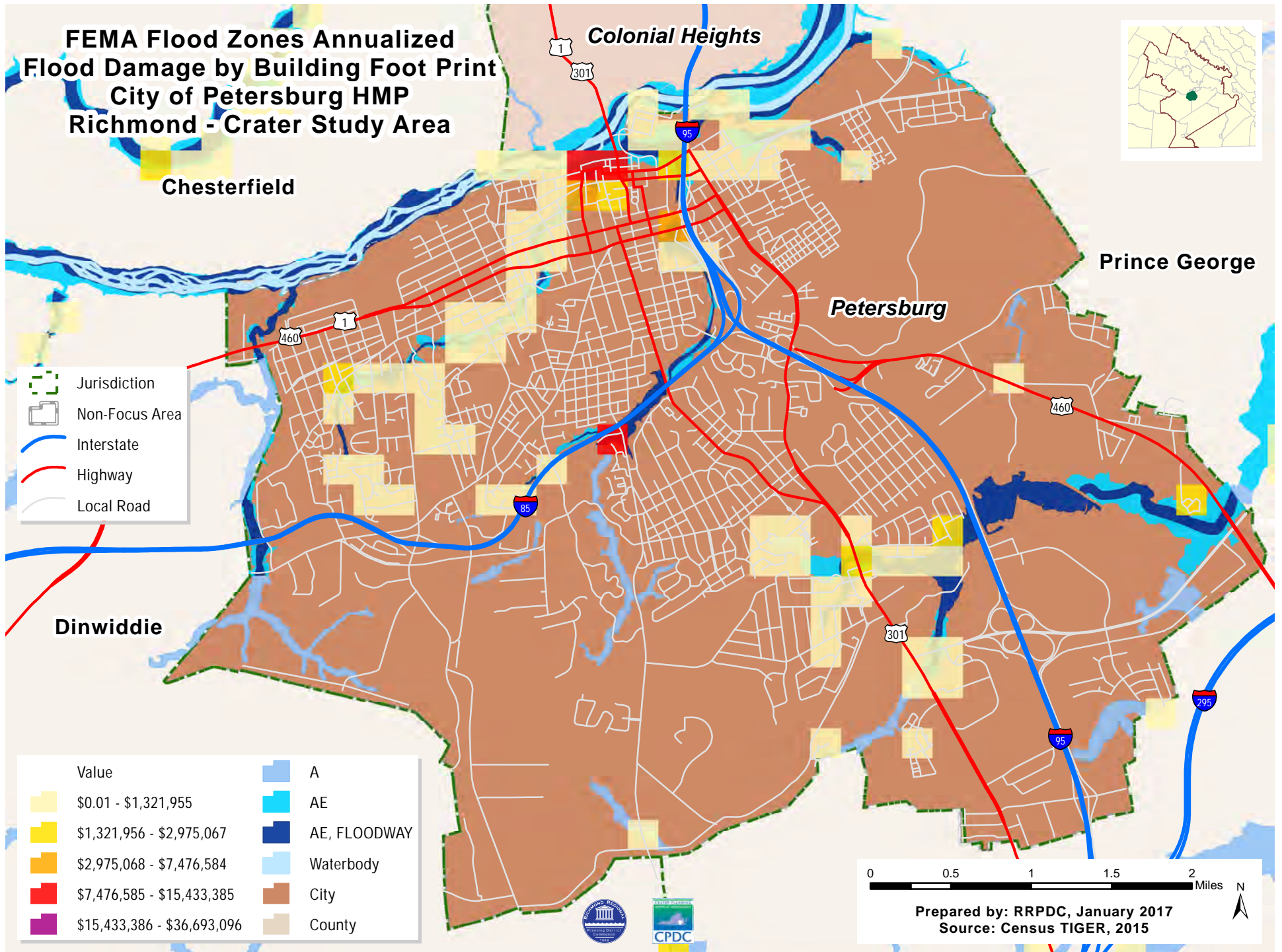
Value	
\$0.01 - \$1,321,955	A
\$1,321,956 - \$2,975,067	AE
\$2,975,068 - \$7,476,584	AE, FLOODWAY
\$7,476,585 - \$15,433,385	Waterbody
\$15,433,386 - \$36,693,096	City
	County

0 0.5 1 1.5 2 Miles N

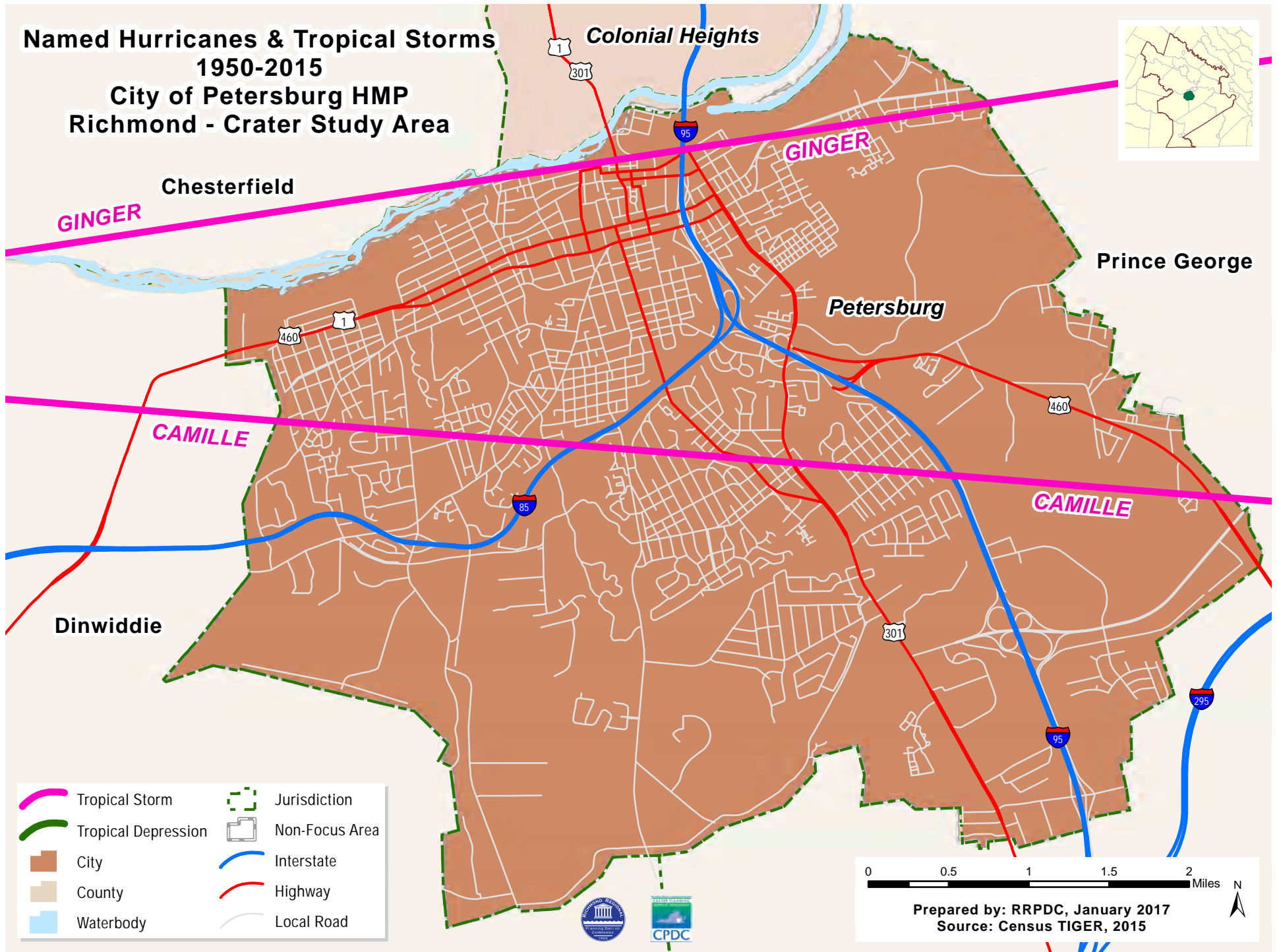
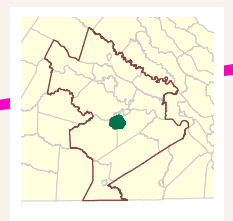
Prepared by: RRPDC, January 2017  
Source: Census TIGER, 2015













# FEMA Flood Zones Annualized Flood Damage by Building Foot Print City of Petersburg HMP Richmond - Crater Study Area




**Named Hurricanes & Tropical Storms  
1950-2015  
City of Petersburg HMP  
Richmond - Crater Study Area**



- |   |  |
|---|--|
|  Tropical Storm      |  Jurisdiction   |
|  Tropical Depression |  Non-Focus Area |
|  City                |  Interstate     |
|  County              |  Highway        |
|  Waterbody           |  Local Road     |

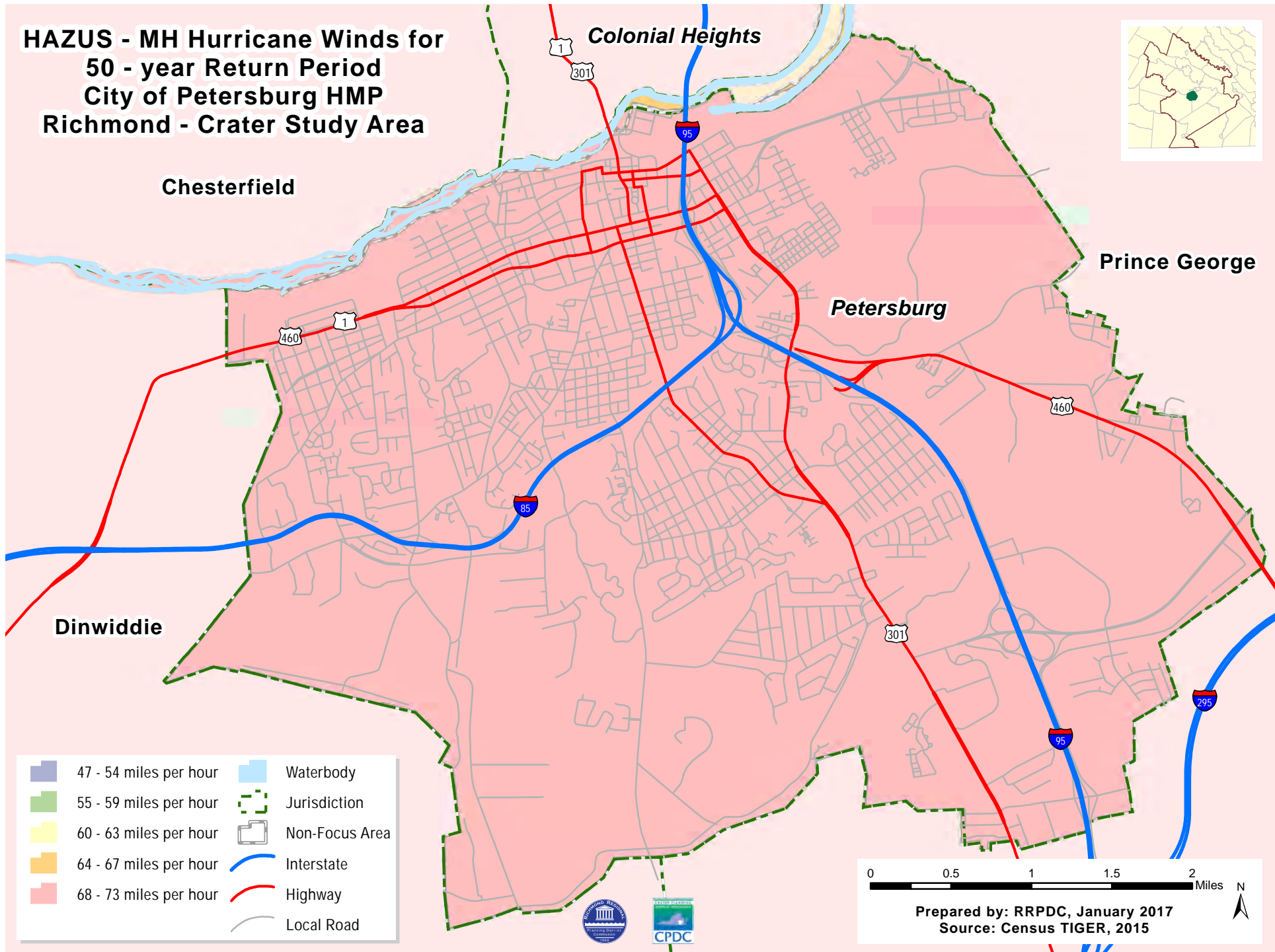
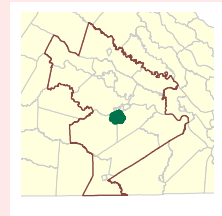
0 0.5 1 1.5 2 Miles N

Prepared by: RRPDC, January 2017  
Source: Census TIGER, 2015

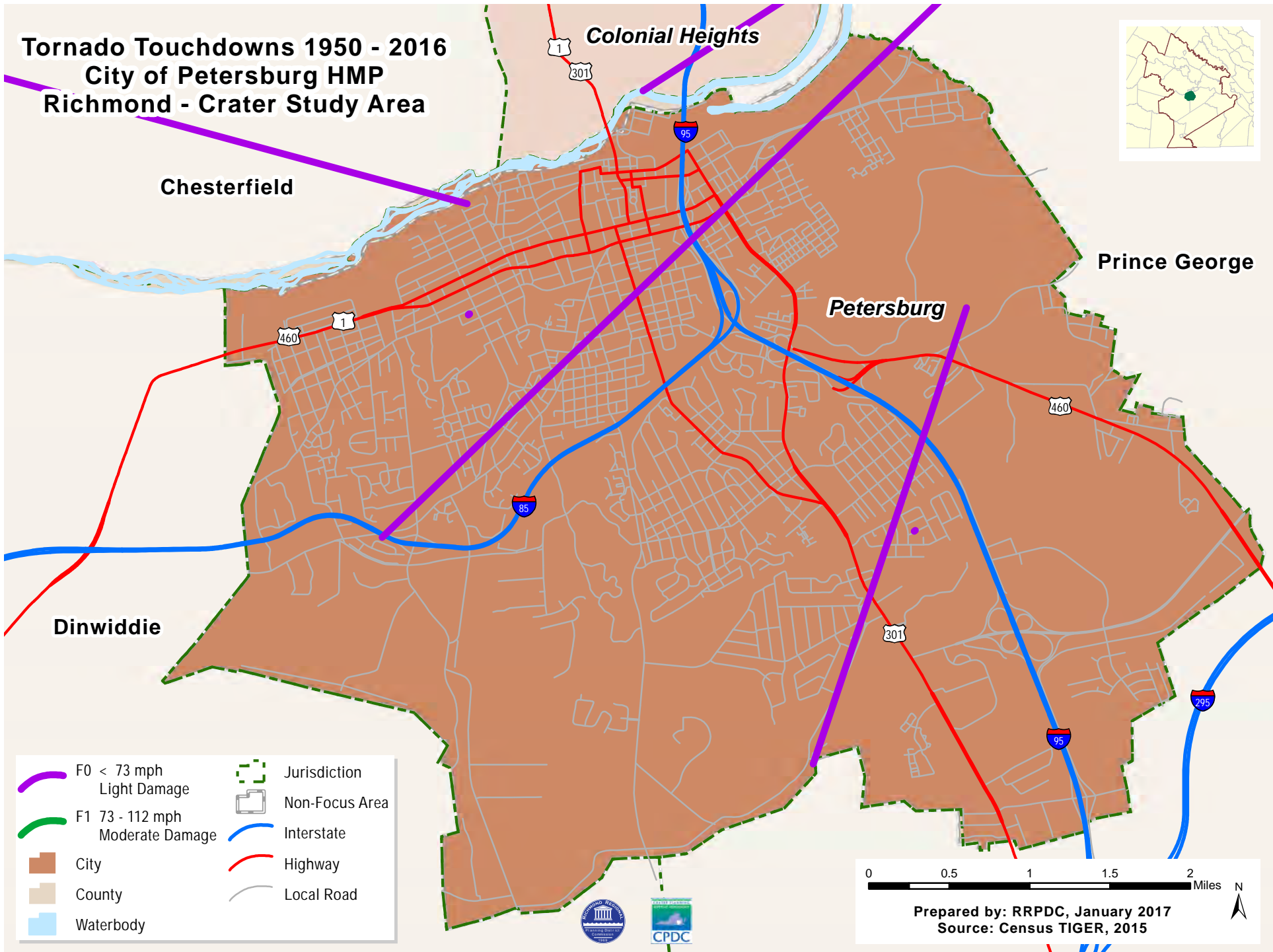




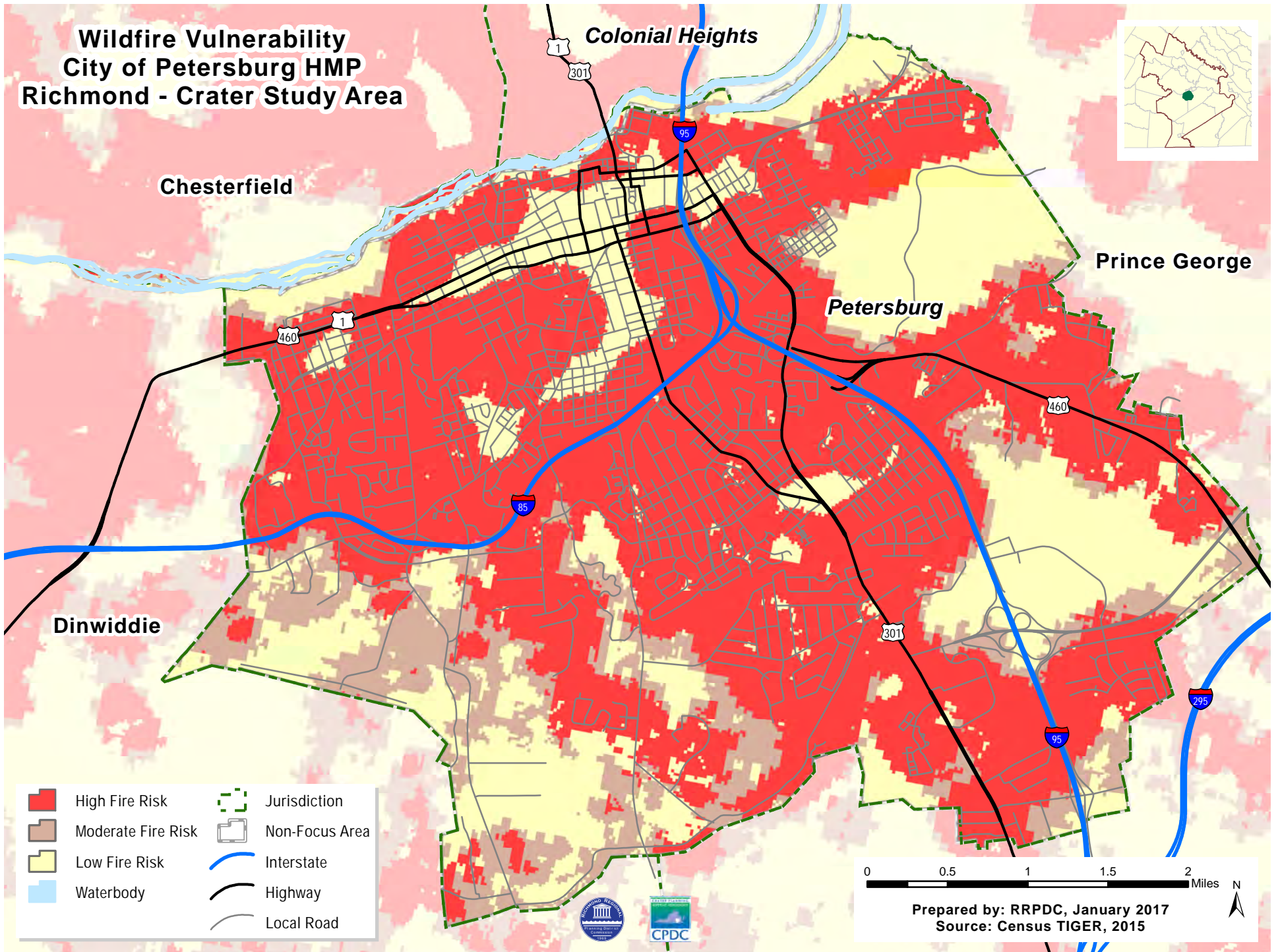
**HAZUS - MH Hurricane Winds for  
50 - year Return Period  
City of Petersburg HMP  
Richmond - Crater Study Area**



# Tornado Touchdowns 1950 - 2016 City of Petersburg HMP Richmond - Crater Study Area



# Wildfire Vulnerability City of Petersburg HMP Richmond - Crater Study Area






- High Fire Risk
- Moderate Fire Risk
- Low Fire Risk
- Waterbody
- Jurisdiction
- Non-Focus Area
- Interstate
- Highway
- Local Road

0 0.5 1 1.5 2 Miles N  
Prepared by: RRPDC, January 2017  
Source: Census TIGER, 2015

# Virginia's Coastal Zone



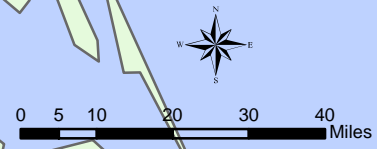
-  HMP Study Area
-  Coastal Zone County
-  Virginia

## BOUNDARY DESCRIPTION

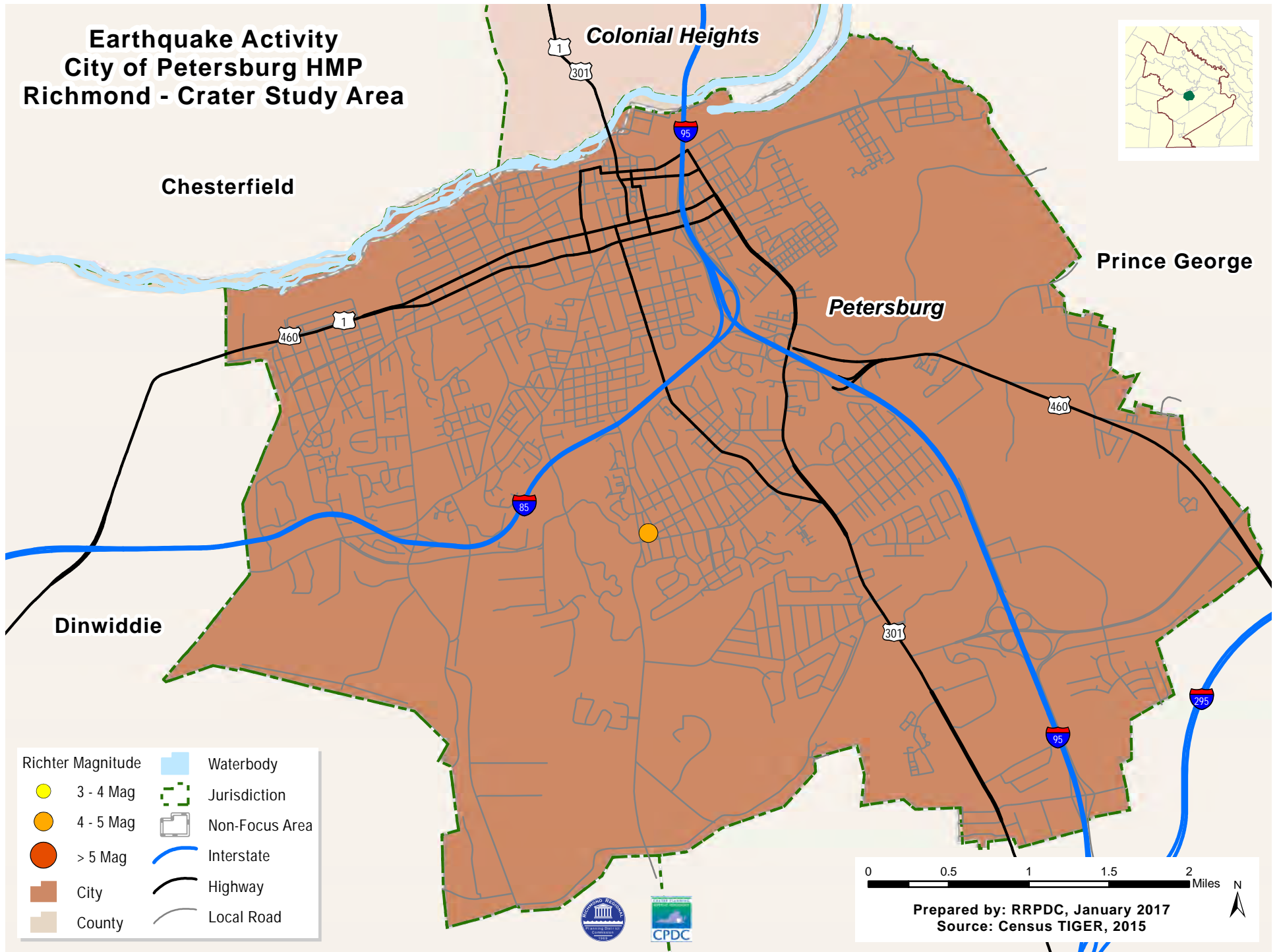
Virginia's coastal zone encompasses 29 counties, 15 cities, and 42 incorporated towns in "Tidewater" region of the state. Virginia's coastal zone includes 5,000 miles of shoreline, four tidal rivers reaching as far as 100 miles inland – the Potomac, Rappahannock, York, and James Rivers and all of the waters therein, and out to, the three nautical mile Territorial Sea Boundary, including all of the Chesapeake Bay and Albemarle – Pamlico Sound watersheds.

## FEDERAL CONSISTENCY

Federal consistency is the CZMA requirement where Federal agency activities, Federal license or permit activities, and Federal financial assistance activities located inside or outside the state's coastal zone that have reasonable foreseeable effects on the coastal use or resource must be consistent with the enforceable policies of the state's coastal zone management program.

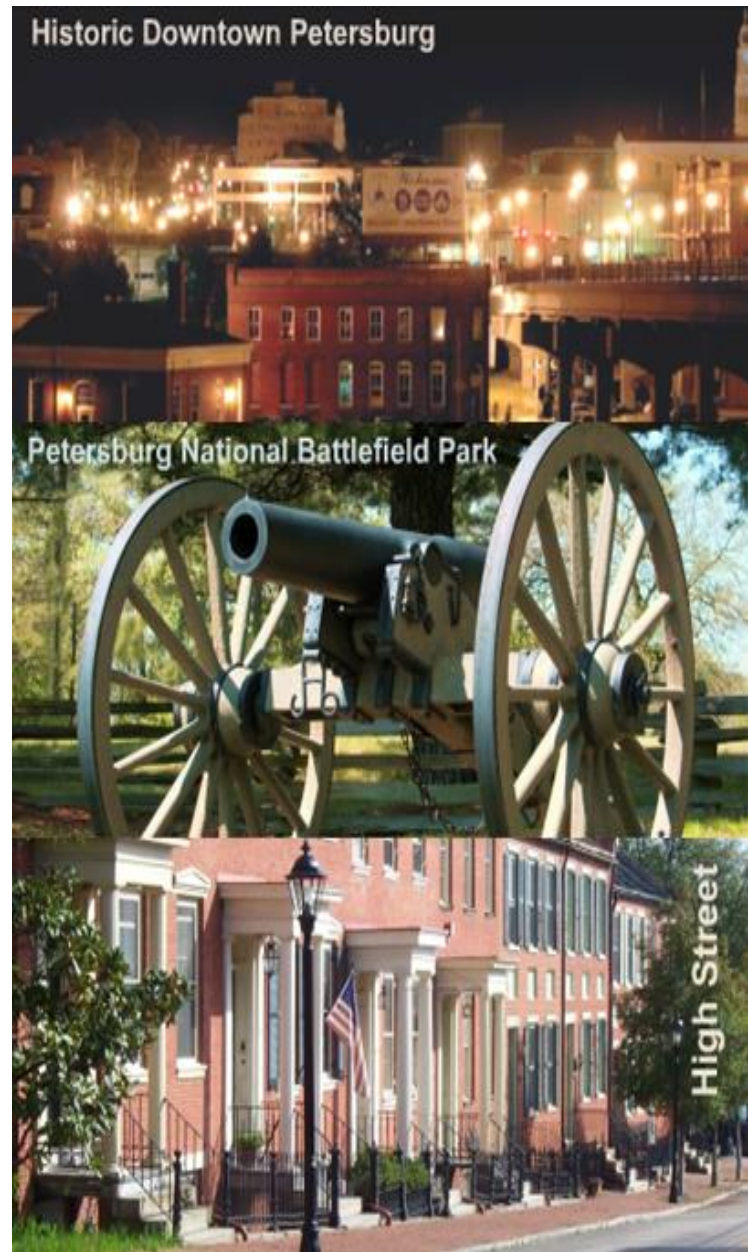


# Earthquake Activity City of Petersburg HMP Richmond - Crater Study Area





## City of Petersburg 2014 Comprehensive Plan



DRAFT



## Acknowledgments

### Mayor and City Council

W. Howard Myers, Mayor	Ward 5
Councilman Samuel Parham, Vice-Mayor	Ward 3
Councilwoman Treska Wilson-Smith	Ward 1
Councilman Darrin Hill	Ward 2
Councilman Brian A. Moore	Ward 4
Councilman David Ray Coleman	Ward 6
Councilman John A. Hart, Sr.	Ward 7

### City Manager and Deputy City Manager

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Irvin Carter

### City Attorney and Assistant City Attorney

Brian Telfair  
Danielle Powell

### Planning Commission

Marshall Ford, Chairman  
Daniel Blaha, Vice-Chair  
Commissioner Lashrecse Aird  
Commissioner Tammy Alexander  
Commissioner Mary Harwell  
Commissioner Brenda Henderson  
Commissioner Dr. Conrad Gilliam  
Commissioner Richard Gross  
Commissioner George Grundy  
Commissioner William Irvin



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Consultant: Community Planning Partners, Inc.



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## Petersburg's Regional Location

The historic City of Petersburg is located in South Central Virginia, twenty four miles south of the City of Richmond, 132 miles south of Washington D.C. and seventy three miles west of the Chesapeake Bay. Petersburg is situated at the Falls of the Appomattox, on the boundary between the Tidewater and the Piedmont, between the Chesapeake and Albemarle basins. Located along the eastern seaboard, and situated at the juncture of Interstates 95 and 85 with easy access to Interstate 295, US Route 460, 301 and 1. The City of Petersburg is 23.1 square miles in size and it is one of 13 jurisdictions that comprise the Richmond-Petersburg Metropolitan Statistical Area.



## City of Petersburg



## A Vision for Petersburg



In the year 2020, Petersburg Virginia has reinvented itself to be an economically, environmentally and socially vibrant community with a physically active, well educated, ethnically and culturally healthy citizenry. Continuing a legacy of a thriving faith filled City where there are private and public partnerships that enhance our heritage and promote the spiritual, physical and emotional health of all of our residents. There are a myriad of housing opportunities and options ranging from single family dwellings to urban apartments; retirement villages; assisted living facilities and live-work housing units. The City has a vast array of entertainment options including Community Theater, a symphony orchestra, a thriving arts community and numerous historical sites, museums and attractions. The many entertainment options coupled with unique architectural landscapes having been preserved and enhanced over time have resulted in a thriving tourism industry. There are numerous specialty restaurants and shopping options, state of the art health care facilities, recreational sports facilities, and green infrastructure improvements. The City possesses over acres of premier green Park and recreational space including an 18 hole public golf course.

The City has a well-organized transportation system including walking; cycling and fitness trails, as well, as local and regional mass transit facilities for air, rail, and water routes. There is a waterfront that is eclectic and vibrant promoting and bringing families, and visitors to an exciting array of activities. The infrastructure has been upgraded to facilitate planned growth and expansion as well as provide for the stability of our many neighborhoods. There are beautiful green spaces throughout the City allowing for a mix of urban and suburban parks, which forms a network of recreational uses for families and individuals to enjoy.

A School system revamped to be among the best in the State of Virginia and highly ranked in the Nation; boasting small class sizes; state of the art equipment; quality teachers, and gifted and talented students that are bright and eager to learn.

Our local government services and level of accessibility are unparalleled in the region. There is a healthy balance of industry, business, residences, and services resulting in stable, growing property values and an economically flourishing community. There are volunteer and professional opportunities for citizens of all walks of life and ability. There are new businesses including local entrepreneurs providing jobs and employment opportunities for the citizens of Petersburg. Petersburg, Virginia a wonderful place to live, work, and play.





## History

Petersburg, Virginia, a “city rich in history that is dedicated to providing superior services while cultivating pride”.

Originally known as Peter’s Point, it received its charter in 1748 and became a City in 1850. Petersburg settled at its inland most navigable point, at the fall of the Appomattox River. Because of its location, it has a rich cultural, economic and social history. When settlers arrived in the early 1600s, Native Americans mounted fierce resistance before signing treaties that led to flourishing trade. The growth of the tobacco market in the early 1700s brought about the near simultaneous founding of Richmond and Petersburg. For the next hundred years, Petersburg appeared to dominate as the logistical center of Virginia. During several decades following the Revolution, Petersburg’s free black population grew quickly and Petersburg had one of the oldest free black settlements in the nation at Pocahontas Island.

In the 30 years leading up to the Civil War, Petersburg built its first railroads, and the manufacture of agricultural and industrial implements and tools flourished. In the spring of 1864, General Ulysses S. Grant surrounded Petersburg, affecting the longest siege in the history of the nation. After General Robert E. Lee and his Confederate forces abandoned Petersburg in April 1865, Lee surrendered, ending the Civil War. By the early part of the 20th century, the logistical and shipping center of Virginia had shifted to Richmond, leaving Petersburg the retail hub of Southside Virginia; several new industries were established in Petersburg. Founded in 1870, the Seward Luggage Company became one of the largest manufacturers of trunks and luggage in the country. Two other large companies formed during this era were Titmus Optical Company and Arnold Pen Company. These businesses contributed greatly to Petersburg’s thriving economy at the turn of the twentieth century. During this era department stores, grocers, specialty stores, and theatres lined Sycamore Street and adjoining

streets in Old Towne and sprung up around the Halifax Street triangle.



Sycamore Street 1903

As Petersburg’s economy weakened in the 20th century, its population declined. As upper and middle classes fled to the suburbs, the city was left with a high percentage of low income residents. The increase in demand for public services seriously strained limited financial resources.

Petersburg continues as a transportation hub with immediate access to Interstates 85, 95, and 295, and U.S. highways 1, 301, and 460, Petersburg is an attractive tourism and business location. Petersburg has several public and private industrial parks, several located within Enterprise Zones.

The City collaborates with State and regional economic development organizations to offer businesses assistance with site selection, permitting and workplace training.

History, geography and phenomenally intact historic districts make Petersburg a community that people and businesses from all over the globe are embracing. Visible reminders of Petersburg’s prominent role in the emergence of the country into a worldwide power are evident in the extensive architecture and streetscapes that remain. The City rises from the banks of the beautiful,



unspoiled Appomattox River where the City will create a Heritage Trail along its southern shore for the public to discover this rare asset. The majesty of the Appomattox continues to drive support and assistance from the U. S. Army Corps of Engineers for the re-establishment of the City's harbor as a navigable connection to the James River, the Inter-coastal Waterway, the Chesapeake Bay and the Atlantic Ocean. Petersburg is experiencing a true Renaissance.

On August 6, 1993, a destructive tornado touched down on the southwest side of Petersburg, and rapidly intensified as it struck the historic downtown area of the city. Several well-built, multi-story brick buildings were leveled. Pocahontas Island experienced major losses in the storm; to include 47 homes and a church. Although it has taken the City a while to bounce back from the devastation, we remained resilient.

Today, the City is alive with revitalization projects featuring premiere examples of architecture ranging from the 18th - early 20th centuries. Many of the damaged homes have been restored and occupied as private residence. The church on the Island is the place of worship to many families who have rebuilt their homes and remained island residents.

The city has also experienced a resurgence of development with many of the old warehouses converted into lofts and mixed-use developments. Petersburg has a vast array of entertainment options including a thriving arts community and numerous historical sites, museums and attractions coupled with a unique architectural landscape that has been preserved and enhanced over time resulting in a thriving tourism industry. There are numerous restaurants and shopping options located in Old Town and South Crater Road, and a state of the art health care facility. The City has a an organized transportation system including walking and cycling trails.

The City of Petersburg in collaboration with our community health partners is providing a health and wellness program to enhance the citizen's quality of life. A non-profit citizen advisory

board known as Wilcox Watershed Conservancy (WWC) assists Parks and Recreation with educational programming, enhancing and maintaining signage, flowers and walking trails at Lee Park. City Council approved in 2004 a master plan for Lee Park. The Tennis and Basketball courts at Lee Park have been revitalized through funding provided from the Community Development Block Grant (CDBG). The friends of the Library have assisted the City's Library to offer a Healthy Living and Learning Center. The City recognizing a need for a better healthy way of living created along with its staff and community leaders, a Quality Circle and Heal Petersburg Taskforce. The Army has substantially expanded activities at nearby Fort Lee, home of the United States Army's Sustainment Center of Excellence, as well as the Army's Logistics Branch. Together, all these features deliver a desirable location for those looking for a strong sense of community.

As noted in our Vision Statement "we will provide ethical, dynamic and effective leadership, establish clear direction and priorities, and model the mission and values in support of our common vision."

There is a new optimism on the streets.





The Comprehensive Plan for the City of Petersburg is intended to facilitate development and an Economic resurgence. This development and economic revival will come as we turn our challenges into opportunities and capitalize on our location, historical significance and rich history. The plan emphasizes the need for redevelopment in our Central Business District, revitalization and commercial corridors, while preserving the historic properties and neighborhoods that make the City unique.

## Purpose of the Plan

The Comprehensive plan is a policy guide for how the community will be developed and managed. The existing conditions were examined in the City of Petersburg and the region. Developing the framework for this Plan was a process undertaken a few years ago and facilitated by Community Development Partners. The process involved recommendations and land use plans being developed from an analysis of existing conditions, public input, and meetings with community stakeholders. The plan has been updated to include development activities since the undertaking began. The resulting Comprehensive Plan is intended:

- To improve the quality of our environment as it relates to social, economic and physical realities;
- To guide future decisions of citizens, elected officials and staff as it relates to development;
- To provide for the well-being of all the community;
- To promote community goals, objectives and policies;
- To be the balance between technical and political aspects of community development in order to eliminate duplication of private and public projects; and
- To include citizen participation in community development; thus creating a sense of pride.

The Comprehensive Plan is not intended to be a binding, regulatory document. Rather, it is to guide elected officials and

City Staff when determining the appropriate regulatory, enforcement and/or changes necessary in order to meet the established goals and new challenges as they arise.

## Legal Authority of the Plan

In the Commonwealth of Virginia all jurisdictions are required by law to prepare and adopt a plan for the physical development of their land and to review that plan at least once every five (5) years. The plan shall be developed in accordance with State Code sections 15.2-2223 through 15.2-2232, and shall be general in nature and designate the general location, character, and extent of growth. This plan is consistent with the provisions outlined in State code.

## Plan Implementation

A Comprehensive Plan is only as useful as the ability of a City to implement its recommendations. The Comprehensive Plan will be implemented through a variety of tools available to the City:

- Regulatory measures (i.e. Code Enforcement, Zoning, Subdivision Ordinance)
- Financial Resources (i.e. Capital Improvement Program, Operating Budget, Grants, CDBG)
- Plans (i.e. Neighborhood Plans or Master Plans for specific areas of concentration)
- Partnerships (i.e. the Housing Authority, Cameron Foundation, Non-Profits, local Businesses, Churches, Homeowner's Associations, Public Schools, VSU)

Recommendations are made not just out of need, but consistent with the capacity of the City to bring about the necessary changes through available resources. This Plan seeks to concentrate efforts in areas that will provide maximum benefits to the residents of the City of Petersburg. Petersburg has the potential and opportunity for improvement in every neighborhood with citizen participation.



## Citizen Participation in the Process

The framework for this plan began with citizen participation back in 2008, under the direction of K.W. Poore & Associates, Inc. Additional meetings have been held by the City of Petersburg Planning Department to hear the opinions and desires of the residents.

The major meetings were held at Union Station in Old Town. The evening began with introductions and a brief presentation by the consultants on the Comprehensive Plan process. Residents were then asked to provide their input. Stations were set up around the room addressing the topics of Economic Development, Public Services, City Image, Living Environment, Pedestrian Scale, Recreational Opportunities, Preservation, Health and Facilities. Residents wrote comments at each station, interacted with City Staff and each other, and provided check marks next to other comments with which they agreed strongly.

Citizen concerns ran the gamut of issues, the strongest emphasis, however was placed on the underutilized historic assets and the City's image. In more recent meetings, the concerns varied and included housing efforts, education and Economic Development.



Citizen Participation Meeting held at Union Train Station

## Petersburg's Comprehensive Plan

The following Plan looks at the City's demographics, housing, economics, community facilities, infrastructure, amenities, and historic and cultural assets. Although Petersburg is a dynamic City, the background information provides a basis upon which to assess the City and plan for its future. The next section includes Transportation, Economic Development and Land Use Sections, along with planning factors to be considered as we continue to build stronger communities. The final section addresses the goals, objectives, and recommendations which will help guide the decisions of City staff and leaders over the next 5 years.



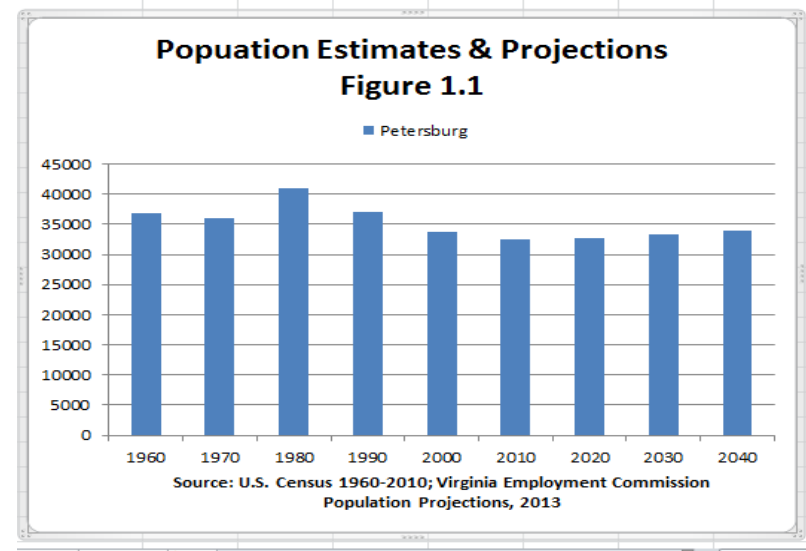
## Population

Demographics and population trends are an important part of the Comprehensive Plan. They reveal unique characteristics that have implications for the economy, schools, land use patterns, housing needs, and public services. The first section offers a demographic snapshot of Petersburg with projections based on current trends.

Petersburg has experienced population fluctuations and demographic shifts associated with economic growth and social changes since its history began with the establishment of Fort Henry in 1646. Since the late 1970's the City has been dealing with the loss of population; Despite the population peak in the 1980 Census at 41,055, which was attributed largely to the 1972 annexation of land from Dinwiddie and Prince George Counties. This increase in population was short lived, and the outward flow of people continued with suburban growth in the region. Petersburg has shown steady population loss in the 1990, 2000, and 2010 Census. As shown in Figure 1.1. However, the same chart shows an increase in population between 2010 and 2020 with continued increases through 2040.

Understanding that population projections are merely estimates and City' declining population over the decades has definitely not predetermined the City's future. The slight increase in population between the last census reporting and today is due to proactive redevelopment and policy changes instituted by the City. There are many great examples that demonstrate the fact that the downward population trend is changing. Southside Regional Medical Center is one of the success stories. The new hospital location has spurred growth in the southern part of the City, and we can see a slight increase in population in Petersburg in 2007 and 2013. This trend is projected to continue to increase as residents are coming back to Petersburg. The redevelopment efforts cannot just encourage new development, but must also creatively encourage reinvestment in

the older neighborhoods of the city. Understanding the population trends and demographic characteristics, the City has -a means to measure its success at revitalizing and reinventing itself.



### Regional Population Trends

Regionally, the five localities neighboring Petersburg have experienced modest population growth with the exception of Chesterfield, which has had relatively explosive growth attributed to the overall expansion of the Richmond metro area. Although the





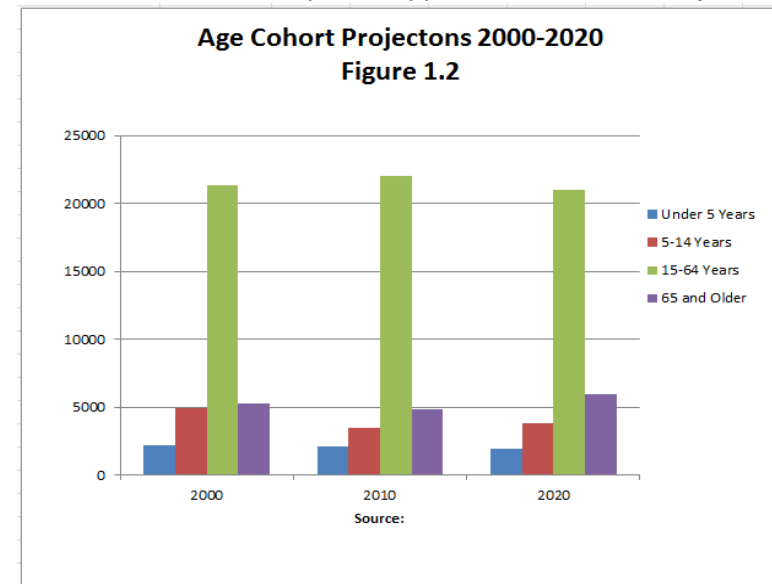
City of Hopewell also experienced population loss, Petersburg has the greatest decrease in population about 9% since 1970.

When we are looking at our population regionally there are several factors that attribute to a declining population. The lack of employment opportunities in the City may be the major factor, along with affordable housing options and a challenged education system. Despite the shrinking population the city has managed to deliver services and experience economic investment. In an effort to appeal to new residents, the City has strategically prioritized its efforts to address ways to stimulate the economy by attracting new development that creates jobs. While a seemingly monumental task, the strategy calls for prioritizing our resources to focus on our gateways, economic development from both public and private investment, infrastructure, housing and public facilities. This strategy encourages the City to leverage its endeavor with private investment to stabilize and revitalize the areas within the City with the greatest need and that will have the maximum impact.

It is also necessary to understand the dynamics of a shrinking population. Although, the City is riding the wave as the population has slightly increased and is projected to continue it is important for the City to address the issues that caused the decline for several decades. An aging population requires different services than a younger population. The new trend now of single young professionals known as SINKS (Single Income no kids) and two-person professional households with no kids known as DINKS (Dual income no kids) needs will be different from families with children. Similarly, financially challenged urban populations require different public investments than an affluent and growth oriented suburban area. The city will need to balance the different people who make up the communities while balancing services to all groups of persons. While Petersburg land use comprises rural, suburban, and urban landscapes; socioeconomic data suggests that there be policies focusing on the urban population. An understanding of the reasons why people move away from the City will be the first step in correcting the problem and making great strides to retain, at minimum, the current residents.

## Demographics

For Petersburg, what appears to have been a challenge as shown in earlier census data as a decrease in population, we are seeing a small increase in the number of persons moving back to the City. The elderly population is remaining in their homes with their children moving back to care for them. Virginia State University graduates remain in the area, and the adaptive reuse of warehouses to lofts can all be considered reasons for this increase. As the chart below (Figure 1.2) indicates, people ages 15-64, which comprise the ages of majority of the workforce, are declining in absolute numbers, and also declining relative to the senior population (65 and older). By 2030, the senior population is expected to increase, while the work force age population is slightly decreasing which may result in a short and long term implication on the services provided and the economy. A declining workforce age population suggests that persons that will contribute to the economy are not living in Petersburg. This also suggests that the employment opportunities for the skills of that population are not located in the City of Petersburg. This further validates the efforts of the City to attract economic development opportunities that create jobs.





Race is a demographic characteristic which has changed overtime. Traditionally, the City has had nearly equal residents of whites and blacks, but since the 1960's the composition of the City has become primarily African American, with the white population majority shrinking to a minority. The 2010 Census shows African Americans make up 76% of the population and whites 15% with the remaining 9% made up by other races. The City of Petersburg experienced an increase in the Latino and Hispanic population between 2000 and 2010. In order to have greater diversity among the population, we need to see what industry and amenities entice such diversity, and seek to provide that culture and then market the City of Petersburg. Diversity in nationality and income levels will be a welcome change and essential in order to see a progressive impact on the local economy.

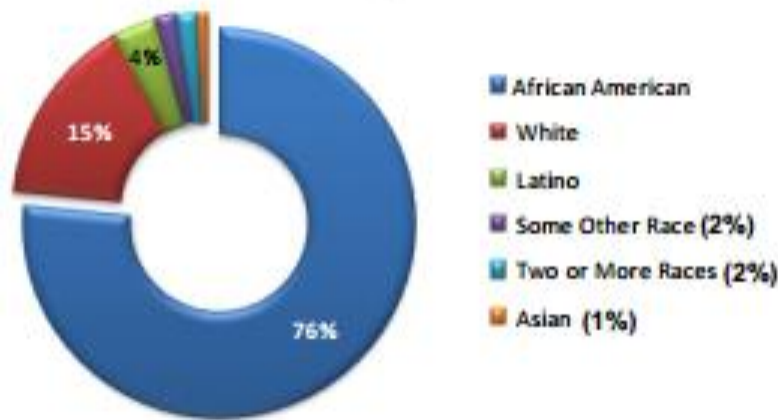
According to 2010 Census figures, gender ratios for the state show a general even split between male and female. In the City of Petersburg the percentage of females is slightly higher with about 53.3% of the population being female.

## Income

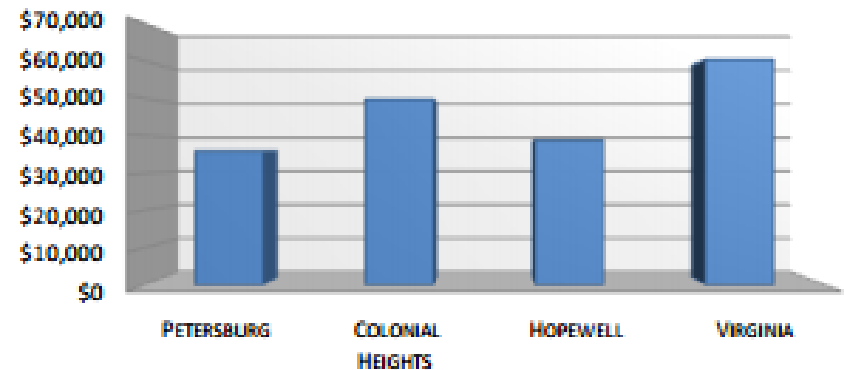
Income and Poverty are socioeconomic characteristics which are indicative of economic circumstances. Income growth suggests that quality of life is improving. Stagnant incomes suggest a weak economic base. Income levels of the residents of Petersburg help to estimate the capacity within the City for economic growth. The quickest reference for income levels in a locality is the Median Household Income, with half of the households above that number, and half below.

Median household income (MHI) in Petersburg in 2005 was \$30,942. This was significantly lower than the state median income of \$55,476. However, the latest census data available shows level of growth. The States \$63,907 is a 9% increase since 2005. Encouragingly, The City of Petersburg, though well below the State median, has also shown a 9% increase in MHI. Today, latest census estimates show Petersburg's MHI at \$35,874. The increase of the MHI is positive, and shows growth; even though the percentage of the increase is small; it's not stagnant. Compared to adjacent cities in the region, Petersburg has the lowest MHI. Nevertheless, economic policies should positively impact the MHI to show over time a different picture.

**Population Composition 2010**



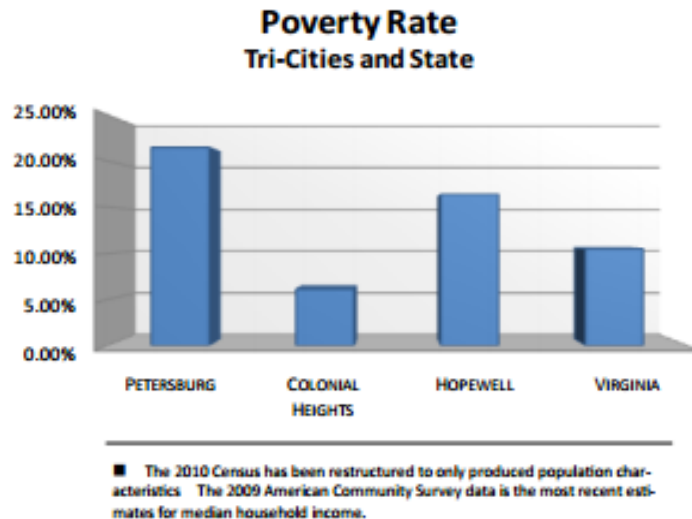
**Median Household Income  
Tri-Cities Area and State**





## Poverty

Poverty levels are an indication of the well-being of a community. Poverty definitions used by the Census are determined at the federal level. Poverty status is determined for a family by comparing income with the federal income thresholds appropriate for a family size and compositions.



The poverty struggle is not isolated to the City of Petersburg, although the numbers may give a different impression. The well-being of a community is reflective in the number of persons and households below the poverty level. This national crisis has not occurred overnight and will not be solved overnight. However, the City of Petersburg is consciously working in collaboration with our community partners to have an impact through programs and services that will not burden the existing system. This out-of-the box method of moving forward is going to improve our socio-economic standing and empower people to help themselves. As seen in the income section, low median income levels are a sign of a weak economy. Combined with high poverty rates, this suggests many citizens in Petersburg are struggling to make ends meet. In 2013, Petersburg had 19.6% of the population living below poverty

according to the American Community Survey (ACS). This is a decrease since the 2010 Census as shown in the adjacent chart of about 21.3% of the population living below poverty. Addressing poverty is a challenge in the short and long term. These statistics must not be looked at merely as numbers to be lowered, but as evidence that there are Citizens of Petersburg in need of economic opportunity. The Departments of Social Service and Workforce Development have mobilized to assess the needs within the community. This assessment will be used to creatively partner with the community resources to deal with the crippling factors, and develop the programming and training that is necessary to see change. These solutions must also address the high percentage of children nationally below the age of 18 living in poverty and must include the academia community in developing and implementing results-driven strategies.

## Housing

Housing affects the quality-of-life of a community. It is a basic human need as well as an indicator of economic vitality. Affordable, attractive housing retains residents and supports an environment for growth and stability. Diversity in the housing supply supports people in all stages of life. The private sector provides most of the housing within the City; yet, it is important for the City to inventory the condition of its housing supply and take appropriate measures to promote a healthy housing mix. This healthy housing mix is the catalyst to maintaining stable neighborhoods and supporting economic development. Petersburg is striving to overcome the challenges associated with its aging housing stock in order to provide vibrant neighborhoods, attract a diverse sustainable population which will include people of all ages, incomes, backgrounds and lifestyles.



The City has work to do in order to revitalize some of its neighborhoods. While its neighbors have had an increase in housing, Petersburg has experienced a decline in the total number of housing units. This implies the amount of new construction citywide has been below replacement rate of demolition or conversion of housing to other uses. In older parts of the City, vacant housing is a problem – threatening to shrink the housing stock further.



Currently Petersburg has neighborhoods which reflect the disparity of wealth within its borders. Restored neighborhoods and well-kept houses stand in stark contrast to some of the dilapidated housing which was at one time an asset to the City. The ability of the City to improve neighborhoods with public money is limited, but the city has retained vacant lots and houses over the years. The City has been working to sell these lots and houses to private entities for redevelopment and to add them back to the tax rolls. However, the lots that are still in the control of the City may allow the city to be able to leverage the property with developers and non-profit

housing partners, and to spark revitalization and change in these neighborhoods.

Several neighborhoods have been the subject of community plans such as Eastgate (a neighborhood plan for a portion of the eastern communities of the city), Pocahontas Island, University Boulevard (formerly known as Canal and Fleet Street), Battersea and the Halifax corridor. All of these plans recognize the aging housing stock or the vacant lots in the respective areas and encourage infill development. There are areas where there are contiguous lots that can be assembled to develop a small scale subdivision of single family residences. Residents need economic opportunity and mixed income neighborhoods to encourage investment and stabilization of deteriorating areas. Having affordable, safe, and attractive housing is a critical building block toward a better economy. The City is mindful that the time is now to promote, market, and attract private developers to take advantage of this opportunity, which will have an effect on improving the local economy and institutions. Furthermore, this is also a great time for residents to participate in these restoration and revitalization efforts and help to create a sense of place.

## Housing Vacancies

The sprawling pattern of growth has left a concentration of vacant housing in neighborhoods north of Interstate 85. Between 1980 and 2006 Petersburg's housing stock remained unchanged, while its regional neighbors had grown. The outward growth from Petersburg since the 1960's has had negative consequences for the City. While population losses were temporarily reversed with the 1972 annexation of land from Dinwiddie and Prince George Counties. The neighborhoods in the oldest parts of the City continued to decline.

Petersburg has the largest share of vacant housing in the region, with 16% of units vacant according to the 2010 U.S. Census.



If public investment is to be more than a temporary patch on deteriorating conditions, it must find and support private investment as well. Investment in housing must be planned and combined with infrastructure improvements if it is to compete with the suburban growth that has a hollowing out effect on City neighborhoods. There are still neighborhoods with signs of life which should not be taken for granted.

Housing efforts by private investors and foundations need the City as a strategic partner. Investing in the hot spots downtown and in older neighborhoods can strengthen private sector investment and encourage it to spread outward from the nodes of activity that exist. Seeds of revitalization can grow and gain momentum. Public comments have stressed the desire to see the city invest in areas around revitalization; thereby strengthening already revitalized and stable neighborhoods and building on the momentum they have started. The decision makers have strategically prioritized areas that redevelopment traffic should be driven in order to have a greater impact on declining communities.

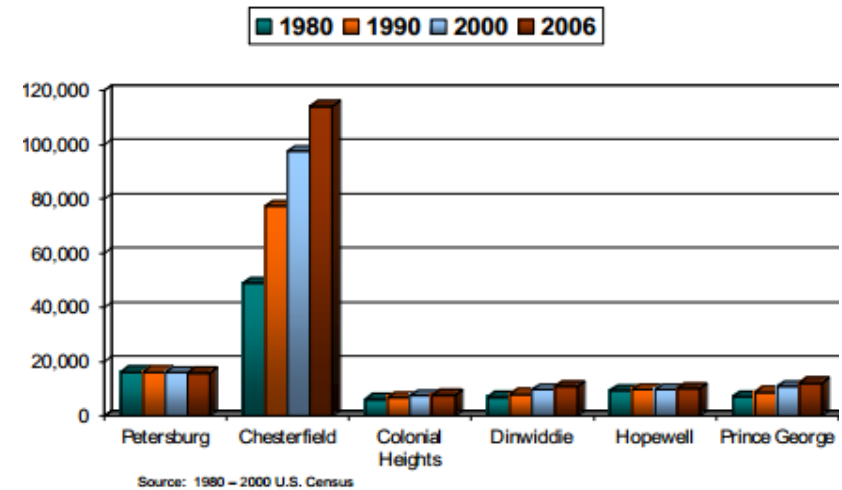
The City of Petersburg has intentionally designated growth areas that have been found to meet the intent of the Code of Virginia, section §15.2-2223.1. These areas in the City are identified on the future land use map as designated areas where the City is driving development of residential housing, commercial uses, infill and mixed use development. The City has ample vacant infill parcels and some undeveloped land that will permit redevelopment opportunities to accommodate the projected growth in the City.

To the extent possible, federal, state and local transportation, housing, water, and sewer facility, economic development and other public infrastructure funding for new and expanded facilities will be directed toward these areas to accommodate growth.

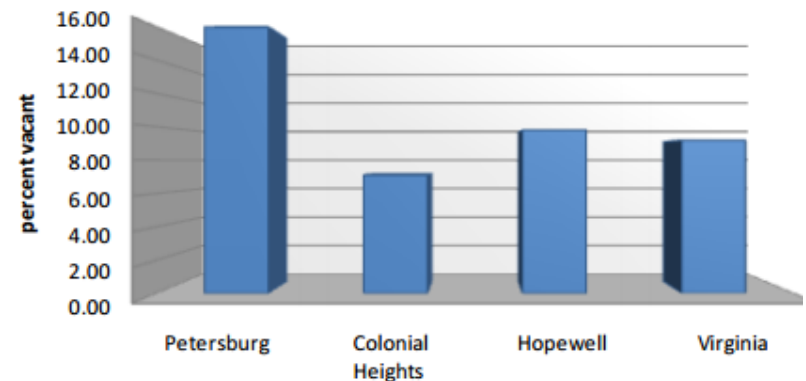
These areas will also be promoted to developers and have incentives for development that may include Enterprise Zone incentives, sale of city-owned land, reduction or elimination of

parking requirements, and expedited review times for site plan and building permits.

## Regional change in housing units 1980-2006



## Tri-City Area Housing Vacancy Rates 2010

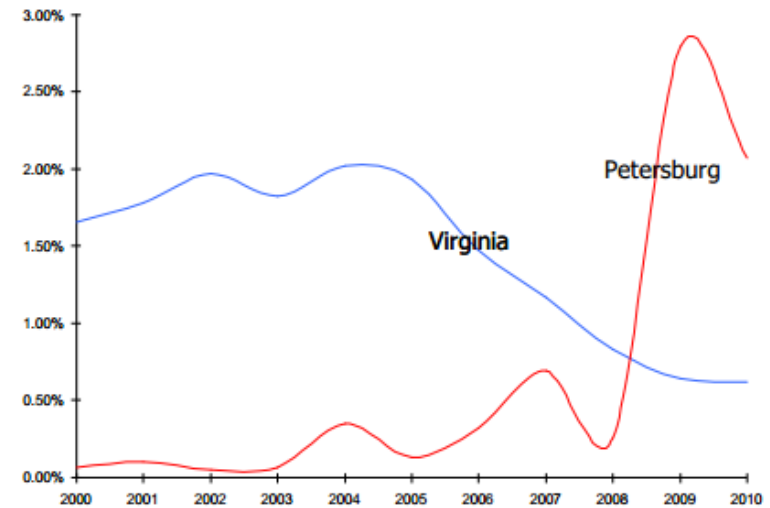




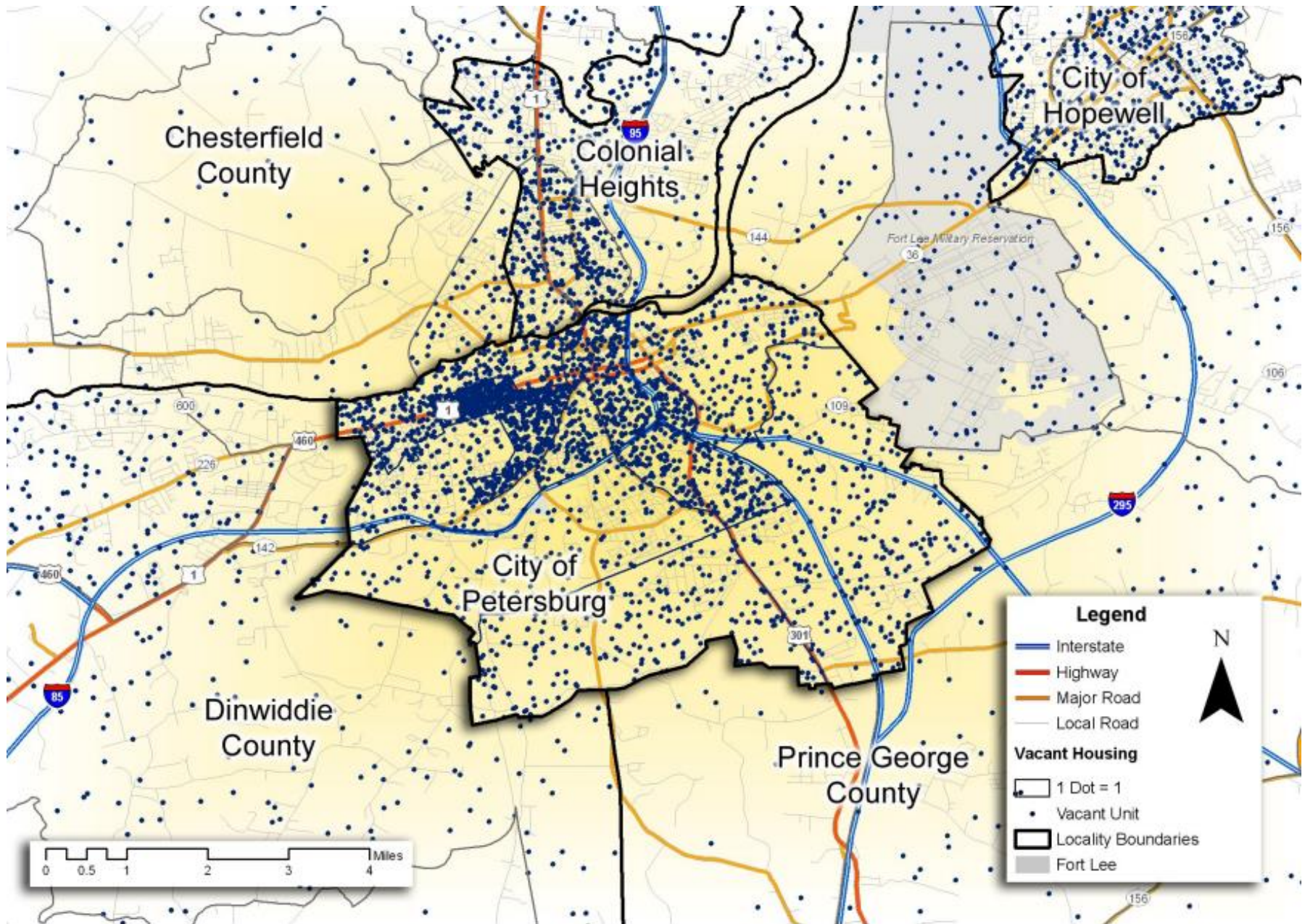
## Housing growth from 2000-2010

Housing permits fell sharply from 2006 to 2009 in the state overall. In Petersburg, however, the percentage of new housing permits compared to existing stock increased dramatically over the same period. The national housing collapse had a major impact on new construction development it's interesting to note that in the City of Petersburg it affected new construction of single-family residential dwelling units, but had no impact on multifamily residential units. In fact the City of Petersburg experienced major multifamily development during the years of 2006-2013. The demands of the Fort Lee expansion had a greater local impact and contributed to the overall increase in new units, while housing markets in the rest of the State were in decline. New units have been created primarily through the adaptive reuse of industrial buildings. This data suggests that the City seems to be attracting more renters and singles/young couples than families.

## New Housing Units as a % of Total Housing



Source: 2010 U. S. Census



Housing Vacancies 2010



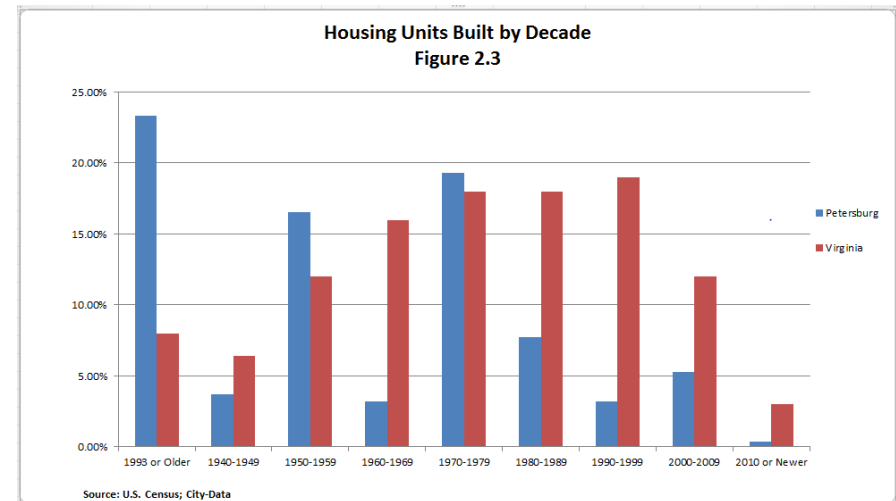
## Age of Housing Stock

The age of housing in a City is an important characteristic in understanding how to promote neighborhood stability. Lack of new housing with significant amounts of older housing suggests the need for the city to invest in the revitalization of its housing stock to support economic vitality. Figure 2.3 shows the majority of housing was built between 1950 and 1980. Figure 2.4 shows how housing growth in Petersburg dropped off by 1980, reflecting the sprawling growth that has made its way into Colonial Heights, Prince George and Dinwiddie Counties.

Addressing housing issues is part of a comprehensive need to address the socioeconomic challenges facing the City. In order to bring residents back to the City and retain those still here, housing must be safe, affordable, and attractive. The condition of the housing in a number of neighborhoods in the city is inextricably linked to the number of vacancies and the decline in population that has happened in recent years.

The City can capitalize on its unique, varied in style, older, housing stock. Older housing is attractive to some and may win over new lower quality housing in the suburbs, but the city has to use it as a marketing edge in order to attract the individuals who would want to take on the renovation project or be a part of the revitalization efforts. Renovation of industrial buildings into lofts and restoration of Victorian style homes found in the Historic District also attract a varied demographic, which is just as important for the economy as retaining current residents and catering to families. There are amenities offered in newer homes that are nonexistent in an older urban home. However, outward growth of new housing to other localities need not be a recipe for sustained population loss in Petersburg’s historic neighborhoods. The strategy for sustaining our older neighborhoods has to have a methodology of beginning with one house at a time but the goal is to improve the overall condition of the neighborhoods. This will require identifying resources to impact the entire neighborhood and not just randomly doing a house here and there.

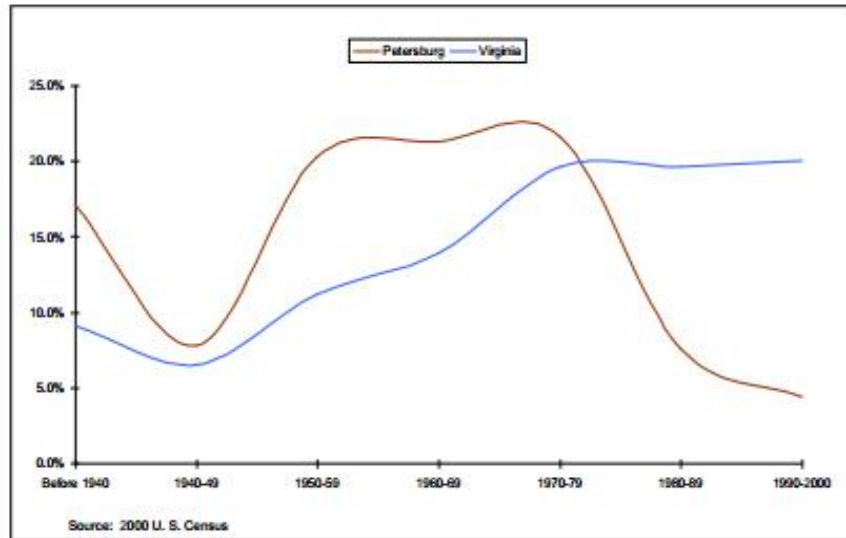
The age of the housing stock reflects the pattern of growth in Petersburg and the surrounding region. As is apparent in the graph pre-1940, the pattern of growth was clustered around existing transportation routes, namely the Appomattox River, rail roads and state roads. The post-World War II era saw an explosion of housing growth in Petersburg, but also throughout the region, especially in Colonial Heights and the City of Hopewell. Since 1980, as regional growth has leveled off, growth has been sporadic in Petersburg. The City has seen growth recently happening around the new hospital site on South Crater Road, the downtown area and south of 95. The progression of growth on the following three maps demonstrate where housing growth in the City was greatest in the 1950 up until 1980 and has since spread out and leveled off. With the economic development strategy and the new direction of the policy makers, the expectation is that Petersburg will begin to experience growth and be prepared for it.



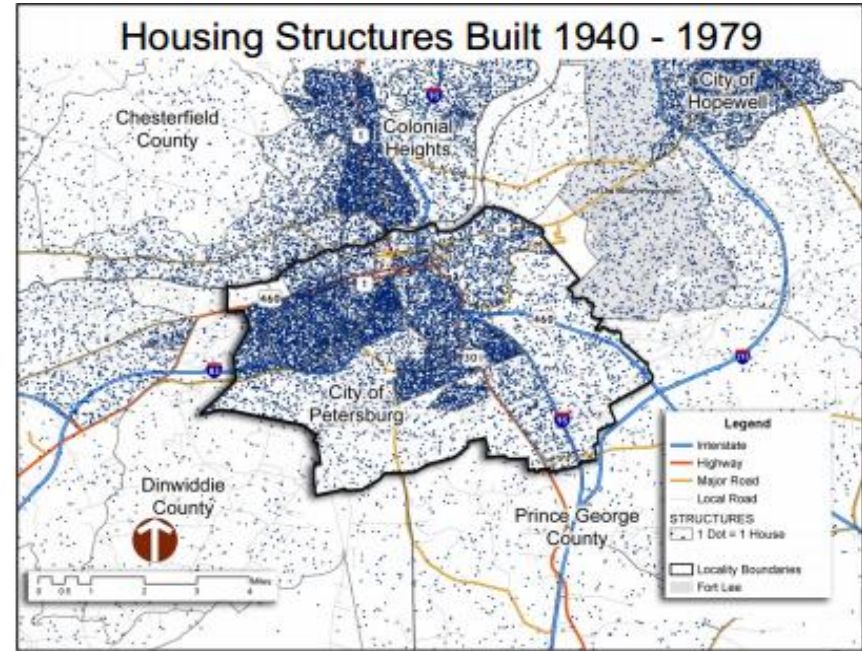




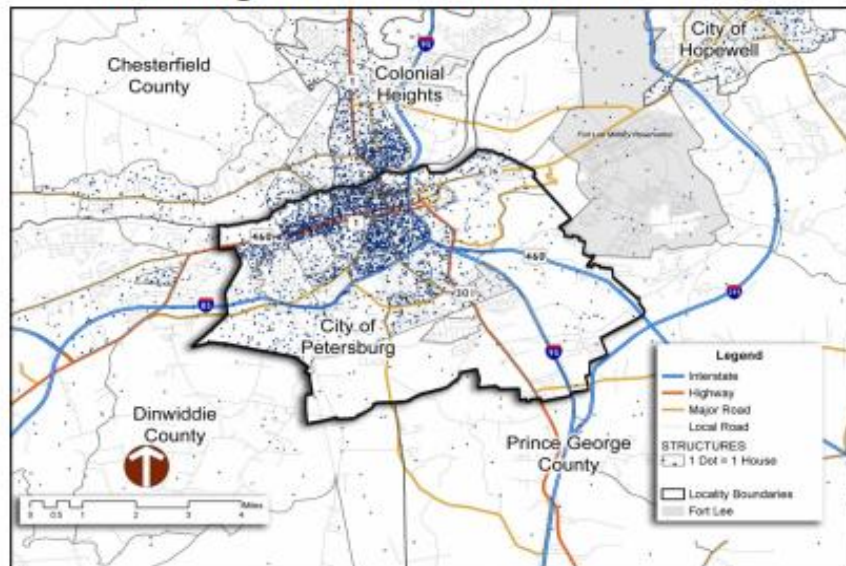
## Housing Units Built 1940-2000



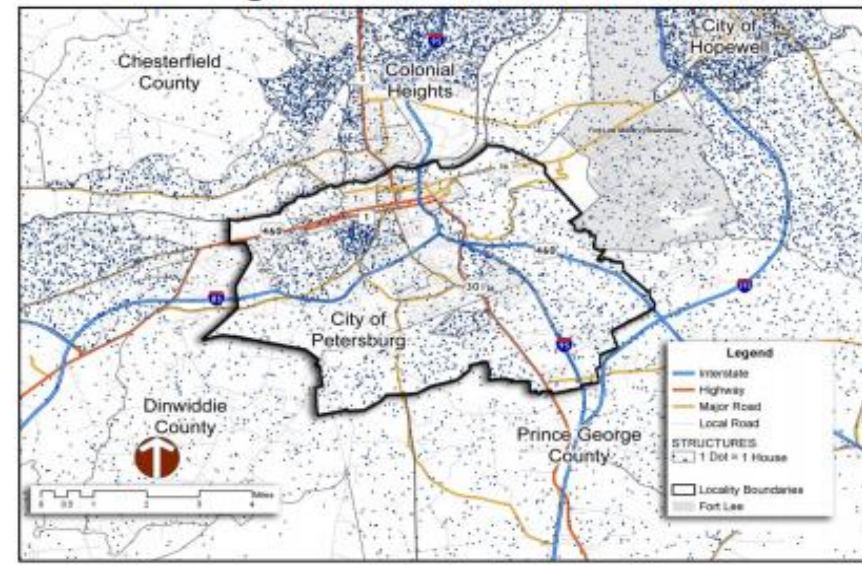
## Housing Structures Built 1940 - 1979



## Housing Structures Built Before 1940



## Housing Structures Built 1980 - 2000



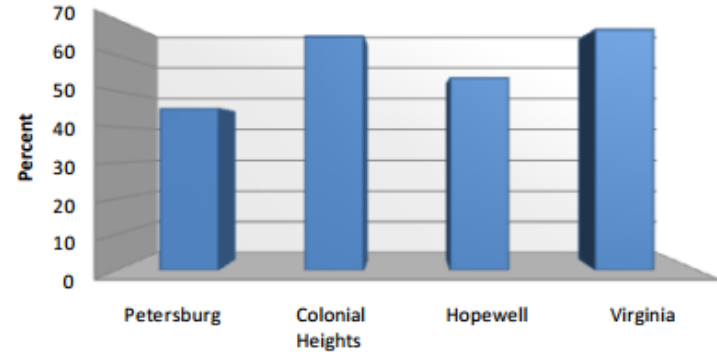


## Occupancy and Housing Diversity

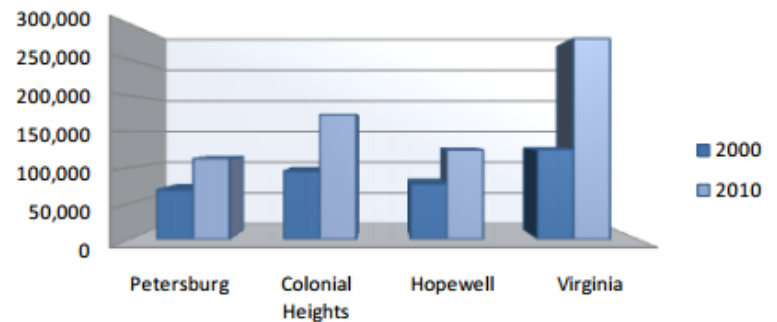
The United States has a high homeownership rate due to federal policies which have supported homeownership and single family home construction. In suburban and urban areas this has resulted in housing authorities promoting single family affordable housing, Multi-family housing, while a form of affordable housing is usually characteristic of urban neighborhoods and urbanizing areas. With national homeownership rates at 67%, high percentage of multi-family units in urban areas often appear out of step with the rest of the nation.

Homeownership rates in Petersburg are relatively low in comparison with the surrounding area and the statewide rate of 67.2%. When compared to the more suburban jurisdictions in the region, as well as the state, the three cities of Colonial Heights, Hopewell, and Petersburg have lower homeownership rates in the region. While these statistics suggest Petersburg does not match up with national and state trends, this is not necessarily cause for alarm. Homeownership is important for stable neighborhoods, and there are areas of the City which can cater to families desiring single family homeownership. But as discussed earlier, Petersburg as an urban center can appeal to homeownership in the form of multi-family units (duplexes, condos, etc.), as well as providing the market for multi-unit housing. Housing diversity is an asset for urban areas, and a policy Petersburg should encourage if it is to encourage growth and revitalization in all of its diverse neighborhoods.

### Tri-Cities Home Ownership Rate 2010



### Tri-Cities Median Household Value - 2000 and 2010



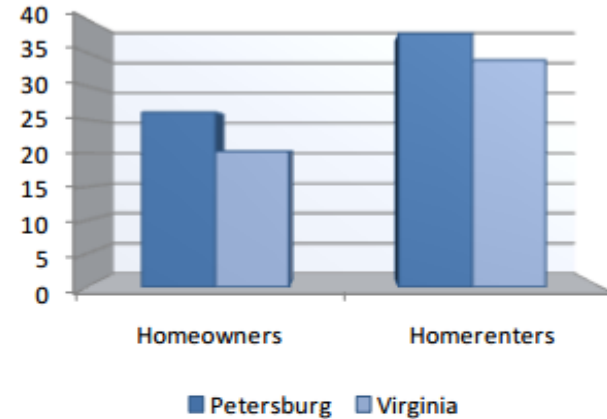


## Housing Affordability & Housing Costs Burden

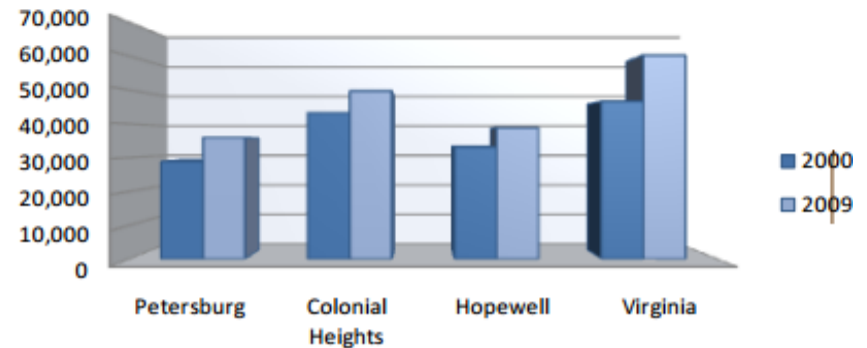
In addition to the age of housing, housing diversity and the overall quality-of-life the affordability of housing is important to the economic vitality of Petersburg. A relatively easy way to gauge affordability is to compare the change in median housing value from the 2000 Census and 2009 estimates with the change in the median household income over the same time period. Recent data shows how household incomes have increased during the 2000s. While the City's 24% increase in household income was the highest in the Tri-cities, the change in household value during that same period was much greater at 64%. This means for residents living and working in Petersburg, owner occupied housing, like that of renting became much less affordable. In order to address this deficiency and reduce the housing cost burden, the City has focused on supplying high quality rental housing option in an effort to reduce the cost burden.

An immediate concern is to address the fact that Petersburg has the lowest median household income in the Tri-cities area, and the State. The plan is to balance our communities with mixed-use, mixed incomes as well as newly constructed or rehabilitated single-family residential uses and multifamily residential options. Old Town and pockets of older neighborhoods have had visible success with revitalization efforts. Population growth from BRAC and Fort Lee could continue to be the driving force behind the momentum that is turning the trends in an upward direction. Although, we recognize that our aging housing stock is a major challenge ahead, we are also energized and mobilized to take advantage of the opportunities that will help us to overcome them, which are outlined in this plan.

**Percent of Population Paying More Than 30% of Income on Housing Costs**



**Tri-Cities Median Household Income 2000 - 2009**





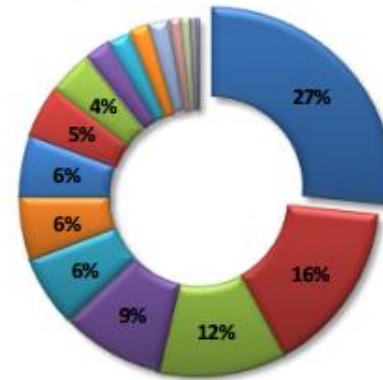
## Economic Profile

Petersburg’s 250 year history has experienced significant economic and demographic shifts. The location of the city has been important in determining its success as an employment center for the region. Its position as a port on the Appomattox River, a Rail Road Hub, convergence of Interstates 85 and 95, Routes 1 and 460 are all part of the transportation network that move people and goods and influence decisions made by industries in the City.

As with many Cities in the United States, interstate construction and federal housing policies opened up the countryside beyond the City limits to new retail and housing developments. The post-World War II era has presented many challenges to the Petersburg economy as manufacturing has declined and the rise of the suburbs are two major factors that stripped the City of its population and retail base. Yet, Petersburg is indeed still an employment center for the region, with a strong health care industry and the ability to revive its economic base.

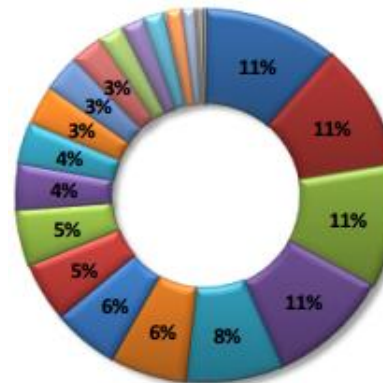
As the graphs to the right indicate, the Petersburg economy, in comparison to the Commonwealth, shows specialization in Health Care, Government, and Retail Trade. The Retail and Healthcare industries have been a growing portion of the economy, while manufacturing has also been growing portion of the economy, while steady declining in other areas. In other industries, the City is on par with the rest of the State, with the exception of Scientific & Technical Service, which comprises only 2.1% of the economy in Petersburg, compared to 11% statewide.

**City of Petersburg  
Primary Employment  
by Industry - 2010**



- Health Care and Social Assistance
- Local Government
- Retail Trade
- Manufacturing
- Food Services & Accomodations
- Waste Management
- Other Services
- Wholesale Trade
- Construction
- Warehousing 2%
- Finance 2%
- Scientific/Technical services 2%
- State Government 2%
- Federal Government 1% or less
- Educational Services 1% or less
- Information 1% or less
- Management 1% or less

**Virginia  
Primary Employment  
by Industry - 2010**



- Retail Trade
- Professional, Scientific, Technical
- Local Government
- Health Care & Social Assistance
- Accommodation/food services
- Manufacturing
- Waste Management
- Construction
- Federal Government
- State Government
- Other Services
- Finance & Insurance
- Wholesale Trade
- Transportation / Warehousing
- Information 2%
- Management of Companies 2%
- Educational Services 2%
- Real Estate 2%
- Arts & Entertainment 1% or less
- Agriculture & Forestry 1% or less
- Utilities 1% or less
- Mining/Oil & Gas Extraction 1% or less



## Unemployment & Income

While the Petersburg economy is diverse, the growth of lower wage jobs without commensurate growth in middle and high salaried employment is a concern. Therefore, it is important to understand the economic indicators such as unemployment and income to gain a comprehensive perspective on current economic conditions.

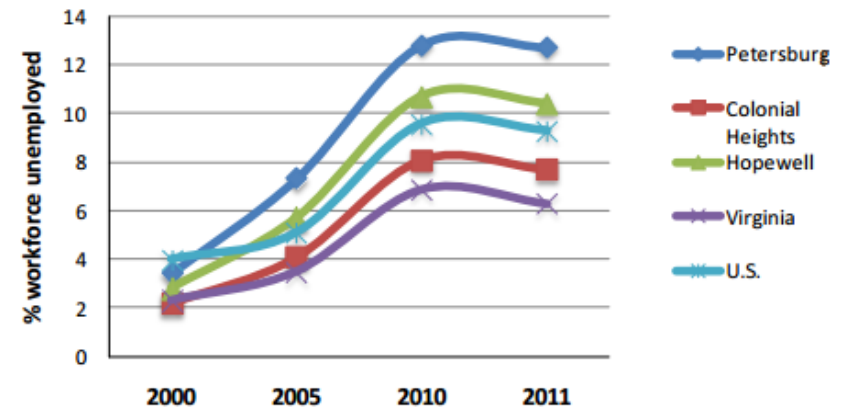
Petersburg's unemployment rate exceeds the rate for the region, the State, and the Nation. It has been consistently higher than the State's by a range of 1% to 4% in the past 10 years. Another factor of employment, which is harder to gage, is underemployment ( persons working part-time desiring full time work, persons working multiple part-time jobs, etc.). The Virginia Economic Development Partnership estimated that in 2010 an additional 1,519 persons of the workforce in Petersburg was underemployed. This is reflected in the City's low median income.

Even though the regional economy is growing, it is apparent that growth has not been completely experienced by Petersburg. With too many neighborhoods at low income levels, it is difficult to attract business and industry that will revitalize a neighborhood or corridor. High unemployment, high underemployment, and low median household incomes are in part due to losing higher paying manufacturing jobs, which have been replaced partially by lower paying retail and fast food sector jobs.

Since job opportunities in the City are limited, it is imperative that access is available to jobs and this factor is being addressed on a regular basis by Petersburg Area Transit. Additional routes and assessments are done regularly to see which other markets offer employment opportunity and the ability to earn a higher wage. In addition to Transit creating solutions and implementing them; regional cooperation will be required to connect people to employment. For Petersburg, it is also meaningful to understand the commuting patterns for the city, how this relates to economic

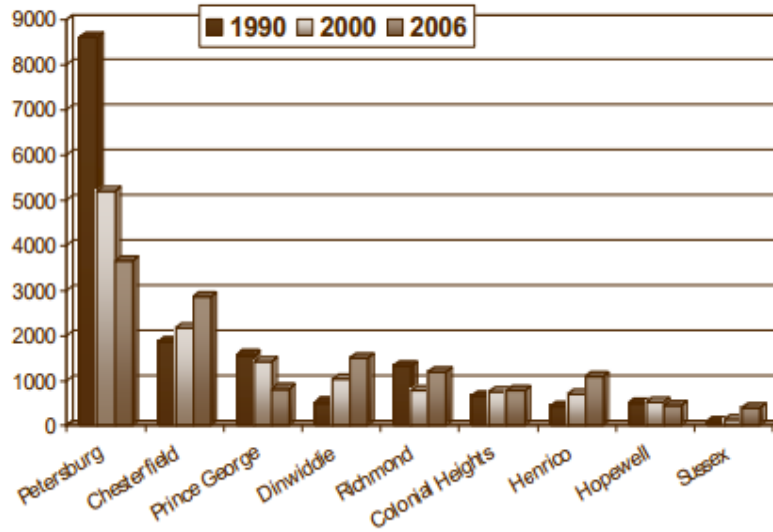
opportunity, and how the city relates to the region as an employment center.

### Unemployment Rates 2000 -2011





### Commuting Patterns 2006 Where Residents of Petersburg Work



Source: U. S. Census, 1990, 2000 and Labor Employment Dynamics

#### Petersburg, the Employment Center

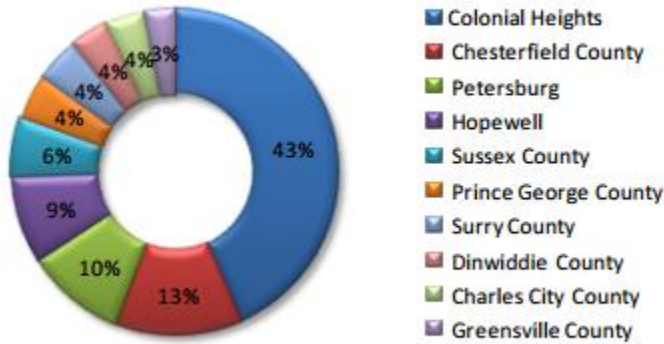
One way to examine the status of a locality as an employment center in the region is to look at commuting patterns. The City of Petersburg since the 2000 census has become a net Out-Commuting locality, meaning the number of workers traveling into the City for work is now less than the number of residents who commute out of the City. In 1990, about 1,300 more people commuted into the City for work than left each day. By 2000 that number increased to about 2,500 more workers traveling into Petersburg than were leaving. But the most recent census figures for commuting patterns show as of 2006, 2,385 more workers leave the City for work each day than commute into Petersburg. The table shows the changing trend of Petersburg as numbers commuting out of the city have increased since 1990.

It is also apparent that a large portion of Petersburg’s citizens work and live in Petersburg, although this number has been declining. In 1990 about 54% of Petersburg’s 16,000 person labor force lived and worked within the City. In 2000 just 40% of the now 13,200 person labor force lived and worked in the City. By 2006 25% of the City’s labor force lived and worked in Petersburg. This is a trend which may be explained by both population loss and employment opportunities.

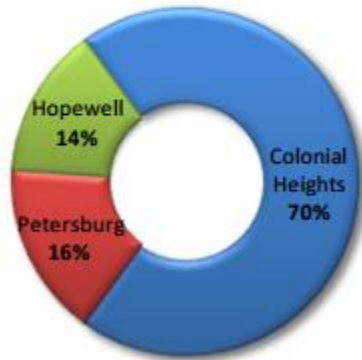
Petersburg has shown resiliency in retaining its status as an employment center in the region, yet this subject should be of concern to the City as uneven regional growth wears away at the City’s economic base. Of principal concern are the extremely unbalanced revenue streams within the Tri-cities as revealed in the adjacent charts, although Petersburg shares the same level of transportation infrastructure, and has a larger population. Colonial Heights has successfully positioned itself as the regions’ retail and commercial destination, controlling a staggering 70% of the Tri-cities retail. The City is actively pursuing commercial retail development for a broader market.



**Crater District per capita sales revenue - 2010**



**Tri-cities per capita sales revenue - 2010**



Petersburg is an employment center for the surrounding localities, but it is not the destination which attracts the most workers from any one of its neighboring localities. In relative terms, the City must consciously work to gain influence within the region since we are outpaced in population and economic growth. Working regionally when it is best suited with economic development efforts and agencies; Petersburg is poised and capable of reversing the recent trends. It can build off the success that it has experienced over the last few years, topped off by the assets, such as the strong presence of the healthcare industry and the decisions of long term industry and employers who opted to stay in the city.

PETERSBURG'S LARGEST EMPLOYERS		
2013		2014
Southside Regional Medical Center	1	Southside Regional Medical Center
City of Petersburg	2	City of Petersburg School Board
Amsted Rail company Inc.	3	City of Petersburg
City of Petersburg School Board	4	Amsted Rail Company, Inc.
Horizon Mental Health Management Inc.	5	Horizon Mental Health Management, Inc.
Wal-Mart	6	Walmart
Districts 19 Mental Health Services	7	Good Neighbor Homes, Inc.
Beverly Home Care	8	Beverly Home Care
	9	District 19 Mental Health Services
Good Neighbor Homes Inc.		Quality Plus Services
Virginia Linen Service Inc.	10	

Source: Virginia Employment Commission, Quarterly Census of Employment and Wages (QCEW), 4th Quarter (October, November, December) 2014.

**Petersburg's Largest Employers**

The City's large share of employment in the healthcare government/education, manufacturing, and retail industry is reflected in the list of largest employers from 2014 to the same list in 2013 offers insight into the stability of the economic base; however, there is also an opportunity to attract additional employers seeking a diverse skill set.



Southside Regional Medical Center and the complimentary healthcare services, which cluster around its location, is an important base for the economy. Walmart reflects the lower wage job in the chart of Petersburg largest employers.

Manufacturing still has a presence in the City of Petersburg; Unitao only operating a small segment of their operation with vitamin production, and Bremco, Inc. are among the manufacturing companies, who are not among the largest employer list but still contributing to the economy of the city.

Outside of the list of Petersburg's employers it is important to emphasize the importance of regionalism. While these employers are specific to the City limits of Petersburg, they attract workers from the region, and it is equally important for Petersburg to work in a regional capacity. In addition it is important for the citizens of Petersburg to have the necessary skills and training to be able to be competitive and apply for jobs within the region.



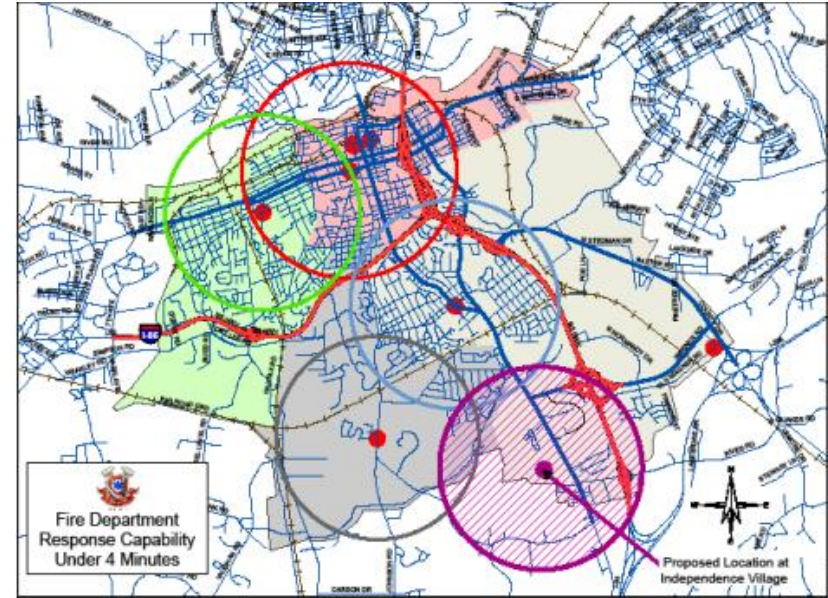


## Community Facilities

Community Facilities are the public buildings and services that support the health, and safety of the community. These Facilities also represent the public investment in the City; accompanied with private investment and development. As a public investment it is the responsibility of the City of Petersburg to provide the services necessary for a healthy and safe community.

### Police

The Petersburg Police Department has recognized several trends in the City that will affect the distribution and expansion of the Police Force. Although the City has experienced a decline in population over the past ten years, the demands for police service did not shrink with it. The population losses over the past years could not be the percentage of those in Petersburg who were the heaviest users of Police services, because there was no decrease in the demand for police services. Likewise, as the population in Petersburg is aging, it creates additional strain on the Police force. Older residents are less capable of taking a more active partnership role in community policing, yet still require the same level of police service. This means that shrinking population in the northern sections of the City do not equate to greater flexibility and an excess of personnel to address the growing population in the southern portion of the City. The Police Department has addressed the concern of the growth in the Southern portion of the City and strategically plans and schedules the officers in order to maximize complete coverage of the City at all times. The City has already begun planning and allocating resources in order to make the appropriate public investment to have additional substations and facilities to meet the demands of the City.



### Fire, Rescue & Emergency Services

The Petersburg Department of Fire, Rescue, and Emergency Services are a progressive, full-service fire department. Established in 1773, the department is rich in history tradition, and is proud to call itself one of the oldest organized fire departments in the country.

#### Services

The department provides and offers a variety of services which includes:

- Dive operations
- Emergency medical services that provide basic and advanced pre-hospital life support
- Fire, building, and housing code enforcement
- Fire prevention and public fire and safety education programs
- Fire suppression
- Rescue services



The Petersburg Department of Fire, Rescue, and Emergency Services are also a participating member in two regional specialized operation teams: Hazardous Materials and Heavy Tactical Rescue. In the event of a local or regional disaster, the department has been charged with the lead responsibility of Emergency Management for the City of Petersburg.



The Petersburg Fire Department operates 4 stations throughout the City of Petersburg. The National Fire Protection Association (NFPA) recommends a 6-minute maximum response time for professional fire departments to reach all locations in their jurisdiction. Most areas of Petersburg lie within a 6-minute response time and those sections of town that do not are being addressed through policies that will ensure compliance with NFPA required 6-minute response time. Outlying areas of the City receive less responsive services. These areas include the Route 36 Corridor, the Western edge of the City (South of I-85) and the Crater Rd and 460 Corridors in the southern portion of the City.

Fire zones should be realigned and one of the two northern fire stations should be realigned given the high level of overlap and crossover out of City boundaries. Two new stations are being planned through the Capital Improvement Program of the City to accommodate the influx of development along the South Crater Road and 460 Corridors. In anticipation of the growth in these areas, attention should also be given to the impact on water pressure and ensuring that levels are adequate for fire protection. In an effort to increase fire protection, the Fire Marshal's Office provides a minimum annual inspection of all moderate/high hazard structures.

## **Department of Social Services**

The Petersburg Department of Social Services is the social support arm of the City. The Department's mission statement is to "deliver quality services to people in our community that will promote self-sufficiency, responsibility and safety." The stated goals are to assist persons to triumph over poverty, neglect and abuse. The programs and services that are in place to accomplish these goals are outlined below.

The benefits that the Department provides are a) food stamps, b) Medicaid, and c) TANF (temp assistance to needy families). The Department provides additional services that are not contingent upon financial need. They address a) child abuse, b) child care, c) foster care, and d) adoption for children. There are also services that help serve the needs of the City's elderly population. In an aim to reduce the poverty rate, the Department of Social Services is collaborating with other departments to creatively develop and fund with private resources programs that will link jobs created by new development and growth in the City to those who are currently unemployed or underemployed.

The Department of Social Services has added a Fatherhood initiative to its activities to support fathers and their families. In addition, social service advocates through education the ABC's in preventing infancy deaths.

## **The Petersburg Circuit Court**

The Petersburg Circuit Court is a trial court that oversees civil and criminal court cases in Virginia's 11<sup>th</sup> district. While the function of the court is outside of the purview of this Plan, there are items that must be addressed in the Capital Improvements Plan. The court facilities are outdated and undersized. There are a series of capital improvements that need to be made, most of which were addressed in a plan to expand the court facilities. The Capital Improvement Plan is addressing improvements that are necessary for the protection and stabilization of the clock tower and the building.



## Public Library

The City's Public Library System is here to serve the community of Petersburg. The library strives to provide all of the resources needed to progress in life. A wide range of services are offered to the residents of Petersburg.

Services Offered:

- **Computer Training Courses**
- **Meeting Rooms** available for study groups or meetings.
- **Research Room**
- **Copiers and Microfilms**
- **Interlibrary Loans**
- **Health Resource Center**
- **Financial Management and Resource Center**
- **Children and adult services**

The 42,000 square foot, two-story building is located in the heart of downtown Petersburg, on the corner of Market and Washington Streets. Sustainable design practices include 28% energy reduction, natural daylight, 40% water reduction and use of low emitting and sustainable materials. Natural materials such as wood, brick and stone, while sustainable, also complement the rich building fabric of Petersburg. The landscaping and irrigation systems have been designed to reduce irrigation water consumption by at least 50%.

The new Library achieved LEED certification by implementing practical and measurable strategies and solutions aimed at achieving high performance in: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. The Petersburg Public Library is proud to be the first building in Petersburg to receive this certification. The library officially opened to the public in spring, 2014. The facility provides much needed resources and space for community needs.



## Utilities

The Department of Public Utilities owns and maintains the lines which provide water and sewer services to houses, businesses and industries. These utility services are a vital function for the economic vitality and overall health of the residents of Petersburg. Reliable existing service to older neighborhoods is important to encourage revitalization efforts.

The Capital Improvement Program (CIP) acknowledges the maintenance needs and has earmarked for investment in the aging infrastructure to prevent failure in the system. In addition, Petersburg has emergency plans for water service to come from Prince George County in the event of a system failure. Several lines in the current system have undergone repair and others scheduled so that a failure in the system does not occur.



The management of water resources and the treatment of sewage are also important for the environment. Water service and sewage flows affect not just the water levels of Lake Chesdin and the water quality of the Appomattox River, but also the ecological health of the Chesapeake Bay

## Water Service

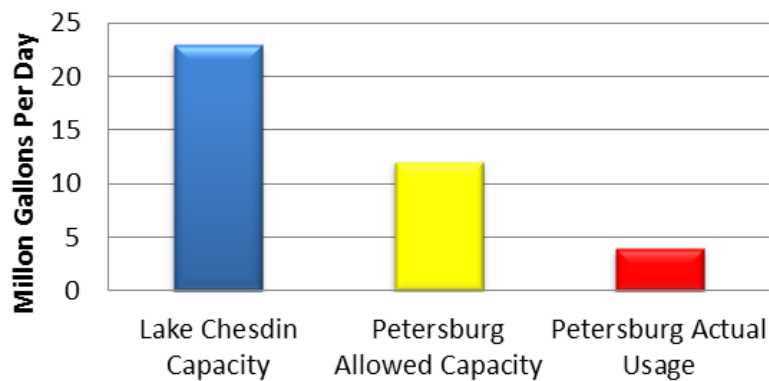
Lake Chesdin, located west of Petersburg, is created by the damming of the Appomattox River at Brasfield Dam (also called Lake Chesdin Dam). It is the primary Source of water for the City. In addition to providing recreation for boaters and fisherman, the reservoir provides the capacity for 96 million gallons per day (mgd) of water to Petersburg, Colonial Heights, Dinwiddie, Prince George, and portions of Chesterfield County. The Appomattox River Water Authority (ARWA) is the regional public body which administers the water supply and is jointly owned by the localities it serves. Petersburg is allocated 16.69% of the total 96 mgd capacity, which amounts to 16.02 mgd.

Petersburg has contracts with Fort Lee, Virginia State University, Fort Hayes, and customers along Johnson Road in Prince George County for usage of Petersburg’s share of water purchased from ARWA. Together they comprise about 15% of the demand for Petersburg’s share of the water. Currently Petersburg water usage is about 6 mgd and this represents service to about 12,000 customers, which includes the four users mentioned above who are not within the City limits. This is well below the 16.02 mgd allotment from ARWA. Even with the additional users and an independent engineer’s projections for increased demand from population growth in Petersburg, the determination has been made in the most recent Regional Water Supply Plan that the City has sufficient water allowances from ARWA to last through the year 2060 and beyond.

## ARWA and Petersburg Water Service Issues

Although Petersburg has enough water allotted to the City, the growth throughout the region will place strains on the regional water supply including Lake Chesdin and other regional water sources. According to supply and demand projections for the region, it is estimated that by 2033 there will be a shortfall in available supply. Part of the shortfall will be due to increased demands from population growth, while shrinking supply from sedimentation in Lake Chesdin will also play a role. The Regional Water Supply Plan names a variety of options for increasing the supply of water, including ways to increase reservoir capacities, finding other sources of water, and instituting demand control ordinances. In addition, the City shall make an effort to study the feasibility of accessing and/or creating a secondary source of water for emergency conditions in the region.

**Appomttox River Water Authority & City of Petersburg Water Usage**



Source: South Central Wastewater Authority

The Department of Public Works must address the age of the primary supply lines to the City. The 16 inch water supply line is about 100 years old and “highly tuberculate.” This means over time as the pipe has become corroded; tubercles have accumulated from minerals in the water reducing flow capacity and wearing away at the reliability of water service through the pipeline. The planning of



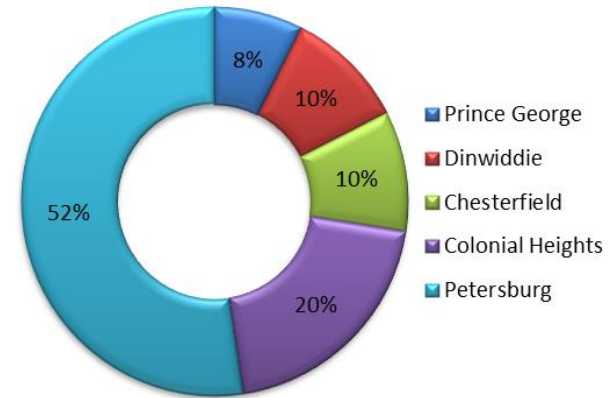
rehabilitation and replacement of these lines are being done through the Capital Improvement Program (CIP), as required by the plan created for the Appomattox River Water Authority (ARWA). The additional resources have been identified through general funds and the capital improvement program. These improvements will allow an efficient operation at ARWA and an efficient manner of water delivery.

**Sewer Service**

The South Central Wastewater Authority (SCWA) is a public entity jointly owned by the communities it serves: Petersburg, Colonial Heights, and portions of Chesterfield, Dinwiddie, and Prince George counties. Located in Petersburg on Pocahontas Island, SCWA’s facility has the capacity to treat 23 million gallons per day (mgd) of sewage. It currently operates at half capacity. While SCWA administers the treatment of sewage flowing through its facilities, it is important to note that Petersburg is responsible for the maintenance of the collection system and sewage lines up to the gates of SCWA’s treatment plant.

Each locality served by SCWA is allocated flows based on the percentage of ownership in SCWA. Petersburg owns the largest share at 52.5% of the 23 mgd capacity, as demonstrated by the graph.

**South Central Wastewater Authority & City of Petersburg Capacity**



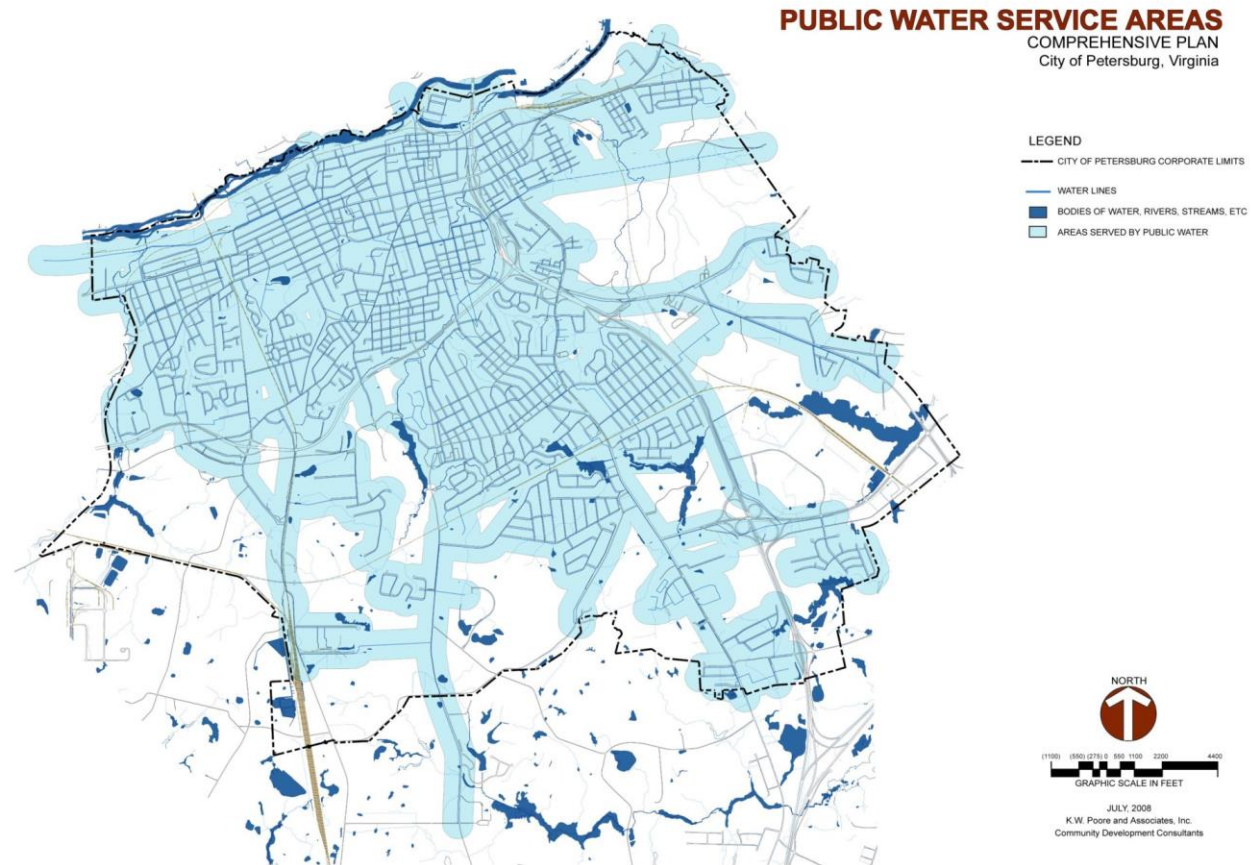
Source: South Central Wastewater Authority

**SCWA and Petersburg Wastewater Services Issues**

While Petersburg has the luxury of more than enough sewer treatment capacity, like other localities located in the Chesapeake Bay Water Shed. The SCWA is required under the Chesapeake Bay Preservation Act to comply with limits set on the amount of nitrogen and phosphorous nutrients discharged when treated water is released back into the Appomattox River. That regulatory process is governed by the issuance of a permit which requires periodic review; the current permit is scheduled for review in 2017. This review will determine what improvements may be necessary to the SCWA facilities to comply with the Chesapeake Bay Preservation Act. In addition, if improvements are necessary the timeline will be established for the expected completion date of such improvements. In anticipation of these improvements and the cost of such improvements the City of Petersburg has already begun identifying the sources of funding. Petersburg and the other members of SCWA will have to bear the cost of purchasing credits from other water and sewer authorities who are already in compliance and selling credits if the SCWA during the review is deemed to be out of compliance.



If improvements are necessary it could cost an estimated \$68 million dollars to reduce nitrogen and phosphorous discharge in the Appomattox River. A grant from the Water Quality Improvement Fund will reduce the cost to member localities; nonetheless, Petersburg will be responsible for 52.5% of the final cost. Whether buying credits to stay compliant or financing the cost of the treatment upgrades, this project is a costly mandate to the City. It is an ongoing discussion as the City prepares for the future review and maintains the current level of water and sewer services while planning for future growth :





## Transportation

The transportation plan is intended to complement the Land Use Plan. Transportation affects quality of life, economic development, and the environment. It is one of the defining characteristics for the citizens, and visitors who use the roads, highways, railways, busses, bike lanes, crosswalks, and trails each day. Investment in transportation has a significant impact on the community.

A well-designed and maintained transportation system is vital to the city's health. While many residents prefer the use of their own car to reach their destination, public transportation is the only feasible option for many residents. Access to jobs, homes, school, and other destinations depend on the timeliness and reliability of public transit as well as other transportation options. Understanding and addressing transportation needs requires the realization that land use and transportation planning are linked. As the city looks to the future, it aims to review its current transportation system, current land use, and develop the appropriate policies to address future growth.

The following principles are intended to guide transportation (and Land Use) decisions to benefit the citizens and visitors of Petersburg.

Plan, establish, and maintain a city-wide, interconnected transportation system.

1. Establish a transportation system which preserves and supports land use plans.
2. Encourage the reduction of traffic congestion.
3. Increase the mobility of the public through public transportation and regional cooperation.

### Functional Classification of Roadways

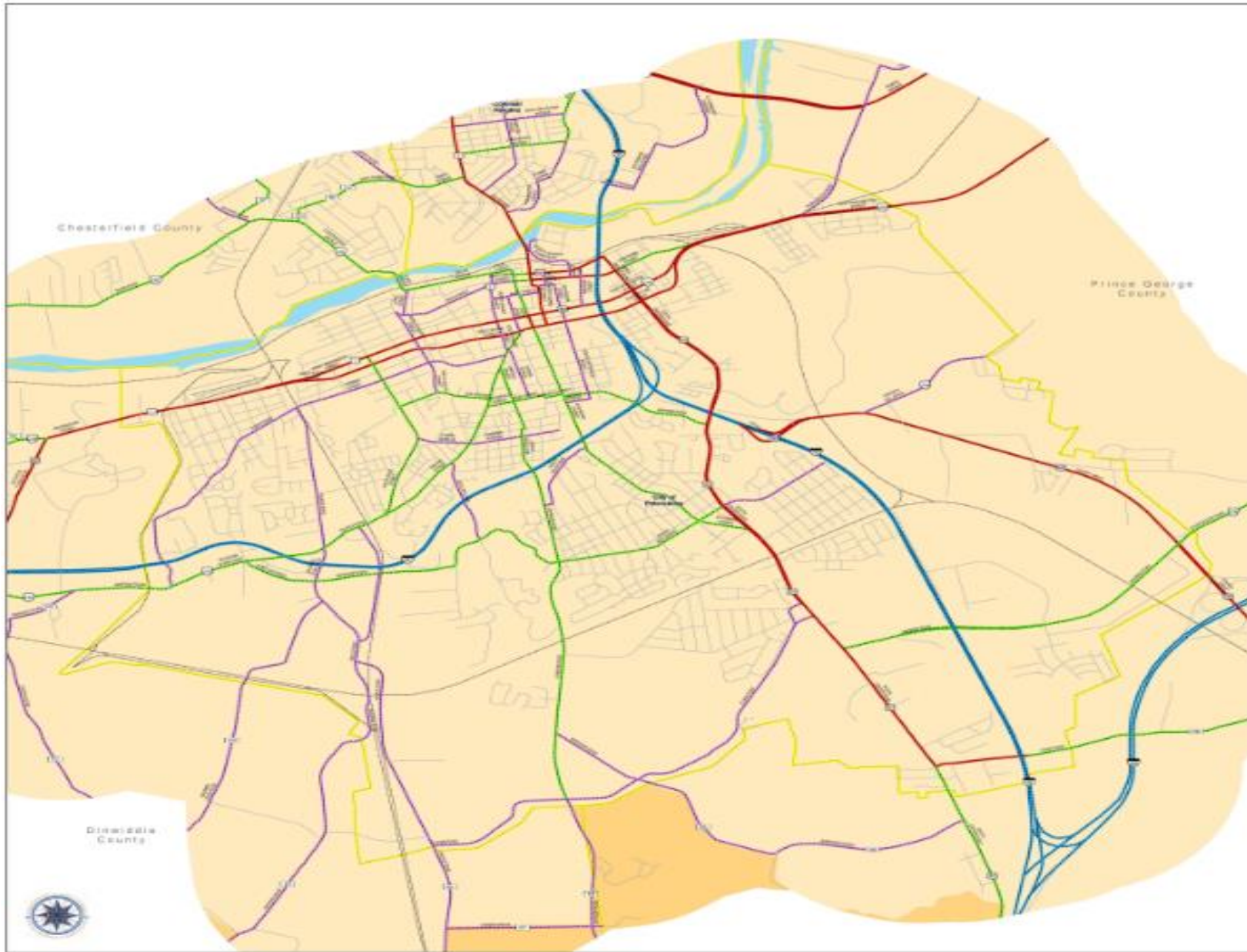
The City of Petersburg has a street hierarchy system that contains five types of roadways that are each classified based on how they function and are currently designed. The Functional Classifications are:

1. Interstate: Designed to be full access controlled, while serving the highest volumes of traffic traveling the long distances.
2. Principal Arterials: Provide a high degree of mobility for shorter distances of travel through urban centers and rural areas.
3. Minor Arterials: Interconnect larger arterials while carrying moderate trip travel at higher speeds than Collectors.
4. Collectors: Gather and funnel traffic from local roads to arterials. Collectors often serve large residential and shopping areas.
5. Local Road: Provide direct access to adjacent land uses and do not carry through-movement traffic.

Source: FHWA TOPR 33-01-11005: Highway Functional Classifications Concepts, Criteria and Procedures 2012 Edition, September 2012DTHF61-07-D-0013 Program Support for Highway Policy Analysis

### Roads

If the roads are ineffective in moving people and freight in a timely manner, then all other activities suffer. Effective and smooth transportation is primary, yet consideration is given to how the roadway system contributes to the "livability" of Petersburg. The City's roads offer the opportunity to accommodate multiple forms of transportation. Future growth should include a roadway system that allows for multiple routes between destination points and alternative modes of transportation such as buses and bikes.



Functional Classification System	FDOT Functional Class
2005 Functional Classification	May 10, 2005
2005 Functional Classification	July 8, 2007

The primary responsibility of the Virginia Department of Transportation is to provide a safe and efficient transportation system for the Commonwealth of Virginia. The Virginia Department of Transportation is committed to providing a safe and efficient transportation system for the Commonwealth of Virginia. The Virginia Department of Transportation is committed to providing a safe and efficient transportation system for the Commonwealth of Virginia.

Virginia Department of Transportation, Department of Transportation  
 1110 North 1st Street, Alexandria, VA 22304-6100  
 Telephone: (703) 291-6000, Fax: (703) 291-6001  
 Website: www.vdot.gov

- |  |                  |                           |
|--|------------------|---------------------------|
|  | Interstate       | Functional Classification |
|  | Urban Expressway | Urban Expressway          |
|  | Urban Freeway    | Urban Freeway             |
|  | Urban Collector  | Urban Collector           |
|  | Urban Local      | Urban Local               |
|  | Suburban         | Suburban                  |
|  | Rural            | Rural                     |
|  | County Road      | County Road               |
|  | Local            | Local                     |
- Interstate
  - Urban Expressway
  - Urban Freeway
  - Urban Collector
  - Urban Local
  - Suburban
  - Rural
  - County Road
  - Local

**ROADWAY FUNCTIONAL CLASSIFICATION**

**City of Petersburg**  
**2005 Functional Classification**

City of Petersburg





**Interstates:** Petersburg sits at the intersection of two Interstate Highways, I-95 and I-85. These major routes are the modern rivers which connect commerce and residents of Petersburg with the entire East Coast. Within the region, I-95 is used as a major artery to connect Petersburg to Colonial Heights, and Southpark Mall specifically. I-95 is also used as a connector between the Southside of Petersburg and Downtown. US 460 runs through the City and joins with I-85 to bypass the City Center. US 460 is a regional trucking route which connects Hampton Roads to South and Southwest Virginia. Interstate interchanges are both a challenge and an opportunity.

Access to Interstate 95 has made the vacant tracts of land along South Crater Road and Wagner Road attractive for new development. However, Interstate access is not the first form of transportation to change Petersburg's land use, economy, or landscape. Shipping on the Appomattox River and rail lines crossing the city have played important roles in the development of Downtown and industrial parks over the course of Petersburg's long history.

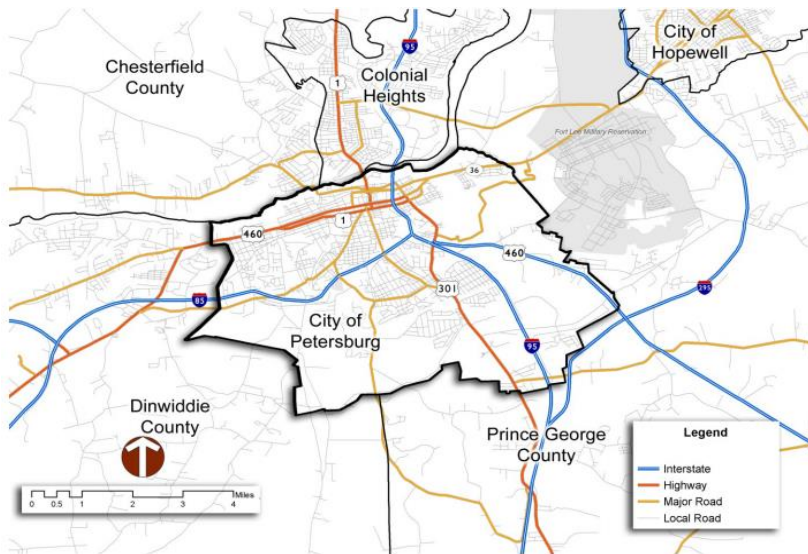
**Highways:** Interstate Highways function as a mover of non-local goods, people, and services, serving regional needs and avoiding any land uses which generate unnecessary local traffic on the Interstate Highways. US 301, Business 460, and Route 1 run through Downtown Petersburg and serve as the major corridors. US 301 runs north-south and is the major commercial corridor on the Southside of the City. Additional development from Medical Park Boulevard and the southern part of the city will potentially add to traffic volume along this road. Any future development in this corridor must incorporate the appropriate transportation measures to prevent congestion. Business 460 is the major west-bound corridor that passes through the City Center.

**Major Roads:** Downtown remains the central point on which most of the City's major roads meet. University Boulevard (formerly Fleet Street) and Grove Avenue connect Downtown with Chesterfield County and Virginia State University. East Washington Street connects downtown with Fort Lee and Hopewell. Halifax Street and Boydton Plank Road run from Downtown to the neighborhoods and industry in southwest Petersburg and Dinwiddie County. Sycamore Street connects the Downtown and Halifax neighborhoods to the Walnut Hill neighborhood and the South Crater Road commercial corridor.

Connecting the Highways (Route 1, Business 460) that run through Downtown are the major roads of West Old Street, Bollingbrook, East Bank Street, North Market Street, 2nd and 4th Street.

Baylor's Lane, Defense Road and West South Boulevard create a mini-beltway that connects Halifax Road to Sycamore Street and Crater Road. Running South-bound out of the City is Johnson Road.

In the southern end of the City Rives Road has developed as a major road which crosses South Crater Road, I-95 and US 460. Likewise, Wagner Road connects these major corridors.





## Truck Freight

Because Petersburg sits at a crossroads of regional and national highways, and major ports in Richmond and Norfolk, freight traffic is a major component of the transportation system. Freight trucking, warehouse distribution centers, and related industries greatly benefit the City by being a large source of employment. Truck Transportation in Petersburg accounted for 131 jobs in the 3rd Quarter, 2012 according to the Virginia Workforce Connection.

## Rail

Petersburg is serviced by a local Amtrak station in Ettrick, located immediately north of City limits in Chesterfield. Proposed shuttle connections from the station in Ettrick would connect the Multi-Modal Transit Center in Downtown Petersburg with local bus services and taxis. The Amtrak station is served by the Carolinian and Palmetto lines. The Carolinian line runs between New York and Charlotte, NC with stops at all major cities in between. The Palmetto line runs from New York to Charleston, SC and then continues as the Silver Meteor line which runs to Miami, FL. A trip from Petersburg to Charlotte, NC takes 6 hours and 30 minutes; from Petersburg to Washington a trip takes between 3 and 4 hours. Freight lines in Petersburg run along the Norfolk Southern and CSX rail lines.

Development of the Collier Yard rail site would benefit long-term Tri-Cities commuting patterns and provides a Multi-Modal Rail Station location for future high-speed rail. Collier is currently a relatively undeveloped 140 acre site South of I-85. (The surrounding land use should allow zoning of the area surrounding the Collier site for transit-oriented development, higher density residential development, light industrial employment centers, or other uses that provide greater densities of residential and/or employment development. The site has good highway access to nearby I-85 and the multimodal station may be developed for “park and ride” rail users with secure parking and connections to the local transit system.) *Source: Pre-NEPA Evaluation Tri Cities Area Multimodal Station Study prepared for the Virginia Department of Rail & Public Transportation August 22, 2012 and Tri Cities Station Study PPT*

## Air

Petersburg is served by two airports. The Dinwiddie County Airport is a regional airport located at the convergence of I-85 and 460 in Dinwiddie County approximately 3 miles west of Petersburg. The Richmond International Airport is located 30 miles to the north via I-295 or I-95 through the use of the Pocahontas Parkway.

## Pedestrian Bicycle Circulation/Trails

There are currently no bike lanes in the City of Petersburg. The Tri-Cities Area Recommended Bikeways Improvement Map indicates a proposed on-street bike lane along Wythe and Washington Streets and along South Sycamore Street and South Crater Road. Along these busier routes, dedicated bike lanes would create the appropriate space for safe bicycle travel along Petersburg’s central arterial routes.

The highest concentration of walkers in Petersburg is located in the neighborhoods that lie within an approximately 1.5 mile wide radius of Downtown. Despite a high concentration of Petersburg’s workforce along the southern end of the City, the neighborhoods in this corridor have a relatively low percentage of pedestrians.

## Park and Ride Lots

The Virginia Department of Transportation is currently studying locations for Park and Ride Lots. The following are being considered:

- Union and Washington Street near Petersburg Transit Station
- I-85 and Boydton Plank Road
- I-95 and Courtland Road near Parkdale Road
- I-295 and County Drive
- I-95 and Winfield Road near Crater Road
- Near S. Sycamore Street and E. Wythe Street



Mode of Transportation Used to Get to Work	
Walking	2%
Public Transportation	3%
Car Pool	19%
Drive alone	74%
Other	2%

Source: Analysis of Residential Market Potential, Zimmerman/Volk Associates, Inc.  
February 2008

## The Six-Year Improvement Plan

The Virginia Department of Transportation reviews annually six-year plans for localities. The Six-Year Plan prioritizes projects for funding and implementation. Over the next six years, the City will be pursuing various transportation projects that will alleviate congestion in various sections of the City and open the door for further growth. The following revisions to the Six-Year Plan for the Richmond District (which include Petersburg), for the 2014 – 2019 time period includes:

- (UPC 15832) Rives Road Widening to four lanes between South Crater Road and the I-95 interchange. Estimated cost of \$8,394,000.
- (UPC 103803) Route 460 PPTA Construction from the Intersection of I-295 in Prince George County to the intersection of Route 58 in the City of Suffolk. Estimated cost of \$1,396,045,000.
- (UPC 103754) Route 460 PPTA DEBT Service from the intersection with Route 58 in the City of Suffolk to the Intersection with I-295 in Prince George County. Estimated cost of \$860,910,000.
- (UPC 100432) Project Oversight (RT 460 Corridor Improvement Project) Service from the intersection with Route 58 in the City of Suffolk to the Intersection with I-295 in Prince George County. Estimated cost of \$89,127,000.
- (UPC 56638) Location and Environmental Study (PE Only) from the intersection with Route 58 in the City of Suffolk to

the Intersection with I-295 in Prince George County. Estimated cost of \$31,301,000.

- (UPC 104956) I95/I85 SB Interchange Safety Improvements (PE Only) from I85 to Wagner Road Estimated cost of \$200,000.
- Tri-Cities Multi-Modal Station Study is funded to start the Environmental Assessment as part of the NEPA requirements in the amount of \$250,000. The project is based on the DRPT Tri-Cities Multi-Modal Station Study (dated August 22, 2012 recommending that the NEPA be completed for the two potential station location, Ettrick located in Chesterfield County and the Collier Yard site located in Petersburg. The NEPA study will determine a site for a regional Multi-Modal Station.
- (UPC 101030) Puddledock Road & Route 36 Intersection Improvements. Estimated cost of \$1,226,000.
- (UPC 101289) Puddledock Road & Industrial Drive Intersection Improvements. Estimated cost of \$522,000.
- (UPC 78946) Construction of Hospital Road 4 Lanes. Estimated cost of \$6,589,000.
- (UPC 104868) Signal Upgrades – Various Locations, City of Petersburg. Estimated cost of \$1,600,000.
- (UPC 104869) Various Locations, City of Petersburg. Estimated cost of \$450,000.
- (UPC 101039) South Crater Road Area Signal Coordination. Estimated Cost of \$660,000.

The following projects are included in the SYIP 2014-2019 plan for CMAQ projects:

- Traffic Signal Timing City-Wide - \$180,000 FY18
- Extend Left Turn Lane on S. Crater Road and Morton - \$550,000 FY18
- Extend Turn Lanes S. Crater and Medical Park Blvd - \$335,000 FY18

The following projects are to be considered as part of the SYIP CMAQ process:

- S. Crater Road at S. Sycamore Street



- S. Crater Road at Wal-Mart entrance - LTL
- S. Crater Road at Flank Road
- S. Crater Road at Graham Road – RTL
- Johnson Road at South Boulevard
- Petersburg crash truck
- 6 PAT buses
- N. Normandy Drive at Wagner Road
- S. Crater Road at Wagner Road – RTL
- Petersburg Park & Ride lot

Multi-Modal Transit Center



## 2035 Tri-Cities Transportation Plan

The Tri-Cities Area 2035 Transportation Plan is an overarching document prepared by the Crater Planning District Commission in June, 2012. The Plan looked at a variety of factors influencing future transportation planning and highlighted the need for comprehensive planning to combine land-use and transportation

planning across the region. The following are some key excerpts from the Plan:

- The Tri-Cities area is an ozone non-attainment zone, so traffic delays and congestion need to be considered in light of emissions. Build-up along commercial corridors and the land-use designations that promote it should be reconsidered. (Effective June 18, 2007, the U.S. EPA approved a request by the Commonwealth that the Richmond area be reclassified to ozone maintenance area status.)
- The top three rated interstate projects recommended in the 2035 Plan are located in Petersburg. These projects include two series of recommended I-85/I-95/Rt.460 interchange projects and the reconstruction of the I-95 interchange at Rives Road.
- The Route 460 Public Private Partnership Act (PPTA) is a large project located within a major State transportation corridor linking South Hampton Roads and the Tri-Cities. The scope of the Route 460 PPTA involves the construction of a 55 mile long, limited access highway between Route 58 in Suffolk, Virginia and I-295 in Prince George, Virginia. This 4-lane divided highway is proposed to be constructed in a new location generally parallel to and approximately 1 mile south of the existing Route 460. Approximately 6.6 miles of the Route 460 PPTA project is proposed to be located within the Tri-Cities.

## US Route-460, Interstate-85, and Interstate-95 Interchange Improvements.

This interchange serves as the nexus for three interstate-quality facilities. The Commonwealth's proposed investment in the Route 460 corridor to improve access to the Port and enhance economic development will add additional traffic pressure to this interchange. The Tri-Cities MPO has identified approximately \$80 million in

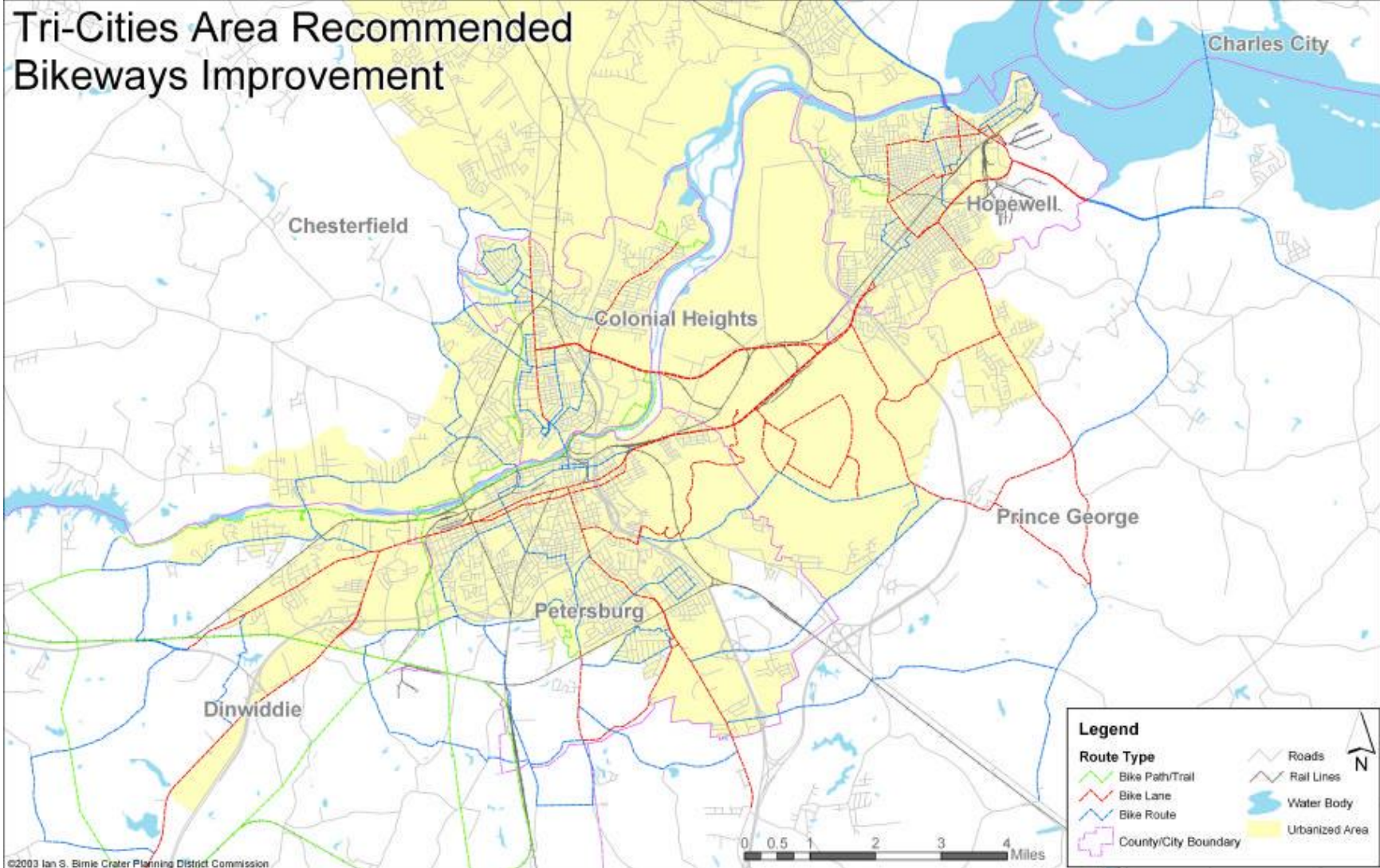


improvements to maintain the flow of people and goods at this location by the year 2035. Funding for the interstate improvement at I-95/I-85 and US 460 may be sought under the HB2 Commonwealth of Virginia project prioritization program. Whereby projects of statewide significance are selected for funding based on the cost-effectiveness of the projects to reduce congestion, improve land use efficiency among the Region, improve safety and promote economic development along the corridors adjacent to the project site.

The improvements to the I-85, I-95 and 460 corridors will allow greater access to trucking and vehicular traffic. In addition, it will support the economic strategy of the City to attract additional retail and restaurant businesses along this end of Crater Road. The improvements would make it easy for trucks and vehicular traffic easy access on and off the interstate to the commercial and residential areas along this Southern end of the City. More importantly for the City of Petersburg it could provide an opportunity for Petersburg Area Transit to provide additional service routes to proposed park and ride lot identified in the SYIP.







**Recommendation:** With the provision of a bike network map in the 2026 Transportation Plan, Petersburg has an opportunity to make a plan a reality by implementing the proposed bike lane improvements. The creation of new bike lanes should also be accompanied by a user-friendly City map that highlights bike lanes, bike routes, and other roads suitable for bike travel. A widely circulated bike map will encourage prospective cyclists and newcomers to Petersburg to utilize the new system and offer another mode of transportation to its citizens and tourist. In addition, the City should work toward connecting bike paths to all City parks that will allow cyclist to travel between parks with limited interaction with street traffic.



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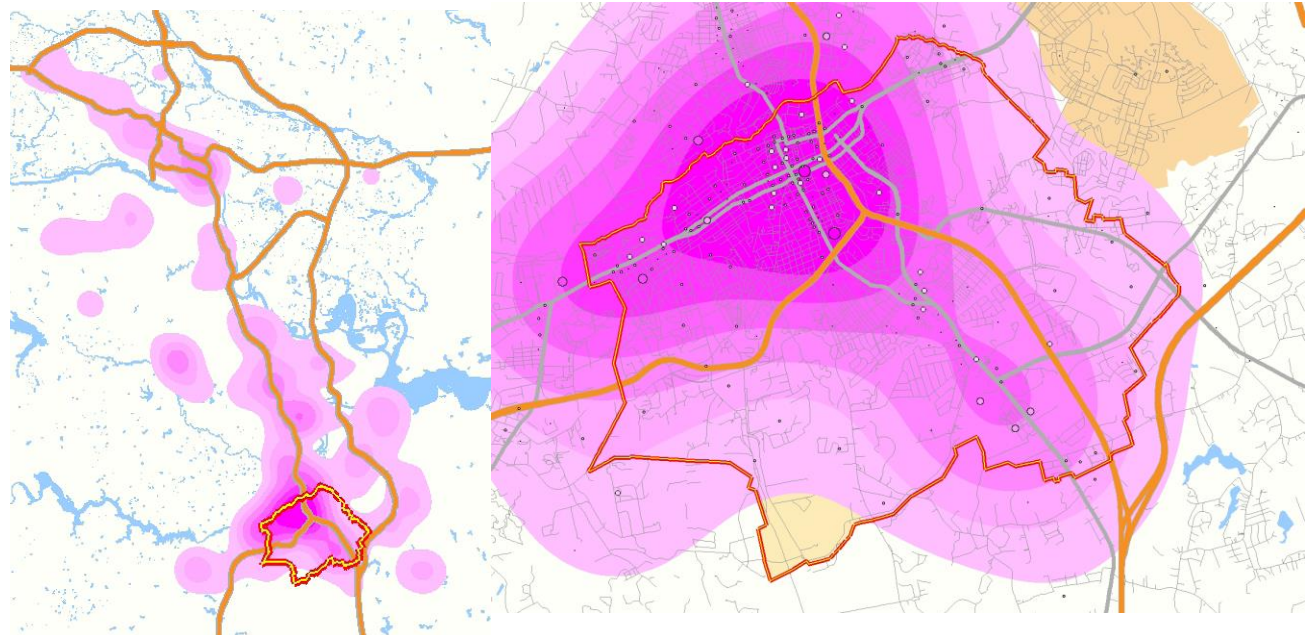


## Commuting Patterns

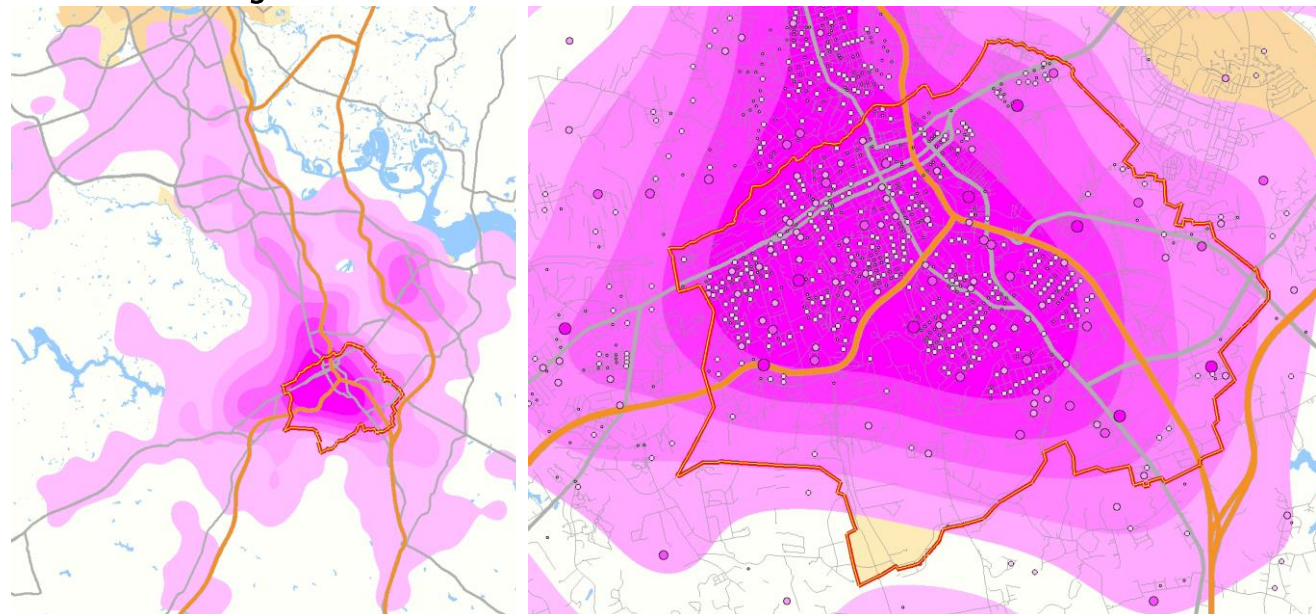
For Petersburg residents, the major commuting thoroughfares out of the city run north along I-95, east to Hopewell along Rt. 36 and I-295 and west on I-85. The strongest core of employment remains in the northern section of the City and runs along the Washington/Wythe corridor, Downtown/Old Towne and the Sycamore Street corridor. Future shifts in employment concentration have occurred since Southside Regional Medical Center has moved to South Crater Road.

Commuting in and out of Petersburg is comparatively smooth with the interstates that run through the City. To take advantage of the interstate system, the City should work to expand its bus service to employment centers outside of city limits.

## Where Petersburg Residents Work



## Where Petersburg Workers Reside



- 1 - 5 Workers
  - 6 - 46 Workers
  - 47 - 157 Workers
  - 158 - 373 Workers
  - 374 - 729 Workers
  - 730 - 1260 Workers
- 
- 0.01 - 7.83 Workers/Sq. Mi.
  - 7.84 - 19.58 Workers/Sq. Mi.
  - 19.59 - 43.08 Workers/Sq. Mi.
  - 43.09 - 74.41 Workers/Sq. Mi.
  - 74.42 - 117.49 Workers/Sq. Mi.
  - 117.50 - 234.99 Workers/Sq. Mi.



## High Speed Rail Service

In 2010, Amtrak announced a 30 year project to introduce high speed service along the East coast rail corridor. The plan examines several locations in various communities; the City of Petersburg is one of the sites being considered. Amtrak completed the Tier 1 Environmental Impact Study and started looking to complete the Tier II EIS in 2011. Passenger service, pending federal funding, is scheduled to begin by 2022.

The City of Petersburg has positioned itself by performing a feasibility study of the area known as Collier Yard. This 86 acre site is located off of I-85 in a rural and industrial environment with single-family residential communities adjacent to the site as well as the Battlefield. It is believed that the successful location will be development ready, not requiring any special approvals or rezoning. The site will be ready to go and support rail oriented development. In order for that to be the case for this site, the City will adopt the policies that will govern Transit Oriented Development, combined land use and transportation, promote the current transit service and facilities, and to encourage transit oriented development at the preferred location.

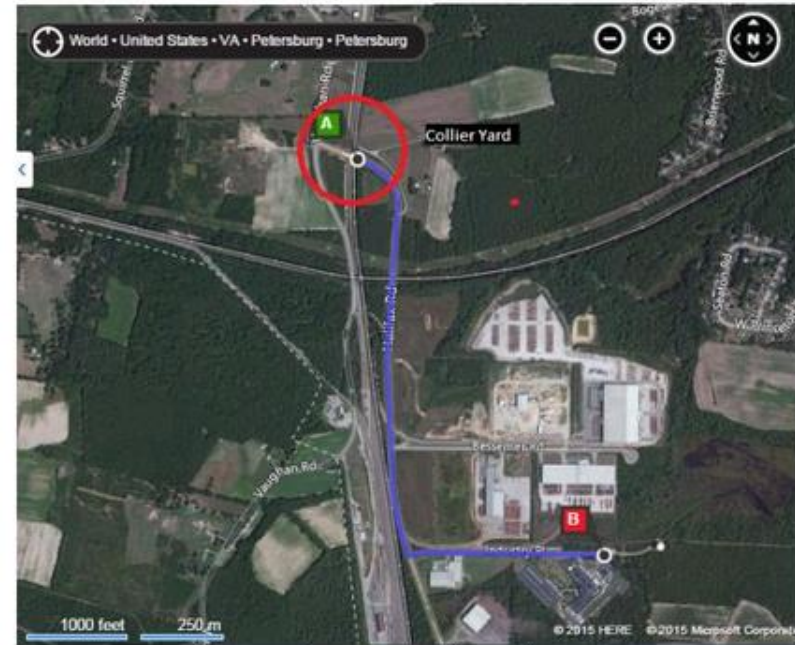
The City is in a good position because all the acreage at Colliers Yard is owned by the City of Petersburg.



Amtrak's Acela current operates high speed service from D.C to NYC



Rendering of proposed Rail Station Town Center

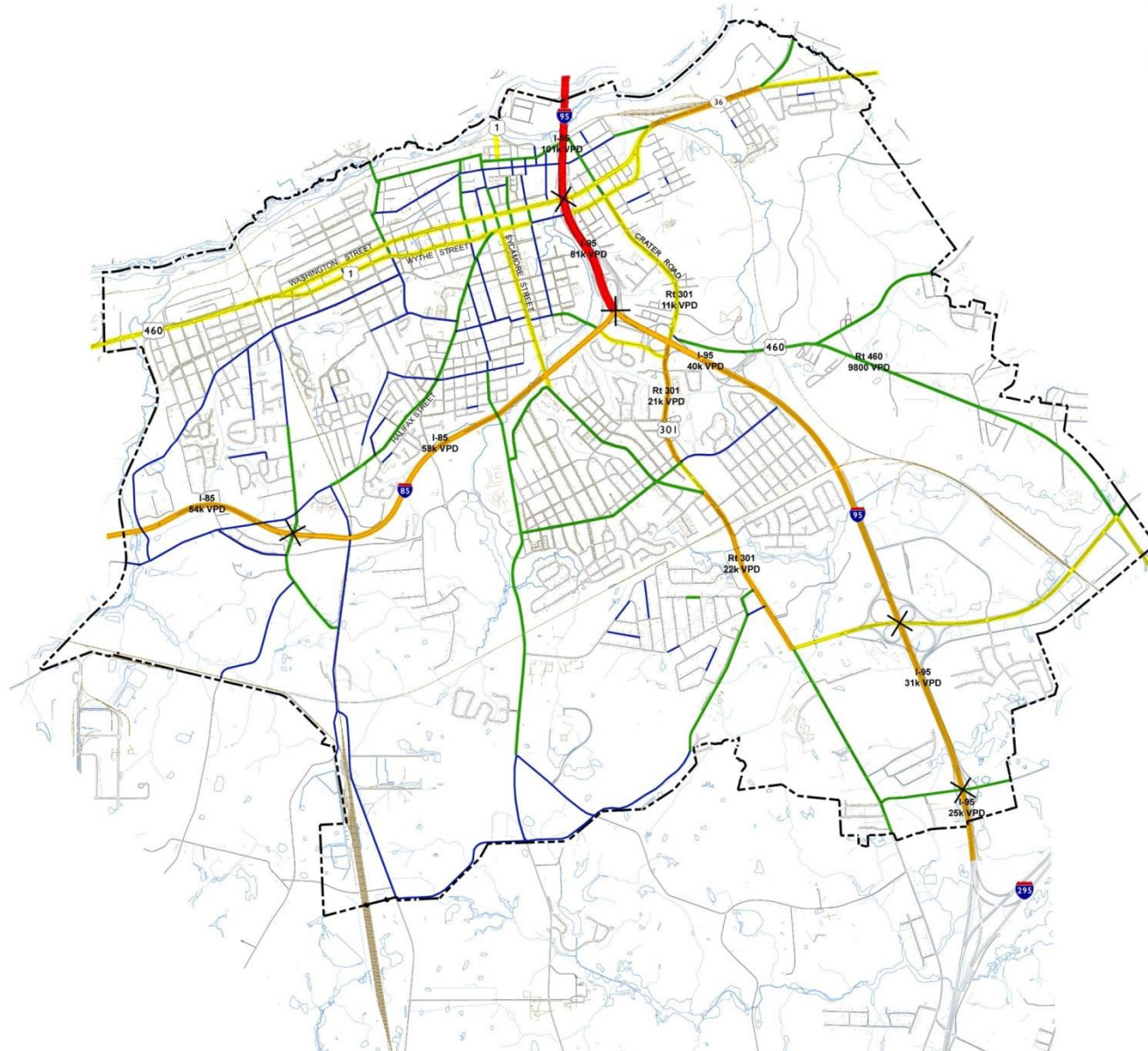


Location Map of Colliers Yard and Industrial Park



## TRAFFIC VOLUMES

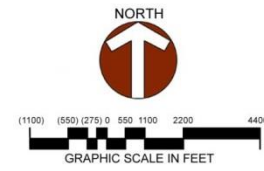
COMPREHENSIVE PLAN  
CITY OF PETERSBURG, VIRGINIA



**ANNUAL AVERAGE DAILY TRAFFIC (AADT)**

	79001 -	}	VEHICLES
	19001 - 79000		
	9001 - 19000		
	3001 - 9000		
	3000 - 0		

SOURCE: 2007 VDOT TRAFFIC VOLUMES



JUNE 24, 2008  
K.W. Poore and Associates, Inc.  
Community Development Consultants



## Parks and Recreation

For any community the availability of open park space, as well as enclosed meeting and activity spaces is essential. Petersburg has within its boundaries a diversity of public park spaces and recreation/meeting centers available. The land comprising the Petersburg National Battlefield Park and its related sites constitutes a large portion of open space within the City, which are federally owned and maintained. These areas are covered within the Cultural Resources section of the Comprehensive Plan. This section will focus on facilities owned and operated by the City of Petersburg.

Of the City's overall land area nearly 5% is dedicated to parks and recreational use. This includes both open park land and community centers. Of land dedicated to parks and recreational uses 95% is open space with a variety of uses, including baseball, basketball, tennis and soccer, a public golf course, tot-lots and space for walking and relaxation.

Parks and recreation associations recommend anywhere from seven acres to 10 acres of park land be provided for every 1000 residents. Using the highest recommendation of 10 acres per 1000 residents, and again, only considering City operated facilities, Petersburg provides just over 22 acres of public park space per 1000 residents.

The residents of Petersburg have available to them 16 parks and facilities. These include large urban parks, providing for league and organized athletic events to nature and walking trails, smaller neighborhood parks, providing for the informal recreational needs of the residents as well as space to relax and unwind, and community centers providing meeting spaces for community gatherings and city sponsored programs focused on the educational



and recreational needs of the City's residents. These facilities are as follows:

### **A.P. Hill Community Center**

The A.P. Hill Community Center is one of three community centers within Petersburg. Centrally located within the City, the facility offers a range of recreation and community based activities. On the premises are a basketball court, a baseball field, a picnic shelter, a tot-lot, and an indoor community center which provides recreational programs for the community.

### **Appomattox River Park**

Appomattox River Park is actually located just outside the borders of the City of Petersburg in Dinwiddie County along the south bank of the Appomattox River. The property was donated by Dominion Virginia Power and is now controlled by the City of Petersburg. Its 137 acres provide mostly undeveloped open wooded space containing hiking and biking trails, and access to the river for boating and fishing. The site also includes a half basketball court and a pavilion for group gatherings.



## Berkeley Manor

Berkeley Manor is a subdivision which contains a small park that includes a baseball field and two basketball courts. Additionally, there is a picnic/event shelter on the site. The location of the subdivision, in the south-east corner of the City, is not only detached from most of the City by distance, but also physically. The barriers of Interstate 95 and Wagner Road make accessibility to the park convenient only to those who live in the subdivision.

## Dogwood Trace Golf Course

Dogwood Trace Golf Course is an 18 hole, par 72 golf course. The course was originally leased and operated by a private company, but was purchased by the City after it was significantly damaged during Hurricane Isabel in 2003. The City completed planning for the renovation of the course and began its renovation in April 2008. The acclaimed golf course architect Thomas E. Clark was hired to design the renovated course. A clubhouse with a pro shop and small restaurant is currently in the planning process.

Players will find extensive bunkering lakes and ponds that come in to play on several holes and well-manicured and challenging greens. The state of the art practice facility includes a putting green, bunker chipping green and an expansive grass driving range. Our staff of PGA Professionals is available to assist citizens and visitors with instructional programs and professional fitting services.

In 2010, Dogwood Trace introduced its “Golf for Life Program” to the youth of Petersburg. This program teaches children the game of golf and a series of corresponding “Life Skills” in an effort to provide a more solid foundation for the challenges that life can bring.



Dogwood Trace serves host to several regional golf events throughout the year. These include both corporate and charitable golf outings, college tournaments and regional junior championships. It also serves as the home course for the Petersburg High School and Virginia State University golf teams.

The City of Petersburg’s Dogwood Trace Golf Course opened for play in the spring of 2007. In that time it has quickly gained recognition as one of the finest golf courses in central Virginia. It was ranked in the Top 100 courses to play in the Mid Atlantic by the Washington Golf Monthly and was dubbed “Petersburg’s Hidden Gem” by the Virginia Gold Report.

The City is boasting on the newly constructed 3,330 sq. ft. clubhouse featuring a main dining lounge and bar, a private conference room, a full-service kitchen, a pro-shop and an outdoor dining patio. This latest city owned facility will open September, 2015.

## Farmer Street Park

The Farmer Street Pool is a community operated pool open between Memorial Day and Labor Day. It offers open swimming to the public during weekdays and weekends and has a set aside time on Saturday for a water aerobics class for the elderly. In addition to the pool, the facility also offers two full length basketball courts, three tennis courts, a tot-lot, restroom facilities and a picnic/activity shelter.

## Historic Cameron Field

Cameron Field provides a football field and track. The City is planning to provide additional lighting structures, so that the park can be used once again for night games and events.



## **Harding Street Community Center**

Harding Street Community Center is located adjacent to the Poplar Lawn neighborhood. This community facility provides a basketball court and a picnic/activity area outside, as well as an indoor hydroponics and aquaponics laboratory and education center operated by Virginia State University.

## **Jefferson/Clinton Street Park**

Located adjacent to the Poplar Lawn Park neighborhood the Jefferson/Clinton Street Park provides a youth oriented activity area. Included on the site are a tot-lot for the very young, a playground for other kids, and a picnic shelter large enough for a group function.

## **Lee Memorial Park**

Lee Memorial Park is a 330 acre park with a rich history, but had been neglected for years until about ten (10) years ago when a master plan was adopted by City Council to preserve the park by incorporating public improvements and interpretive and educational programs.

Among the 330 acres, 18 acres are developed with the remaining acres offering a more natural undeveloped park. The park offers several amenities, including Wilcox Lake, picnic shelters, walking trails, Cooper Memorial Baseball Field, a bath house, and wildflower sanctuaries. Under the leadership of WWC, trails have recently been updated; an outlook with interpretive signage has been added, infrastructure upgrades facilitated the addition of restrooms. The stairs have been repaired and several annual events occur at the park. Proposed under the master plan are extended walking trails, gardens, environmental education center, and various public improvements that will enhance the park experience.

Wilcox Watershed Conservancy (WWC) is a strong partner with the City on these projects.



## **Low Street Park**

Low Street Park is a neighborhood park that has been upgraded with play equipment and plans underway for a picnic shelter at this location. Located on Low Street near the intersection with Cross Street, the park contains a comfort station and the remnants of a basketball field. The City has currently completed the improvements so the park can be a neighborhood park.

## **McKenzie Street Park**

McKenzie Street Park is a six and a half acre park, located within the Battersea neighborhood on the northern edge of the City. The park contains a lit baseball field and restroom facilities.



## **National Guard Armory**

The National Guard Armory is located adjacent to Lee Memorial Park, and serves as a community center for the City in addition to its role as a station for the areas National Guard. The building contains a gymnasium and classroom space, and the City sponsors educational recreation at this location.

## **Oakhurst Playground/Park**

Oakhurst Park is located at the end of Blackwater Drive, tucked away in the Oakhurst subdivision. The park is a great amenity for the neighborhood providing a baseball field, a basketball court, a tot-lot, and a restroom and concession facilities.

## **Petersburg Sports Complex**

The Petersburg Sports Complex contains over 100 acres dedicated to baseball and softball. On the site are four (4) softball fields and one (1) baseball field with each field having its own press box and offices, P/A system and electronic score board. Integrated into the complex are public restrooms and a concessions building.

The Petersburg Sports Complex is home to the Petersburg Generals, a summer league made up of the best college baseball players across the nation. Additionally the Sports Complex hosts several United States Specialty Sports Association (U.S.S.A) events including national and world tournaments and World Series events.

The Petersburg Sports Complex is located adjacent to Petersburg High School, which offers a football field, track and gymnasium, and adjacent to the Dogwood Trace Golf Course, expanding the sporting opportunities available to the complex.

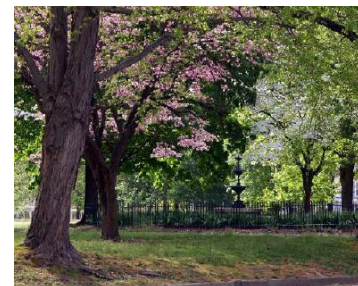
## **West End Park Fairgrounds**

West End Park Fairgrounds consists of 22 acres of mostly open space for public events. The site also provides a basketball court, a football field and walking trails for public enjoyment.

## **Poplar Lawn (Central Park)**

Poplar Lawn Park, formally known as Central Park, is a very pleasant park. Located within the Poplar Lawn neighborhood, a nationally registered historic neighborhood, the park has been witness to much history. In 1812 The Petersburg Volunteers camped on the site before leaving for the Canadian border, and in 1842 General Lafayette was greeted with much fanfare. At the beginning of the Civil War volunteers enlisted for service in the Confederate Army, and then at the end of the war a hospital were erected on the site during the Siege of Petersburg.

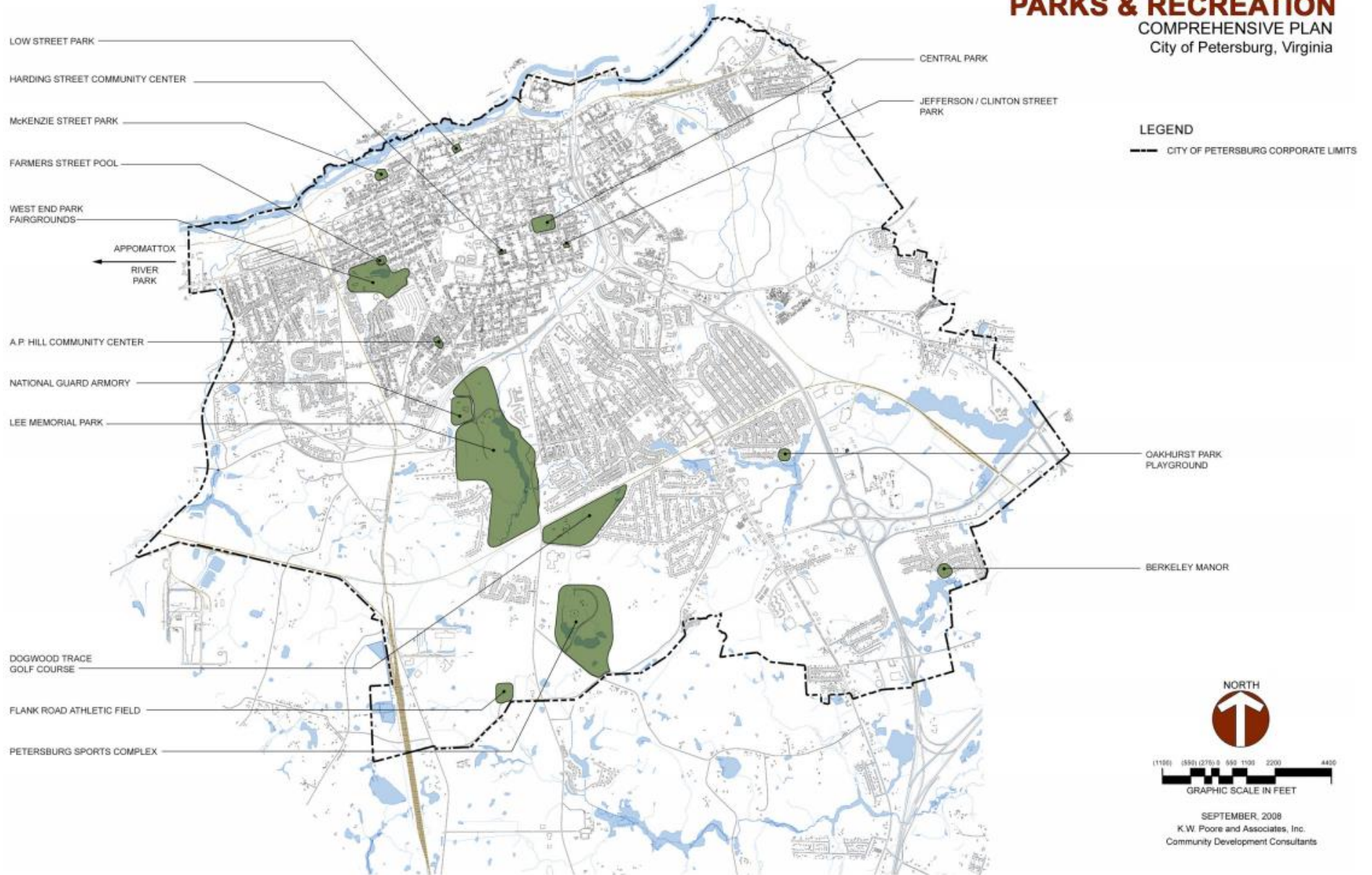
The park currently contains about four (4) square blocks of land which is landscaped and contains a radial path network. The park provides a comfortable gathering space central to the park consisting of ornate concrete tables and benches set around a raised landscape feature. Central Park is a planned park that serves as a venue for weddings, and other recreational events and activities.



Poplar Lawn Park



## PARKS & RECREATION COMPREHENSIVE PLAN City of Petersburg, Virginia



SEPTEMBER, 2008  
 K.W. Poore and Associates, Inc.  
 Community Development Consultants





## Education

A healthy city has a good school system where children are educated to be competitive and well versed in science, reading and mathematics, professional fields where higher wages are earned. This can be a great tool for attracting and maintaining families in the community. Often times the school system is the reason people locate in a particular location and the schools are what make it a desirable place to live. Post-secondary education opportunities are equally important to the economy for training an educated and competitive workforce. The long term benefits of a good school system and well educated work force make education an investment all localities must afford. However, the City must continue to support and collaborate with the school system to maintain families and school age children in our communities.

The reduction in school aged children does not necessitate a definite cause for alarm as the quantity of children in the system rarely correlates to educational or neighborhood quality. Reduced family size as well as a diverse population can be framed as additional resources and smaller class sizes.

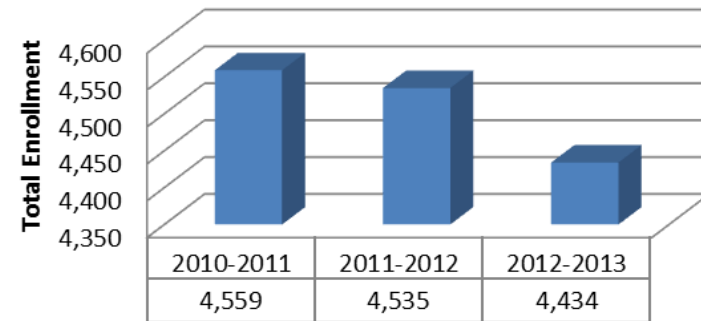
The Petersburg City Public School System is committed to providing a quality education to all students. The division will provide experiences for students to become life- long learners and contributing members in a global society. Petersburg City School Board hired Dr. Joseph C. Melvin to begin as the new superintendent of Petersburg City Schools on January 2, 2013.

### Enrollment

The total enrollment of Petersburg City Public Schools (PCPS) for the 2012-13 school year is 4,434 students which is indicative of a decline from 2011-12 of 101 students (4,535).

The Petersburg City Public School System is comprised of seven (7) comprehensive schools, one (1) alternative school and one (1) early childhood center

### Petersburg School Enrollment Levels 2011-2013



Source: VDOE Report Cards 2013

### Elementary Education

There are four (4) comprehensive K-5 elementary schools consisting of A.P. Hill Elementary, J.E.B. Stuart Elementary, Robert E. Lee Elementary School, and Walnut Hill Elementary School. The division also provides services for three and four year old students at the Westview Early Childhood Education Center. Schools utilize a variety of educational practices and strategies to put forth instruction to develop the 21st Century learner. The Response to Intervention (RTI) model allows for the individualization of instruction for the students of Petersburg. Year round schooling has been implemented in one (1) of the four elementary schools to guarantee success of these students.

### Secondary Education

The Petersburg City Public Schools (PCPS) system has both successes and challenges on the horizon. As the graph on the top of



the page indicates, the declining population is reflected in the declining enrollment levels in the public school system. Declining enrollment allows reductions in staffing which opens up funds for other programs, and it enables the school system to maintain low student teacher ratios. But the real problem has to do with limited financial resources and the educational results associated with declining population.

There are three (3) comprehensive secondary schools which consist of Peabody Middle School, Vernon Johns Junior High School, and Petersburg High School. The division also affords non-traditional learning opportunities to students at the secondary level at Blandford Academy. One of the middle schools is currently operating on a year round basis to guarantee success at this level for our students.

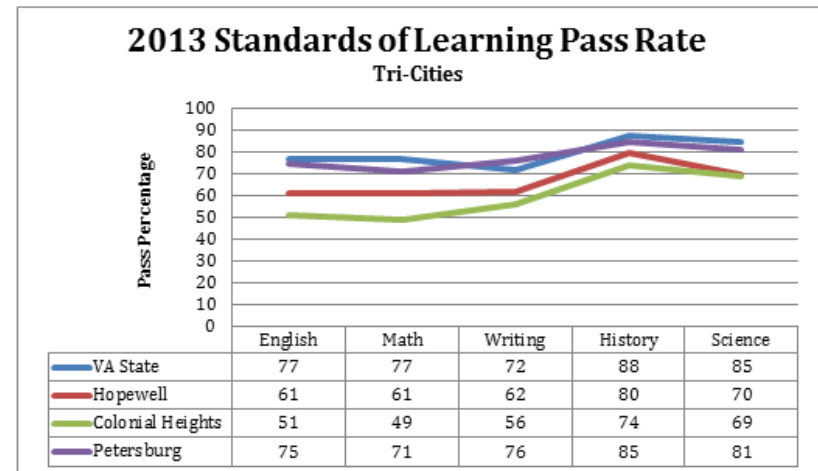
Schools utilize a variety of educational practices and strategies to put forth instruction to develop the 21st Century learner. Opportunities are afforded to our secondary students that include, but are not limited, to the following: Dual Enrollment opportunities with various universities and colleges in the tri-cities area, Middle College High School Program at Richard Bland College that allows students to graduate from high school with an Associate Degree, and a Career and Technical Education (CTE) program that results in the acquisition of industry certification in Business and Information Technology, Family and Consumer Sciences, Health and Medical Sciences, Marketing, Technology Education, and Trade and Industrial Education.

Students at the secondary level also have the opportunity to apply for acceptance into the Regional Governor’s Schools Programs for grade 9-12. These programs include Appomattox Regional Governor’s School for the Arts and Maggie L. Walker Governor’s School for Governor’s School for Government & International Studies.

Currently all of Petersburg public schools are accredited with the exception of A.P. Hill Elementary School and Peabody Middle

School. The school has made progress, but the subject of math and science has been not only a challenge for Peabody and A.P. Hill, but throughout the State. The Petersburg Public School system remains committed to helping every student reach their full potential and set a goal to have one-hundred percent accreditation in the near future.

As a city of regional importance, Petersburg is fortunate to be home to the Appomattox River Governor’s School which serves fourteen school districts in Central and Southern Virginia. The school hosts 330 students from grades 9 through 12 and offers them diverse opportunities ranging from acting to literary arts, and computer programming to ballet.



Source: VDOE Report Cards 2013

Petersburg Public Schools held a School Division Efficiency Review in the fall of 2006, where a six-member team of consultants conducted an efficiency study of the school division. The efficiency review produced findings in all eight operational areas which resulted in 98 individual recommendations, 55 of which had a fiscal impact. The following areas were successfully addressed by the school division: Division Organizational Administration, Financial Management, Personnel and Human Resources, Cost of Instructional Services Delivery, Transportation, Technology,



Facilities and Food Services. PCPS was required to implement 50% of the savings within 24 months of the end of the study. By 2009, the division had fully or partially implemented 92% of the recommendations put forth by the six-member team of consultants.

To date, the remaining recommendations are either in process or have been realigned to provide greater results.

## Capital Improvements

There have been additions to A.P. Hill Elementary, J.E.B. Stuart Elementary, and Robert E. Lee Elementary schools within the last four years. Additions to the elementary schools have resulted in increased classroom space for core classes, fine arts, and physical fitness. Construction is currently underway at Walnut Hill Elementary School. Once the addition at Walnut Hill Elementary School is complete, all elementary schools within the division will be equipped with gymnasiums for physical fitness and extracurricular events. During the summer of 2011, a new Operations Center was opened for the School Nutrition, Transportation, and Warehouse Departments. The new center allows for the Department of Operations to operate in one location versus multiple locations through-out the city. The Petersburg Public School teams up with the City of Petersburg and together create the program for capital projects.

## Post-Secondary Education

The City of Petersburg has three institutions of higher learning in its immediate vicinity:

**Virginia State University** is a four-year university with graduate and undergraduate degree offerings including Agriculture, Business, Engineering, Science & Technology, and Liberal Arts.

**Richard Bland College** is a two-year, State supported branch of the College of William and Mary. It offers liberal arts and science

programs for associate's degrees. Students are able to transfer to four year institutions as juniors or go directly into the workforce.

**John Tyler Community College** is a two-year State supported community college with campuses in Richmond and Petersburg, as well as distance learning services. It offers associates degrees and practical skills, so students may go directly into the work force or transfer into a four-year college.



Petersburg High School Graduating Class of 2014





## Cultural Resources

### Petersburg National Battlefield

The Petersburg National Battlefield is not just one location, but a series of sites that spread over 2,659 (battlefield) acres in Petersburg, Hopewell, Dinwiddie County and Prince George County. The National Battlefield has brought over 175,000 visitors to the Petersburg area over the past ten years. Not only does the battlefield attract visitors to the area, but it plays an important role in preserving and presenting one of the most influential events in the history of Petersburg and the entire Civil War, the 10 month Siege of Petersburg by the Union Army in 1864-1865.

The presence of the National Battlefield in Petersburg is one of the City's most renowned and important cultural assets. The City has established a great relationship with the National Park Service and kept abreast of all management plans for future development.

**General Management Plan-** The Petersburg National Battlefield General Management Plan, completed in 2004, was the first time the original 1965 General Management plan was revised. The Plan noted incompatible residential, commercial and industrial land use along park borders and an outdated method of historical interpretation that did not reflect advances in scholarship and changing public values. Four alternatives were proposed for the future of the Battlefield. The final alternative (D) was chosen because it was deemed the best choice for showcasing history through the cultural landscapes and preserving historical sites. The plan includes a larger focus on the role of women and African-Americans in the Civil War and the Siege at Petersburg.



### Plan Specifics

The Management Plan included new programs and facilities at several of the Park's multiple locations, including the home Front unit in Old Towne, Petersburg. The City and the National Park Service is collaborating on the renovation and opening of a Visitor Center at the Southside Freight Depot on River Street. This is especially significant for the City as it brings more Battlefield visitors to the downtown and provides further incentive for the development and preservation of Old Towne as a historical backdrop for the story of the Siege of Petersburg.

In addition, the Management Plan calls for the Battlefield to expand by 7,238 acres. While most of this expansion is occurring in and around the Five Forks site in Dinwiddie County, the Plan does call for expansion at the main Battlefield site and a battlefield site on Flank Road across from Fort Wadsworth in the southwest corner of the City. The site across from Ford Wadsworth is the location of a Civil War battle that has remained virtually untouched.



Currently there are two principal tour routes that run through the City. Along the southern edge is Flank Road, which parallels the line of earthworks that made the Western Front. Running through the middle of the City is a tour route along Defense road, which follows the Defensive line of earthworks. Both roads are protected from encroaching development along certain stretches.

Both the City and the Battlefield are seeking ways to strengthen the ongoing and effective relationship between both parties, The Battlefield has plans on incorporating historic Petersburg into their overall presentation of the events that took place in and around the City during the Civil War. In response, the City is improving gateway corridors between battlefield sites and downtown. Both of these efforts will improve the overall visitor experience of Petersburg and attract more people to the Battlefield and downtown Petersburg.

The City is also a vital member of Petersburg Area Regional Tourism. This non-profit promotes the cultural and hospitality offering in the Petersburg region.

## Recommendations

In conjunction with the Petersburg National Battlefield's effort to improve and expand the visitors experience at the Battlefield, the City is proud of the efforts made to focus on preserving and improving its connections with the Battlefield. This includes addressing issues of blight along the Route 36 corridor and maintaining and protecting tour routes along Defense and Flank Road from blight and incompatible development. It is the goal of the City to protect and preserve the Civil War era fortifications that run along Defense and Flank roads.





## Cultural Affairs, Arts and Tourism



City Council had a vision to create a more significant place for arts and culture in Petersburg. And so the journey began. Through the strategic use of resources and creative ingenuity, the Department of Cultural Affairs was born. Today, it is dedicated to enriching Petersburg’s artistic vitality and cultural vibrancy.

### MUSEUMS

**The Blandford church** is a church building dating from the 18th Century that was converted to a Memorial Chapel and Confederate Shrine to honor the many soldiers who are buried in the surrounding Blandford Cemetery. The museum is noteworthy for its 15 Tiffany stain



glass windows that were funded through donations by former confederate states at the turn of the 20th century.

**The Siege Museum** is dedicated to presenting daily life as it was before, during and after the Civil War. Particular emphasis is placed on the 10- month Siege in Petersburg in 1864-1865.



**The Centre Hill Museum** is an historic Petersburg mansion built in 1836. The home showcases Greek Revival, Colonial Revival and Federal architecture as well as decorative arts from the 18th-20th Centuries.





## PROGRAMS AND SPECIAL EVENTS

The City's cultural efforts have allowed us to forge partnerships with many community groups. The Department of Cultural Affairs, Arts and Tourism has worked with Public Arts Petersburg, Battersea Foundation, Southside Virginia Council for the Arts, The National Park Service, Virginia State University, The Petersburg Area Art League, The Petersburg Ballet, Virginia Tourism Corporation, and Legacy Media Institute.

The Rev. War Reenactment is an annual event that happens at Battersea every spring and draws many history enthusiasts. Several commemorations and events happen throughout the year at the cemetery and historic chapel.





## TOURISM

As of last fall, the department of Cultural Affairs, Arts & Tourism began engaging in tourism as it recently took on the role of recognizing and developing more tourism opportunities for the familiar and unfamiliar traveler. Current trends in sports tourism, agritourist and food tourist are now being more thoroughly explored. Wayfinding systems are being discussed to determine best practices and current trends and there has been a shift to further explore other contemporary and cultural assets within Petersburg that might draw a broader, more diverse audience.







## PERFORMING & CREATIVE ARTS

The City is seeking to develop more creative arts activities within Petersburg. Driving Miss Daisy was performed at the Petersburg High School Theater and the City is expecting to have many more performing and creative arts success.





## FILM

Petersburg's film scene is booming! Whether it's AMC's *TURN*, PBS *Mercy Street*, or Meg Ryan's *ITHACA*, Petersburg is on the grow!

Tim Reid, Ken Roy and Daphne Reid led the International Film Festival to the city's doorstep and it generated much enthusiasm and notoriety from the community and region.

In March of 2015, the City was recognized by the National League of Cities for its efforts in acknowledging creativity and diverse communities through the partnership it had formed with the Legacy Media Institute.





## Certified Historic Structures

The Virginia Department of Historic Resources (VDHR) oversees the register of all historic districts and historic landmarks present on the State and National inventory. The Department receives applicants for the addition of structures, sites or districts to be registered as historic in the eyes of the state and National Registers (which overlap in their classifications) it must be 50 years or older and meet at least one or a combination of the following criteria:

1. Property is associated with events that have made a significant contribution to the broad patterns of our history.
2. Property is associated with lives of person significant in our past.
3. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
4. Property had yielded, or is likely to yield information important in prehistory of history.

Any structure or site that meets some combination of the above criteria and is over 50 years old is eligible for nomination. VDHR administers both State and Federal Registers. Further information about The State and National historic Registers and the programs described below is available on the VDHR website at [www.dhr.virginia.gov](http://www.dhr.virginia.gov).

Petersburg residents have begun to utilize and realize the benefits of Historic Tax Credits, and examples of successful projects are found in the quaint historic areas of Old Town, High Street, Poplar Lawn and other revitalizing areas. This is a tool that is being used more and more in Petersburg, as a great way to revitalize and have an impact on a community.

### Programs

Along with cataloging and management of registered landmarks, the Department of Historic Resources also provides programs intended to facilitate the preservation and protection of Virginia's historic resources.

#### State Historic Preservation Grants

These grants are made available to nonprofit groups (museums, foundations, historical societies) and local governments who have historic structures that are open to the public. Funds can be used to maintain museum collections, subsidize operating costs of make minor renovations and repairs. Grants must be matched by equal investment (whether monetary, or goods and services) from the applicant.

#### Historic Preservation Easement

The historic easement is a perpetual easement, meaning it will still apply to the property even if it is sold. In receiving a historic easement the property owner is allowing certain restrictions to be placed on the property (e.g. one cannot dramatically alter a home so that it no longer reflects its historic character). In return for donating the land as an easement, the property owner may receive tax deductions for the charitable donation. Inheritance and property taxes are lowered by negating the development rights that are usually factored into a properties valuation. The easement does place restrictions on alterations on the home, and basic upkeep and preservation of the property is required. Some alterations are acceptable, like remodeling a kitchen or bathroom, though all alterations are subject to review by the Department of Historic Resources.



This program is best suited for property owners who have a historic property that they have restored and wish to secure its protection (and their investment) from major alteration beyond their own tenure as owners.

### Rehabilitation Tax Credits

State and Federal tax credits are available for those who are seeking to rehabilitate buildings that are considered historically significant and income-producing. Up to 20% (Federal) and 25% (State) of the total rehabilitation expenses can be used as a dollar-for-dollar reduction in income tax liability from Federal and State taxes.

Most rehabilitation costs like structural improvements and architectural restoration are eligible, however landscaping or additions do not qualify. A comprehensive overview of rehabilitation work that is eligible as a “rehabilitation expense” is outlined in the Secretary of the Interior’s Standards for Rehabilitation.

Petersburg residents have begun to utilize and benefits from the Historic Tax Credits, an examples of successful projects are found in the quaint historic areas of Old Town, High Street, Poplar Lawn and other revitalizing areas.

## Local Historic Districts

**Old Towne:** Old Towne encompasses the oldest portions of the city and contain buildings dating back to the late 17th century. The district sits along the Appomattox River with vacant industrial warehouses lining Pike and Old Street. Further from the river, Old Towne has been rejuvenated with commercial and retail uses mixed with restored residences. The district is unique in that it contains historic residential, commercial and industrial buildings and virtually every style of architecture in the US from 1800 to 1910 to present.

**Poplar Lawn:** Centered on a 2 –blocked open green at its center, the poplar lawn historic district is primarily an example of an upper-middle class late- 19th century residential neighborhood south of the City center.

**Folly Castle:** The Folly Castle Historic district is located south of Old Towne and west of Downtown. It is predominantly high density residential from the turn of the 20th century. Most are frame homed with little stylistic detail, though there are some Italianate, Queen Anne and Colonial Revival styles around Washington Street. There is a commercial node that developed on West Washington Street in the 1920s-1930s as well.

**Center Hill:** The Centre Hill historic district is located directly to the east and southeast of Downtown Petersburg. The Center Hill Estate, a historic, early 19th century Federal Style brick dwelling was the initial central structure and focal point of the area until the land was bought and subdivided. Now the Estate is surrounded by examples of early 20th century residential architecture.

**South Market Street:** The South Market Street historic district contains a number of residential structures that were built in the mid to late 19th century. Once the home to Petersburg’s elite, these homes demonstrate ornate, high-style examples of 19th century architecture.



**Courthouse:** The Courthouse historic district encompasses some of the City’s major institutional buildings, the Courthouse, City Hall, Tabb Street Presbyterian church and St. Paul’s Episcopal Church. Surrounding these historic buildings is a traditional 19th century commercial grid with Federal and Italianate commercial rows. Despite numerous commercial renovations the downtown district along Sycamore Street has retained its traditional architectural design.

**Battersea/ West High St.:** The Battersea/ West High St. historic district is a locally defined district that centers on the early 19th century suburban neighborhood of West High St. and the Battersea Mansion, which dates back to the mid-18th century.

## State and National Historic Districts

**Pocahontas Island District:** Listed on the National Register of Historic Places, Pocahontas Island is the historic home of freed slaves in the Anti-Bellum period. The neighborhood contains traditional shotgun shack style homes built for African- American factory workers in the early 19th century and a few notable brick dwellings as well. The tightly packed, mixed – use characters of the neighborhood with industrial uses immediately adjoining.



**Commerce Street Industrial District:** The District is comprised of four early- 19th century brick industrial buildings. The style of architecture and availability of space makes these buildings suitable for rehabilitation as residential lofts.

**Atlantic Coast Line Railroad Commercial and Industrial:** The area began to take on its present industrial character beginning in the mid-to- late nineteenth century with the construction of the Cameron Tobacco Company building at the corner of Brown and Perry Streets and several lumber yards that no longer exist. The location of the Atlantic Coastline Railroad (ACL), which cut through the district en route to its terminal at Washington and Union Streets, not only promoted industrial growth with spurs that provided access to the industrial buildings but created an open swath through the district. The railroad bed of the former Atlantic Coast Line Railroad (originally the Petersburg Railroad) is still visible as it cuts diagonally across the district. Stone and concrete abutments are still visible where a railroad trestle crossed Guarantee Street on the western edge of the district. Spurs from this railroad served all of the industrial buildings in this area.



## Historic Structures & Landmarks

The City of Petersburg has one of the richest collections of historic assets in Virginia. Throughout the city there are reminders of battles fought, industries come and gone, ornate architecture and skilled craftsmanship that is irreplaceable. There are also painful reminders of slavery and injustice, both before and after the Civil War. Nevertheless, Petersburg’s history defines the City that it is today. Through the preservation of its buildings, visitors and residents can be proud of the dramatic and unique role the city has played in American history.

Cultural Tourism, defined as an authentic presentation of place’s people and history, has become a growing segment of the tourism industry. With a range of historic sites, cultural tourism is an area where the city can benefit from the preservation and restoration of its buildings and landmarks.

In order for the City of Petersburg to capitalize on cultural and historical assets, an effort should be made to distinguish, restore and preserve those sites and buildings that contribute to Petersburg’s character. The establishment of historic districts and the addition of the City’s buildings to National and State Historic Registers is one way residents have already undertaken the preservation of the City’s history and created economic opportunity.



**Siege Museum-15 West Bank Street ca. 1841**

The Exchange Building is a two-story, five bays by five bays, Greek Revival style building with a hipped roof.



### **Centre Hill – 1 Centre Hill Court ca. 1820s**

Built in the Greek Revival, Centre Hill was originally situated in the middle of a park. The home was built for the influential Bolling family in Petersburg. The house becomes the headquarters of Union Major General G. L. Hartsuff in 1865 after the siege of Petersburg. Then President Lincoln also visited him at the site in the same year. Centre Hill is open to the public as a museum.



### **Blandford Cemetery -111 Rochelle Lane ca. 1702**

The Blandford Cemetery has over 30,000 gravestones dating from as far back as 1702. The cemetery has a variety of historic funerary styles and materials used across 189 acres.



**Blandford Church -309 South Crater Road ca. 1736**

Blandford Church is an example of 18<sup>th</sup> century Anglican Church architecture. The building was restored at the turn of the 20<sup>th</sup> century and modeled to look like Merchant's Hope Church in Prince George County (c. 1657).



**City Market- 9 East Old Street ca. 1879**

This octagonal building was built in 1879 on land given to the City for a market. This structure is an example of ornate, urban architecture. It has lasted through to the current renaissance of the local farmers market and has begun to serve as a city market location once again. The City Market is also the site of the Petersburg Visitors Center.



**Lee Memorial Park- 1832 Johnson Road ca. 1921**

Lee Memorial Park was commissioned as a 462-acre park with roads, trails, a swimming area, bathhouse, picnic tables and baseball fields. During the Depression a 25 acre wildflower preserve was created under a WPA program focused on employing women of female-headed households. In the 1950s the lake was closed to avoid integration.



**People's Memorial Cemetery-334 South Crater Road ca. 1840**

People's Cemetery is a historic African American burial ground .The Cemetery traces its roots back almost 200 years. Named to the National Register of Historic Places in 2008, and named a stop on the Network to Freedom, in recognition of its connection to the Underground Railroad, People's Cemetery is the final resting place of abolitionists, Civil War soldiers, slaves, escaped slaves and free men of color.



### **Jarratt House-808-810 Logan Street ca. 1820**

This is the oldest standing structure on Pocahontas Island and also the only brick residence still standing. Residents say this was once a hospital and a school in the 19<sup>th</sup> century.

## Environmental Factors

A healthy environment impacts the health of the citizens and provides recreational opportunities in parks and along the Appomattox River. Opportunities for redevelopment along the Appomattox River and the harbor will require that Petersburg mitigate the environmental neglect which has caused pollution problems in the past. It is therefore important to understand how protecting the environment has implication for the health of citizens and economic development of the City.

Protecting Petersburg's environment affects the quality of life of residents, attracts new investment, and can encourage redevelopment. Environmental stewardship is also important for the region and the localities that rely on environmental factors which cross Petersburg's City limits, but reach beyond its political borders. Just as the water quality in Lake Chesdin affects the drinking water in Petersburg, so does the water quality of the Appomattox River affect the localities downstream along the James River and eventually the industries and residents of the Chesapeake Bay. Water quality is an important environmental factor which is a

challenge for Petersburg and under regulation by federal and state agencies.

### **Chesapeake Bay Local Assistance Program**

In the 1970s the Chesapeake Bay reached a critical state of pollution, caused largely by runoff from industrialized areas that lie in its watershed. Much has been done in an attempt to correct this trend, including the passing of legislation intended to minimize the negative impact local communities have on the Bay.



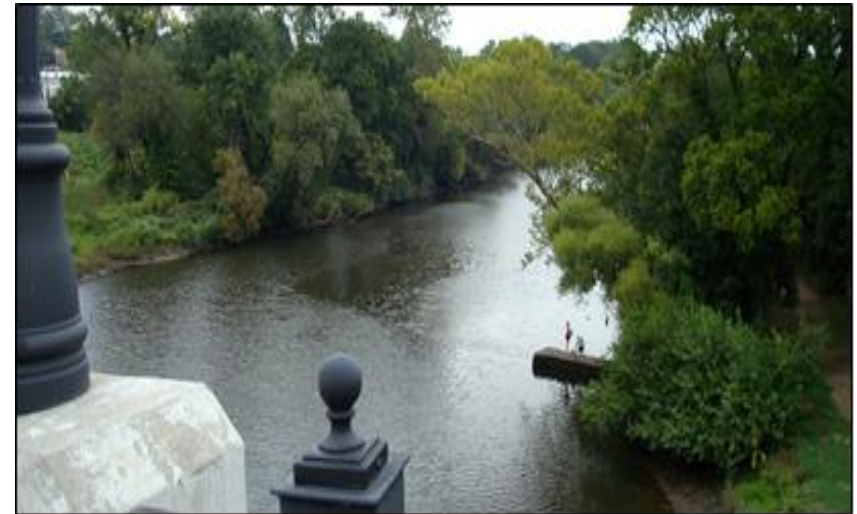




The Chesapeake Bay local Assistance (CLBA) program seeks to establish cooperative programs that allow local governments to establish ordinances and conservation planning that follows basic criteria established through the Chesapeake Bay Preservation Act but can be tailored to suit the specific locality. Petersburg is among the localities which discharge water to Chesapeake Bay and is an active participant in the CBLA program. To date the City has met all requirements under Phases I and II of the program. Now in its third phase, the Chesapeake Bay Preservation Act requires the City of Petersburg review land development ordinances and to ensure that “1) land disturbance is minimized, 2) indigenous vegetation is preserved and, 3) impervious cover is minimized.”

The City will review ordinances for consistency with phase III especially those pertaining to stormwater management and erosion control. Steps to improve stormwater management and erosion control include:

- Remove streams from underground pipes wherever possible in order to increase aquatic habitat, groundwater infiltration and flow rates, reduce water stagnation and improve environmental aesthetics.
- Pronounce a moratorium on underground piping of streams.
- Restore degraded stream buffers by utilizing neighborhood organizations in planting programs, removal of pollution sources and invasive plants.
- Utilize Water Quality Improvement Funds (WIQF) to enhance or develop Best Management Practices (BMP) when addressing stormwater runoff in highly impervious areas of the City (Downtown, South Crater Road).





## Stormwater & Stormwater Management

Stormwater runoff is the water that flows off roofs, driveways, parking lots, streets and other hard surfaces during rain storms. Stormwater runoff is also the rain that flows off grass surfaces and wooded areas that is not absorbed into the soil. The runoff that is not absorbed into the ground pours into ditches, culverts, catch basins and storm sewers. It does not receive any treatment before entering the streams and lakes.

Water from rain or melting snow either seeps into the ground or “runs off” to lower areas, making its way into streams, lakes, and other water bodies. On its way, runoff water can pick up and carry many substances that pollute water. Examples of common pollutants include fertilizers, pesticides, pet wastes, sediments, oils, salts, trace metals, grass clippings, leaves and litter. Stormwater polluted runoff can be generated anywhere people use or alter the land, such as farms, yards, roofs, driveways, construction sites, and roadways.

As precipitation falls on agricultural and undeveloped areas, it is primarily absorbed into the ground or slowly runs off into streams, rivers or other water bodies. However, development resulting in rooftops and paved areas prevent water from being absorbed and create a faster rate of runoff. This development often causes localized flooding or other water quantity or quality issues. In addition, stormwater can carry harmful pollutants, cause flooding, erode topsoil and stream banks and destroy habitats.

The Federal and State government has mandated that cities the size of Petersburg develop and implement a series of programs to improve the quality of stormwater runoff. Stormwater runoff needs to be managed just as any other natural resource. It is needed to maintain the quality of our natural watercourses as drinking water supplies and for recreational activities such as swimming, fishing, water skiing, etc. Stormwater also needs to be managed to minimize damages that may occur when stormwater runoff exceeds

the capacity of the pipes and open channels used to carry stormwater to our rivers and streams.

The City of Petersburg is responsible for managing all aspects of stormwater within its jurisdiction. The City operates and maintains drainage facilities that are located within the public right-of-way or public easements, and is also responsible for the water quality of natural streams within its jurisdiction as designed by the State and EPA; however it does not maintain facilities that are located on private property or that fall under the jurisdiction of other governmental jurisdictions.

Historically, Petersburg has performed maintenance of the stormwater collection system, which includes cleaning, repair and replacement of the City’s stormwater infrastructure. As a result of Federal and State mandates, the City also regulates the effects of stormwater runoff from new development. The following illustrations show some planned initiatives that will continue to enhance the City’s stormwater management program.

The City of Petersburg has been designated by the VA Department of Environmental Quality (DEQ) as a Phase II Municipal Separate Storm Sewer System (MS4). This designation is also given to other Virginia localities of similar size having a storm sewer system that discharges – directly or indirectly – to a protected river, bay, or other body of water. As a Phase II MS4, the City is responsible for stormwater discharges to receiving waters through an MS4 (VPDES) General Permit administered by DEQ. The permit requirements are very extensive, generally covering six (6) areas called Minimum Control Measures:

1. Public Education and Outreach
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in new development and Development on Prior Developed Lands



## 6. Pollution Prevention/Good Housekeeping for Municipal Operations.

### **Impaired Waterways**

For a stream, pond or river to be classified as “impaired” it does not sustain the types of communities of fish and insects that it would otherwise naturally support if there were no pollution present. According to this definition, the Appomattox River and the swamps in the south-eastern portion of the City are impaired.

One of the most significant impacts to the Appomattox within Petersburg’s borders is related to the Chesapeake Bay Act and the mandate for localities in the Chesapeake Bay Watershed, to reduce pollutants that flow into the Bay and damage the ecosystem. The South Central Wastewater Authority (SCWA), located in Petersburg, but serving the region as well as the City, is a point source for treated water flowing into the Appomattox River and eventually the Chesapeake Bay. Accordingly, SCWA is under a state mandate to reduce the amount of nitrates and phosphorous that it releases into the Appomattox River by December 2010. In order to accomplish this, improvements to the treatment facility must be made. Water Quality Improvement Funds will likely subsidize the cost of this project, but even with assistance, cost estimates could be about 50 million dollars more. If improvements are not made by 2010, SCWA will have to purchase credits from compliant localities, passing cost onto Petersburg and other member localities in the region. While the treatment facility is located within Petersburg’s borders, this will be a regional effort addressing the impacts the region has on shared waterways and the environmental effects down river.

The Blackwater Swamp, which stretches from the eastern City boundary to South Crater Rd and Oak Hill Rd, has also been identified as impaired due to a high bacteria count and is therefore not recommended for recreational use. Possible sources of contamination are aging, leaking sewer lines, and runoff from commercial or industrial development in the vicinity of the swamp.

A progressive Capital Improvement Program is necessary to address not only current failures in the system, but foresees future development needs and potential failures. Additionally it will be important for the City to do its part for environmental stewardship and protecting the health of its citizens by enacting ordinances that mitigate the impact of development of the swamps and waterways through improved stormwater management.

### **Brownfields**

A brownfield is defined as a site that has actual or perceived contamination and potential for redevelopment or reuse. In 2000, the EPA conducted a brownfield assessment of City-owned brownfields on Commerce Street, High Street, and along the Appomattox River. Since the Initial announcement of this study in 2000, former industrial sites along Commerce Street and High Street have been adaptively reused for loft apartments in concert with the revitalization of Downtown Petersburg. The redevelopment of brownfields along the Appomattox and environmentally responsible dredging of the river would improve the economic viability of the downtown and improve the environmental quality of the currently impaired Appomattox River.

### **Greenfields**

In juxtaposition to brownfields, greenfields are undeveloped tracts of land used for agriculture or preserved as open space. Most of Petersburg’s greenfields are found along the southern boundary that borders the rural counties of Prince George and Dinwiddie. Petersburg’s Greenfields provide environmental benefits for the whole City by providing pervious land that will filter and absorb stormwater, tree cover that absorbs CO2 emissions, and habitats for local wildlife. In addition to environmental benefits, Greenfields add natural beauty to the City and preserve the City’s Civil War history, such as the 750+ acre Petersburg National Battlefield Park.



The value of these Greenfields can also be seen in terms of economic progress and expansion for the City. Petersburg was able to retain the Southside Regional Medical Center within its limits and benefit from the developing markets that surround it by providing open land. Smart packaging of open parcels in the City's Enterprise Zones has the potential to attract new industry and more jobs.

Not all open space is right for development, and not all open space should be preserved. Some remaining open space may have low-lying areas that sit near swamps and/or wetlands and are susceptible to flooding. Examining zoning codes to better protect the environment and open spaces is an opportunity for Petersburg to address the Chesapeake Bay Act and better manage its remaining open spaces. Greenfields are a precious commodity in urban areas, and Petersburg must plan proactively for new development, preservation of open space, recreation, and environmental protection in ways that best suit the need of residents of Petersburg.



## Harbor Initiative



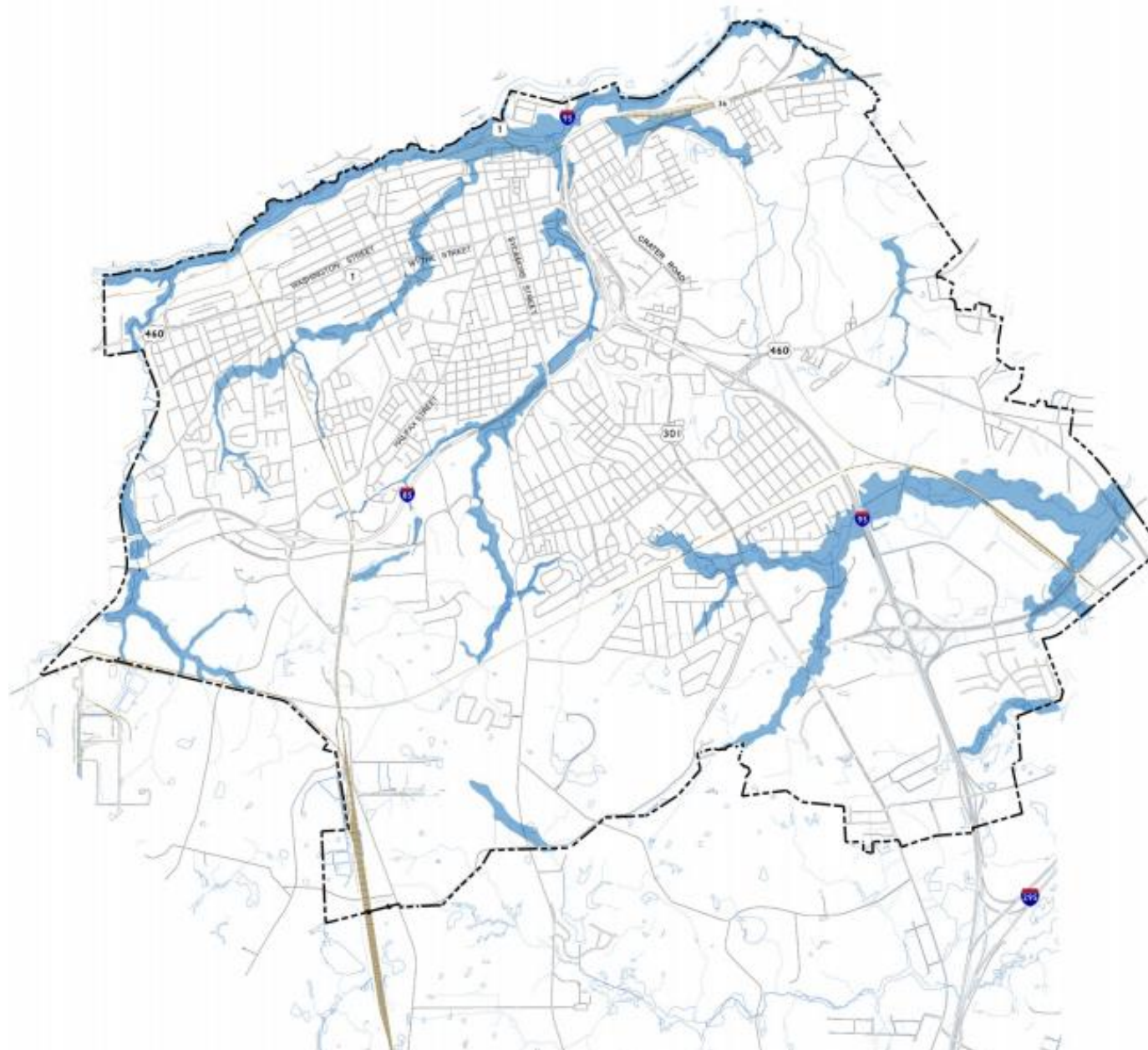
The City has long pursued the recreation of a navigable harbor on the Appomattox. The process of dredging the river has uncovered hazardous materials that have halted the finished product of a harbor for many years. The Army Corps of Engineers are finalizing the Comprehensive Agreement between the City and Container First Services. CFS has expanded their license with the State Department of Environmental Quality to be able to accept dredged material. This is a major step closer to the realization of the dredged Appomattox River. Once this process is complete this will open up an array of economic development opportunities with riverfront benefits.

The discovery of contaminated materials during Appomattox River dredging had created an environmental obstacle to the recreation of the Petersburg Harbor and the process has been slow. However, the support from the federal government to date has been consistently supportive, and the City can be reasonably confident that the dredging will occur in the not so far future.

The Pocahontas Island Neighborhood Plan completed recently showed a number of ideas for reuse of the old Roper Brothers site to stimulate development on the Island. The plan further explores infill single family development as well as expanding an existing trail through the neighborhood to continue to tell the story of the City of Petersburg. Interpretive signage will tell



the story of the Free Black Community that existed amidst the racial turmoil going on in the Nation and other parts of the City of Petersburg. The dredging project is the direct link to the success of the other recommendations found in the plan.



## FLOODPLAINS COMPREHENSIVE PLAN CITY OF PETERSBURG, VIRGINIA

### LEGEND

 100 YEAR FLOODPLAIN

SOURCE: FEMA FIRM MAPS



JUNE 24, 2008  
K.W. Poore and Associates, Inc.  
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**WATER FEATURES & WETLANDS**  
COMPREHENSIVE PLAN  
City of Petersburg, Virginia



- LEGEND**
- CITY OF PETERSBURG CORPORATE LIMIT
  - BODIES OF WATER
  - SWAMPS
  - WETLANDS

NORTH

11700 12400 13100 13800 14500

GRAPHIC SCALE IN FEET

SEPTEMBER, 2005  
K.W. Poore and Associates, Inc.  
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## STEEP SLOPES ANALYSIS

COMPREHENSIVE PLAN  
City of Petersburg, Virginia



### LEGEND

--- CITY OF PETERSBURG CORPORATE LIMITS

#### Slopes Analysis

- 0 - 18% GRADE
- 19% - 24% GRADE
- 25% + GRADE



MAY 20, 2008  
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## Existing Land Use

Existing land use in Petersburg has a large impact on the location and type of future development, since established land use patterns are not easily changed. Understanding existing land use patterns is therefore essential to planning for desired future growth. The existing land use map for Petersburg is shown on the following page. The present use of all property was compiled from field surveys in May 2008. Graph 15.1 shows the percentage and acreage for each land use which totals 22.9 square miles.

### The major categories of land use are as follows:

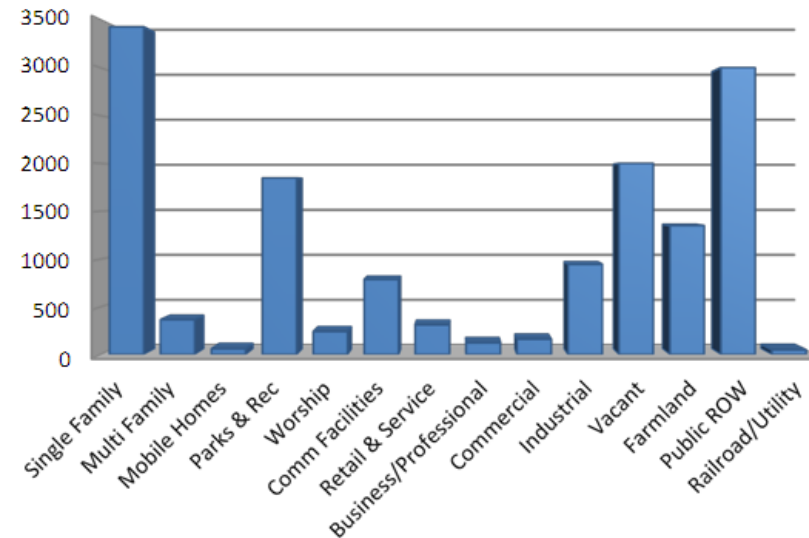
**Low Density:** Conventional single-family homes, row houses, single building duplexes (two-family) which are generally located on individual lots.

**Medium to High Density:** Apartment complexes and condominium style living. Generally includes any type of clustered housing as part of a larger complex.

**Mobile Homes:** Includes individual manufactured and mobile homes and mobile home/trailer parks.

**Retail & Service:** Includes all types of retail outlets such as shops, convenience stores, clothing shops, and restaurants. General Commercial can include auto repair shops, bulk storage, gas stations. Service also includes personal service (beauty and barber shops, nails salons, fitness, and dance studios. Service may also include appliance servicing but not manufacturing.

### Existing Uses by Acreage - 2008



**Business/Professional Services:** Includes general offices, dentists, doctors, law firms, insurance agencies and other such professional services and offices.

**Industrial:** Includes both low-intensity industrial uses such as light manufacturing or processing of goods. Also includes heavy manufacturing of goods including processing packaging, treatment of products and materials.

**Community Facilities:** This includes all municipal buildings, land and stations, water storage, and schools. Places of Worship (churches, synagogues, temples, storefront, cathedrals, halls), Cemeteries, community centers (not for profit) and lodges.

**Parks & Recreation:** Includes public parks, small neighborhood parks, recreational facilities, sports complexes, sports fields and other recreational areas.





**Vacant:** All undeveloped land including vacant lots, open space, and forest lands.

## Existing Land Uses Map

As is visually apparent, from the existing land use map on the following page, the City of Petersburg has a considerable amount of land devoted to residential use including single-family, multi-family, and mobile homes. Residential uses make up about 30% of all land uses in the City. Commercial uses only make up about 15% of the acreage used in the City of Petersburg and are primarily concentrated in downtown/Old Towne Petersburg, along Crater Road, and along Route 36/Washington Street. The acreage devoted to Industrial land uses have changed over the years as the old warehouses have been converted to residential uses or rezoned for other commercial uses. Approximately 5%, Industrial uses are scattered throughout the older portions of the city and the outskirts of the City. The remaining acreage is devoted to Community Facilities to include churches, cemeteries, and parks. Vacant land throughout the City has increased in recent years as we have demolished homes as a part of the blight removal policies. The remaining land uses comprise of 4.5 square miles of dedicated roads, rail, and transportation right of way.

## Development Trends

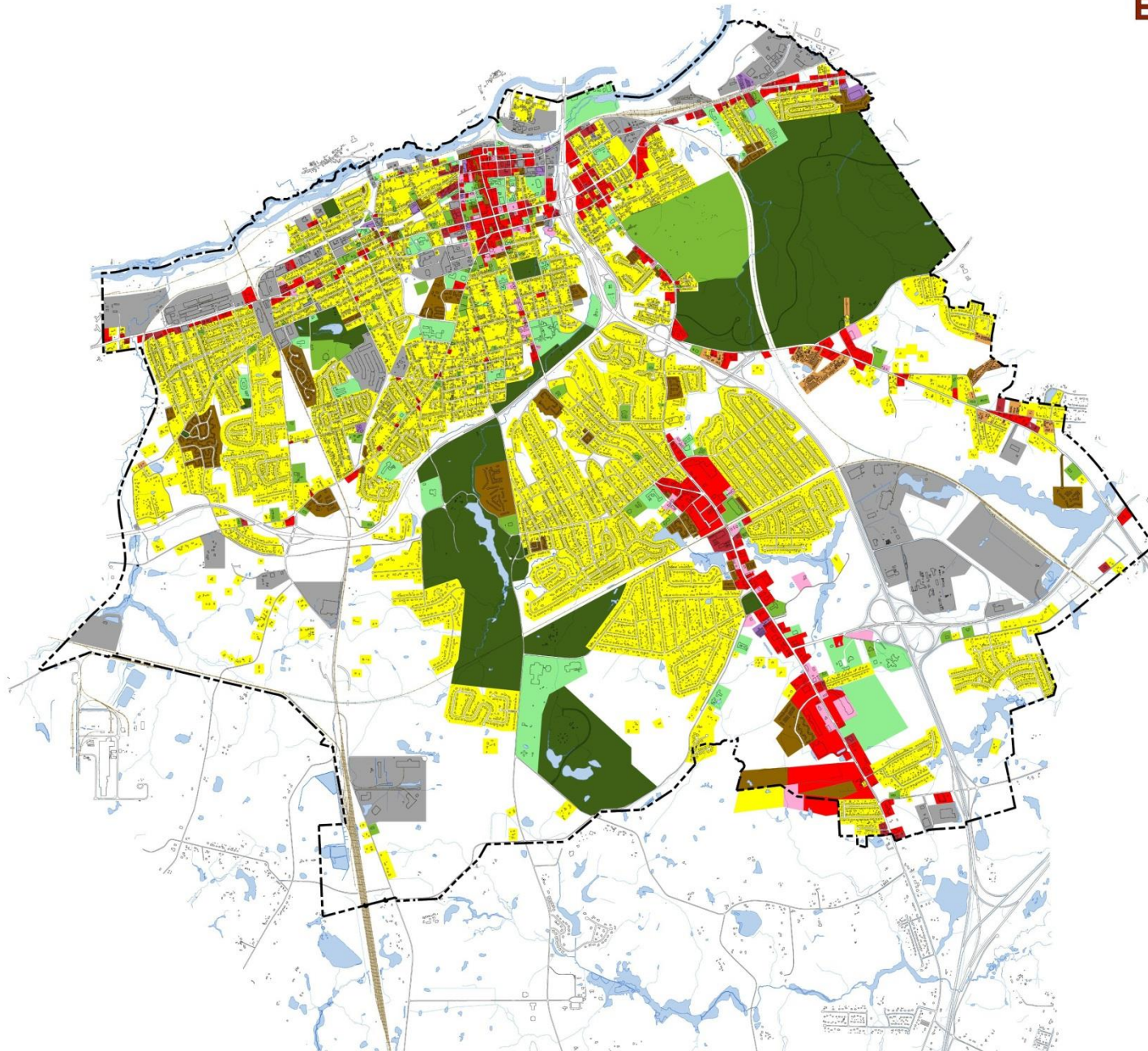
Although land use today is determined by planning and zoning, Petersburg's early growth followed the various transportation corridors which cross it. This is evident in the Street patterns and land uses shown on the existing land use map. Transportation and land use have been linked since the City's beginnings as Fort Henry in 1646. Situated at the falls of the Appomattox River, Petersburg's early growth depended on the river front for trade in tobacco and other goods. Industrial development along the river and the clustered mixture of uses on the street grid of Old Towne reflect the days before the automobile. The 19<sup>th</sup> century rail began to affect Petersburg's growth and shook the foundation of its center for

industry and trade. The land dedicated to industrial use today is still found along the numerous railways which cross Petersburg. The railroad corridors along the river front continued to supply the industries located along the river and strengthened Petersburg's economic importance as a center for manufacturing. Rail continues to be an important part of the existing land use pattern. Industrial areas line the CSX and Norfolk Southern lines shipping coal, mixed freight, and even automobile.

The rise of the automobile began to change the pattern of land use nationwide by the mid-20<sup>th</sup> Century. Neighborhoods north of interstate 85 and 95 as seen on the Current Land Use map, reflect the evolving patterns of land use as residential, commercial and industrial uses were increasingly kept separate. Zoning and increased automobile traffic became a part of everyday life. The pattern of land use south of interstate 85 is classic suburban growth which flowed from the construction of interstates across the nation. While older residential neighborhoods in Petersburg show occasional neighborhood commercial uses, the explosion of growth in the 60's, 70's and 80's south of Interstate 85 shows almost a complete separation of land uses. Commercial growth occurred primarily along South Crater Road, with large amounts of land dedicated to parking lots and widened roads in stark contrast to the narrow streets of Old Town.



## EXISTING LAND USE COMPREHENSIVE PLAN City of Petersburg, Virginia



### LEGEND

#### Land Use Classifications

##### Residential

- SINGLE FAMILY
- MOBILE HOME
- MULTI-FAMILY

##### Commercial

- RETAIL & SERVICE
- GENERAL COMMERCIAL
- BUSINESS / PROFESSIONAL SERVICE

##### Industrial

- INDUSTRIAL
- WAREHOUSING

##### Public & Semi-Public

- COMMUNITY FACILITIES
- PLACES OF WORSHIP, CEMETERIES  
LODGES
- PARKS & RECREATION

- VACANT



MAY 20, 2008  
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As the automobile brought changes in land use patterns, the Interstate interchanges have also brought clustered hotel and highway commercial land uses, especially at the Washington Street interchange. The interchange at Wagner Road has recently proven to be vital for industrial growth east of Interstate 95 in the southern portions of Petersburg around the new Southside Regional Medical Center.

Park and recreation land uses are found throughout the City. Some of the largest areas dedicated to a single use in Petersburg fall under the category of parks and recreation. Although also considered a cultural resource, the Petersburg National Battlefield is a park area of 750 + acres, where residents and visitors can experience Petersburg’s role in the Civil War as well as hike or ride bikes. Lee Memorial Park, the Dogwood Trace Golf Course, and the Petersburg Sports Complex are found in the southern part of the City, surrounding Petersburg high School. Together they create a large tract of recreational and park land use similar in size to the Petersburg National battle Field.

With the exception of the Old Town area, the land uses in Petersburg are largely separated from one another. Commercial zones are clustered along major arterial roads with residential areas comprising most of the land use throughout the city.

As noted in the Population section, the percentage of elderly residents in Petersburg is expected to increase over the next 20 years. It is important for people to have the option to remain connected to their communities, remain as independent as their health will allow and have access to a full range of local services (educational, cultural recreational) as they grow older. This concept is known as “aging in place.” Appropriate land use policies are key to ensuring that this can occur. Future land use policies should encourage growth in inner city neighborhoods which have shown the greatest decline over the year. Future land use policies should also encourage development that results in a sustainable pattern of land use which creates neighborhood centers and allow for multi-modal transportation options. This will involve working with developers and redevelopment to move away from the suburban

separation of uses and create neighborhoods with mixed amenities that will create mixed-income neighborhoods.

Pre WWII commercial



Post WWII commercial



Pre WWII residential

Post-WWII residential



Perry Street Lofts



Van Buren Estates



Dunlop Street



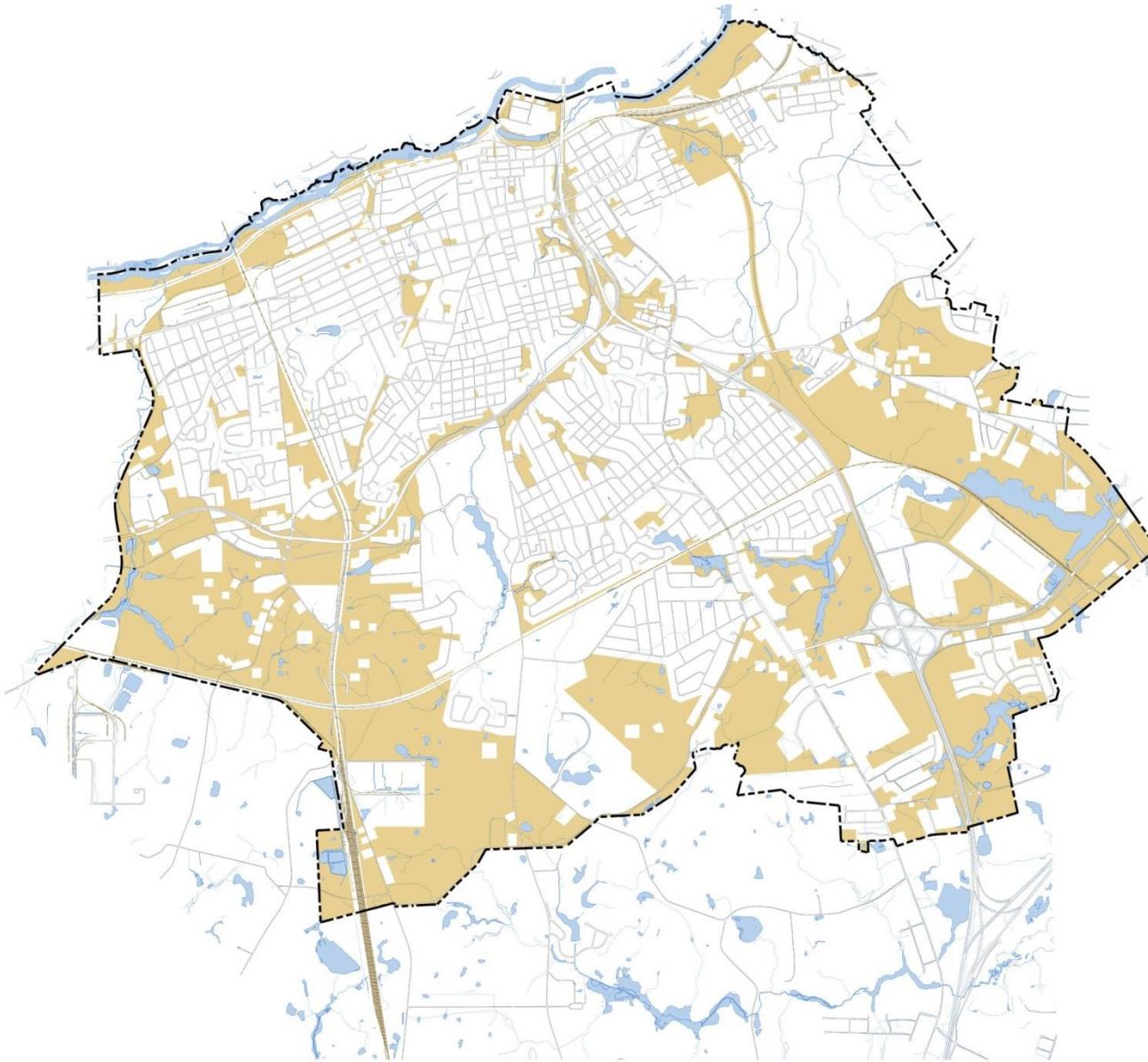
Multifamily Apartments



## VACANT LAND COMPREHENSIVE PLAN City of Petersburg, Virginia

### LEGEND

- CITY OF PETERSBURG CORPORATE LIMITS
- VACANT LAND



SEPTEMBER, 2008  
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## Planning Factors (The Current Situation)

Planning Factors are items which are influential in the current and future development of the City of Petersburg. The identification of these Planning Factors are intended to bring to the attention of the policy makers areas of consideration so that the City of Petersburg will be prepared for how these issues may impact the community as well as surrounding communities.

**Fort Lee/BRAC** -The expansion of Ft. Lee has doubled the size of the base population and has brought in approximately 11,000 new residents to the region. The close proximity of the City to the military installation presents a myriad of challenges and opportunities. The City is constantly looking for opportunities to offer a variety of housing options for those families looking for housing. Land uses closest to Ft. Lee along Route 36 are in the process of being evaluated to make sure the appropriate zoning district is mapped. Transportation needs must be considered and Petersburg Area Transit has implemented additional route to connect the military base to the City. Additional routes and service lines are always considered when we consider mobility and connectivity options. The current public school system may not have us in the best position to attract families, but the school administration and school board are making great strides. A military initiated program- the Army Community Heritage Partnership (ACHP) was extended to Fort Lee in Petersburg, Virginia in 2006. It provides joint support from the U.S Army and the National Trust for Historic Preservation Main Street Center working with the City of Petersburg. The Mission of the program was to help Petersburg understand how to better serve the Fort Lee army population. The research resulted in the military's desire for the City to enhance its historic downtown by creating residential options in the downtown area, increase shopping, and dining opportunities and to focus on the city's gateways; specifically, the Route 36 corridor which connects Fort Lee to Petersburg.

Associated Fort Lee Growth along Route 460 –Fort Lee's expansion has also resulted in opportunities for the 460 corridor where civilians may wish to locate industries in close proximity to the base. Route 460 is advantageously poised to handle industrial, residential, and mixed use businesses. As the City continue to manage its growth it may become necessary in the future to initiate a city-wide rezoning to change the zoning to facilitate this growth.

**Blighted Entry Corridors** – There are two highly visible and traveled entry corridors in the City that are ripe for redevelopment:

- Route 36 from Fort Lee – this is a gateway for residents, tourists, soldiers which are currently underutilized. Outdated suburban strip development lacks a sense of place and is not very welcoming.
- Interstate 95 at Washington Street (Exit 52) - this is the primary entrance into the City of Petersburg to go to Old Town, the Central Business District and Petersburg's historic neighborhoods. The welcoming committee for this entry into the city consists of run-down and vacant motel developments as well as highway oriented strip development which create an old and abandoned environment not conducive for business.





**Underutilized Water Front-** the Harbor Project has been discussed for years and the environmental barriers to redevelopment are still in the works. Continual effort at addressing environmental issues will open the door for redevelopment possibilities. This is an underutilized asset.

**Neighborhood Revitalization-** planning for neighborhood revitalization should seek to nurture investment and the signs of life emerging from three areas:

□Ross Court – Virginia LISC, Elder Homes, and Trinity Capital Development have undertaken the first of many planned revitalization efforts. In total, 14 houses have been discussed and planned to be renovated or constructed with improvements to street, water, and sewer infrastructure.

□Halifax- this area has recently seen the expansion of the Poplar Lawn Historic District, the relocation of the Petersburg Redevelopment and Housing Authority offices to the neighborhood, and the construction of a new multi-modal transit center.

□High Street- conversion of the Seward’s Luggage factory into apartment lofts and the restoration of Victorian homes along High Street have brought a diverse mix of housing extending from Old Towne.

**Virginia State University & Expansion** – the master plan for VSU calls for the significant expansion and construction, primarily oriented toward the entrance from East River Road. Petersburg can engage VSU for future partnerships and better town and gown relations.

**Parkway Easement Issues** – There was pressure from development to access Defense and Flank roads. The City of Petersburg will need to actively plan and engage stakeholders if they intend to act as stewards of historical resources dating back to the Civil War.

**Battlefield / Viewshed Preservation** – the National Park Service and other preservationists have voiced concern over encroaching development around the battlefield site on Flank Road across from Fort Wadsworth in the south-west corner of the city. The city and National Park Service need a good working relationship to protect these unique resources.



**Former Southside Regional Medical Center** – The former hospital site is an opportunity for redevelopment. There is a master plan down through funding from the Cameron Foundation. The hospital was an important part of this portion of Sycamore Street and close attention should be given to its stability.

**New Southside Regional Medical Center** – the new hospital has spurred commercial, retail and residential growth along South Crater Road. The new location provides momentum for job growth in the fastest growing part of the city and is an example of successful and proactive planning to keep the new hospital within the city limits.

**South Crater Road Growth Corridor** – the growth along South Crater Road is a welcome economic boost for the city. The progression and pattern of development should be of concern to the city, however, because it shows a progression for growth to go beyond city limits. Sprawling development to neighboring localities



has been problematic for Petersburg in the past, and the continued progression of low density strip development along South Crater Road could bring about these same problems in the future if growth is not managed responsibly.

**Chesapeake Bay Act Sewer Plant Upgrades** – the Chesapeake Bay Act requires upgrades to the sewer treatment plant by 2010 to reduce nitrates released into the Chesapeake Bay. While this deadline is unlikely to be met, it will require purchase of credits until the plant is brought into compliance. This will be a considerable expense for the City of Petersburg and other member local governments in the near term.

**Water/Sewer Service** – the area south of Defense Road and west of the rail road in the western portion of the city lacks water and sewer services. This will need to be addressed if development is to be encouraged.

**City-wide Planning Factors**– Several factors are city-wide issues which cannot easily be pinpointed to one spot on a map. They are nonetheless important for planning Petersburg’s future:

**Aging water / sewer lines** – many of the water and sewer lines are in need of replacement and repair. The city’s infrastructure is about 100 years old and significant investment is required to avoid failure in the system.

**Riparian/wetland protection and setbacks** – new development along South Crater Road is often adjacent to sensitive wetlands. Riparian buffers are needed to protect the Chesapeake Bay and the Appomattox River in preparation for any development to occur along the river front. This can be achieved through our zoning regulations.

**Shortage of Large Industrial Parcels** – the economic development of Petersburg has been largely dependent on attracting new industrial jobs. With a shortage of available large tracts of land, there will need to be efforts to assemble smaller parcels, purchase

underutilized land for redevelopment, or a shift in economic development strategy.

## Focused Issues

### 1. Economic Development

Economic development efforts require a multi-faceted approach to best serve the current workforce, train the next generation, and position the City to adapt to regional, national, and international economic trends. Petersburg’s economic development efforts are served by a number of partnerships and agencies at the state, regional, and local levels who have the resources to address these areas. Table III-A displays the broad spectrum of services provided by multiple agencies vital to Petersburg’s economic development efforts and have an active role in creating partnerships and business friendly environments:

**The Petersburg Economic Development Office** maintains a listing of industrial sites and facilities for potential employers looking to expand or relocate operations. They also manage the two Enterprise Zones in Petersburg, which allows the City to offer state and local incentives to industries which locate new operations to these designated areas. The Industrial Development Authority (IDA) is part of this office. The Economic Development Office seeks to maintain communication with current industries in Petersburg and help with their needs for expansion, recruitment and relocation of associated suppliers to Petersburg. See Incentives Charts in the Appendix section of this plan for all the tools that can be utilize to retain, attract and revitalize our community.

**Crater Planning District Commission** is involved with economic development by offering loan packages to companies in Petersburg. The intent is to lessen the financial burden of starting or expanding



business in the area. A revolving loan fund has a maximum of \$250,000 in loans and has funded 19 total loans, 16 of which have been businesses in Petersburg.

**Virginia’s Gateway Region** markets the region and goes after specific industries looking to relocate or expand. Specific to Petersburg, the VGR markets industrial properties, the cultural, commercial and quality life assets, and has sponsored several tours for developers and real estate professionals to showcase redevelopment and commercial opportunities in the region’s urban areas. VGR has also partnered with the Cameron Foundation to prepare a plan for the redevelopment of the former Southside Regional Medical Center site.

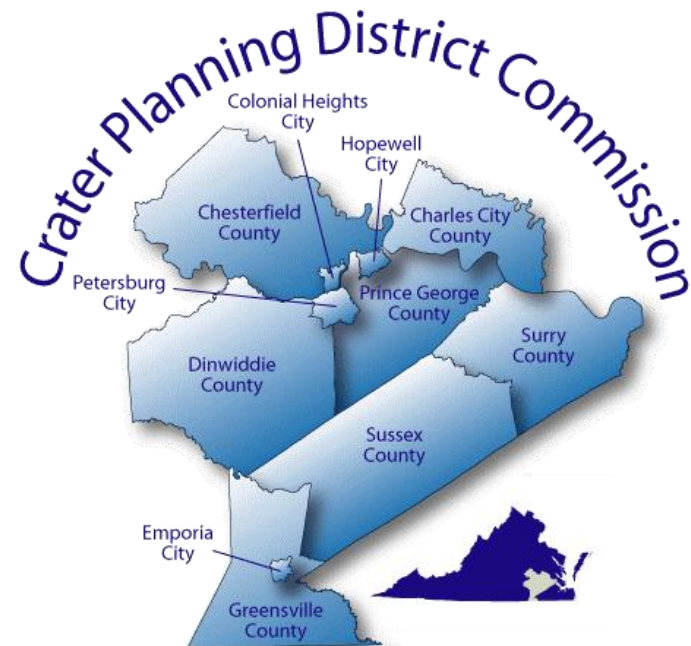
**The Petersburg Chamber of Commerce** works to build the business of its members by making referrals and respond to inquiries, by mail or telephone that come in through their website. Members are supported and promoted through advertising, sponsorship, and referrals.

**The Cameron Foundation** is a not-for-profit organization which provides grant and philanthropic contributions to support programs and activities in the City of Petersburg, Colonial Heights, Hopewell, and the counties of Dinwiddie, Prince George, Sussex and the portion of the county of Chesterfield South of Route 10. The grants are to further education and services in the fields of healthcare, human services, civic affairs, community and economic development, education, conservation and historic preservation, and cultural enrichment.

**Virginia LISC** arrived in Petersburg in 2005 with the support of the Cameron Foundation. A grass roots organization has been very successful in bridging the gap between local government and local community development corporations. In cooperation with the community, a Strategic Investment Plan in conjuncture with Urban Design Associates was done for several struggling communities in Petersburg. The plan focuses on revitalizing Petersburg’s

neighborhoods by building quality affordable housing partnering with a non-profit. In addition to jumpstarting revitalization though improving the housing stock, they have provided consultant services to local nonprofit groups (Pathways and Restoration of Petersburg Community Development Corporation) in order to build capacity within Petersburg for a sustained revitalization and redevelopment of neglected neighborhoods.

**The Department of Cultural Affairs, Arts and Tourism** introduces Petersburg to visitors from all over the world who are interested in hearing about and seeing the rich, 400-year history of Petersburg. At the City’s three museums (Blandford Church & Cemetery, Centre Hill Museum, and the Siege Museum) and the Visitor Centers both in Old Towne Petersburg at the historic, 1817 Farmers Bank and on I-95 at the Carson, Virginia. The Department showcases the unique features and qualities which make Petersburg such a colorful City. The Department promotes both the historical attributes of the City as well as the contemporary features such as dining, shopping, residential, and recreation. The aforementioned all aid in creating a more attractive, livable City.







## Education and Economic Development

The presence of higher education institutions in a community are an opportunity to build partnerships for economic development. In addition to being a resource for job training, community initiatives, volunteers, and internships, colleges, and universities can provide strong support for the local market. Virginia State University, Richard Bland College and John Tyler Community College are relatively untapped resources for the City of Petersburg. Engaging these Universities to identify areas where the City and Institution can work together will open doors for redevelopment efforts and attracting companies who can benefit from this skilled and trained population of graduates.

**Virginia State University** has formulated a Master Plan and 20/20 plan in which they included representatives of the City of Petersburg in the planning process. Both plans present opportunities for the City of Petersburg to partner and capitalize on the expansion of programs and the university. However, the existing Master Plan calls for the majority of University improvements to orient the primary gateway and campus life to the Chesterfield and Colonial Heights entrance with minimal connections and improvements associated with the City of Petersburg. The main entrance to the University is no longer considered to be the historic entrance neighboring Petersburg along the Appomattox River.



The plan is being revisited and the City of Petersburg has been invited to the table to be a part of the process. Cultivating the relationship between the current administration and city officials is proving to be the first step in order to regain access and benefit from the university traction of the students and family.

## The Economy and Quality of Life

Economic development improves the quality of life, but economic development is also dependent on the quality of life to recruit and retain business. We are seeing a change in the quality of life found in the City of Petersburg, although we face competition from adjacent localities people are looking for what we have to offer. We boast on affordable housing, a variety of housing options, smaller classrooms, small quaint restaurants, and shops. There is a short commute to major employment opportunities; there is little to no traffic in traveling to and from work, weekend events and activities, cultural arts and museums, and many other assets.

Improving the quality of life is the responsibility of the City government and a task that has not been taken lightly. City government work very closely with our school administration to provide financial and program support. The City takes pride in maintaining a clean city, safe neighborhoods and dealing with issues head on in neighborhoods that experience a threat to safety, attractive housing, retail amenities, parks and recreation opportunities. The City of Petersburg is utilizing its resources as well as seeking grant funds to better address issues that impend our health and stability. It can't all be addressed at once, but policies are in place to prioritize the issues and tackle them one at a time. There is always the opportunity to do more, so the City must continue to foster the relationships with people who can partner to offer initiatives and incentives that will help us in attracting and retaining business in the City.



### Petersburg's Economic Standing

There is still undeveloped land within the city limits. Rural and vacant land within the City is an attractive asset for industrial, retail, and residential developers. The revenue and synergy from new developments must be balanced with efforts to revitalize declining areas if the City is to comprehensively support economic vitality. Interviews with various economic development partners and agencies in Petersburg and factors that have come from previous revitalization strategies which reveal valuable input on common themes listed below: An updated status to the input has also been provided so that we can see the issue mirrored by the plan of action.

- Petersburg has the opportunity and potential to revitalize and turn itself around, but the failure of the City to have a sustained and focused strategic vision is an obstacle to overcome.

**The City is capitalizing on their ability to revitalize and turn it around and currently have strategic goals and a vision for moving forward. This is no longer an obstacle to overcome.**

- Economic development partners are frustrated with the reactive nature of the City

**The City is doing a better job in working with the development partners to anticipate changes and to identify the plan ahead of the change. The City work every day to be proactive and not reactive.**

- While always eager when a prospective employer shows up, the City does not actively market itself with a strategic message linked to strategic redevelopment efforts.

**The policy makers have a strategic plan and the City is doing a better job in linking the message to the initiative. The City is also consistent with the message that we are a business friendly community and the processes and timing of processing applications are reflective of the message.**

- The City's priorities are too often placed before decision makers, and no greater vision dictates the decision making process on development and revitalization. This prevents the City from taking a proactive role.

**The updating of the comprehensive plan making the vision clear that we want a clean, vibrant, safe, city committed to customer service and superior services is the step in the right direction to show that a proactive role is being taken in advance of the development.**

## Addressing Blight

*"Blighted area" means any area that endangers the public health, safety or welfare; or any area that is detrimental to the public health, safety, or welfare because of commercial, industrial, or residential structures or improvements are dilapidated, or deteriorated or because such structures or improvements violate minimum health and safety standard. – Virginia Code SS 36-49.1:1*

Tackling the obstacle of urban blight in Petersburg is paramount in revitalizing the City. The 2000 Comprehensive Plan recommended neighborhood redevelopment through selective demolition, infill development, and the use of financial incentives. The City is not alone in its determination of blight as a high priority. Strategic partners like the Cameron Foundation and Virginia LISC have brought expertise and capital to bear on revitalization efforts.

In 2007, a Strategic Investment Plan was developed through partnership with Virginia LISC, funded by the Cameron Foundation and studied by Urban Design Associates (UDA). Public support for



the UDA plan reflects a demand in the community for active redevelopment. The City has begun addressing blight and revitalization in Petersburg by utilization of the power given by the Code of Virginia to address this issue.

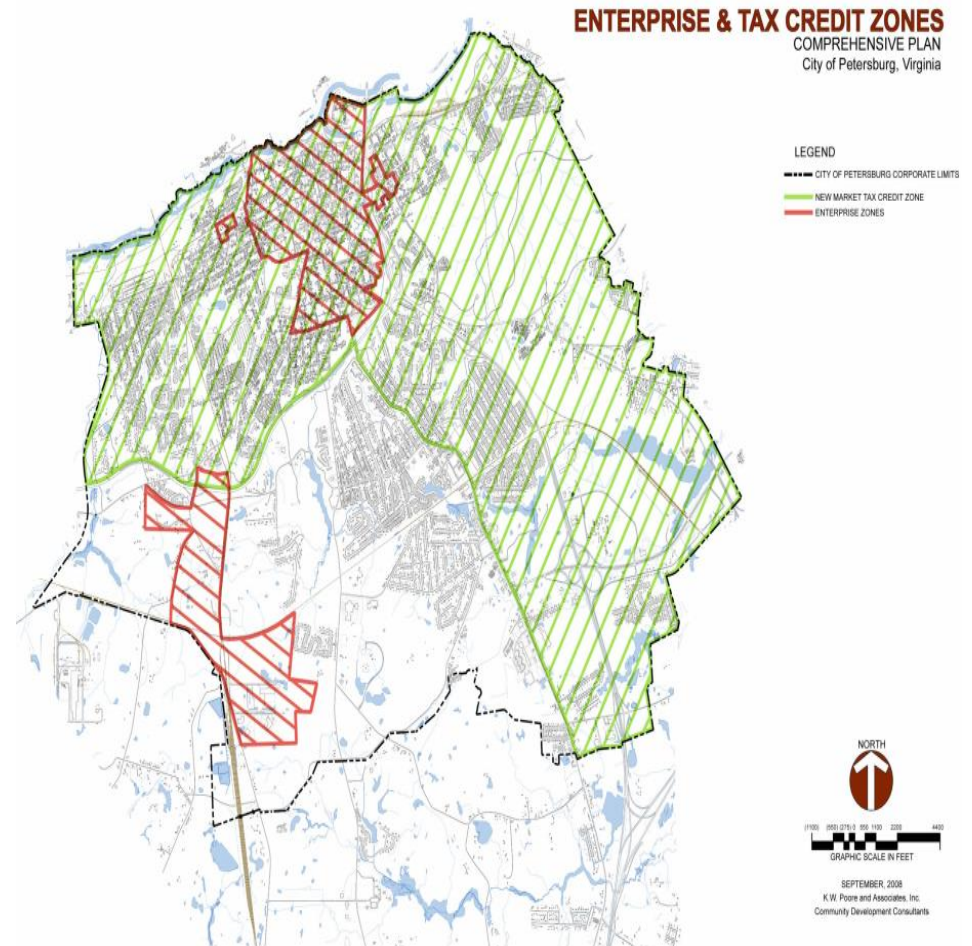
**Spot Blight Abatement** – The Code of Virginia allows for localities to identify blighted structures and take affirmative steps to bring them up to safe and sanitary standards. The City of Petersburg has updated its Code and ordinances to institute this tool used to empower us and encourage revitalization.

Blighted properties that lie within Historic Districts are reviewed by the City’s Architectural Review Board (ARB) to assure that improvements on the property are in accordance with the architectural character of the district. If the property owner is unwilling to make the appropriate improvements on the structure, the City may acquire the property to make the improvements.

Demolition projects should be the last result in dealing with blight. The goal is to restore the homes to a compliant contributing structure to the neighborhood. In the event where demolition becomes necessary it is the goal of the City to be good stewards and have a strategic approach to demolition. We want to be sure to protect our Historic communities and structures. Once demolished a community loses a piece of its history. The City is interested in preservation and restoration where possible.

## Enterprise Zones

The location of two enterprise zones in the City of Petersburg creates incentives for industries and businesses to locate in the City. Specifically, the enterprise zone located in the Central Business District matches local tax breaks with state grants according to number of jobs created or per number of buildings constructed or rehabilitated. The Enterprise Zones are an incentive actively marketed to prospective businesses.





## City-Owned Property

The city has acquired over the years a number of lots some are vacant and others have improvements. The city in cooperation with a real estate team is aggressively marketing these parcels to developers and/or investors. In some cases it requires the consolidation of one or two lots to build new single-family residential dwellings. In addition, there are a few commercial properties that are owned by the City and currently being marketed. The property is sold for redevelopment and/ or revitalization with a timeframe for development attached to the sale.

## Reinvestment Opportunities

There are numerous plans on the shelf of the city all talking about reinvestment and investment opportunities. It is interesting how all of the plans had the same focus areas. As such, this plan highlights the corridors and areas of town that have been identified in the many plans, particularly, the Strategic Investment Plan prepared by LISC and UDA, and the Regional Urban Design Assistance Team (R/UDAT) study. These areas are the focus of the future land use map, as they are identified on the map as corridors where the city seek to encourage development of mixed-use, mixed-income communities.

## University Boulevard/High Street

Principle 1 of the Strategic Investment Plan is to focus on gateways. This is essential in revitalizing the greater Battersea neighborhood. The intersection of University Boulevard (formerly known as Canal Street), High Street, and N. South Street has potential as an important central commercial and retail corner for a) Battersea Neighborhood, b) the revitalized High Street Corridor, and c) Virginia State students.

The High Street/University Boulevard (formerly known as Canal Street)/N. South Street intersection will boast of a mixed-use

development with multifamily residential units on the upper floors and commercial tenants on the first floor. This will be another project along this corridor that serves as a catalyst for other revitalization efforts.

## Halifax Street Triangle and Community

This commercial district sits around the intersection of Harrison and Sycamore Streets at the southern gateway into the downtown. This commercial district has a unique history as an African American center of commerce and culture. It also sits around a unique triangle shaped street pattern as Halifax runs southwesterly out of the downtown and Harrison runs southerly.

The 2006 redevelopment plan for the Triangle targeted three concurrent efforts that were either in the planning stages or already underway doing that time. Since 2006, this community has seen the construction and completion of the multi-modal transit center. The community is currently being reviewed for inclusion in a state and national historic district. The Petersburg Redevelopment and Housing Authority (PRHA) is currently located in this community. Recent years of decay has left the neighborhood full of many vacant lots and structures. While many churches remain in the area, there is little cultural amenities left. There are several development partners doing work in this corridor and have been successful with a few phases of development. In addition, there is new commercial construction planned for this corridor. The city recognizes that it must continue to partner and collaborate with its partners to bring about a major impact in the community.

Ross Court Redevelopment is another example of concentrated redevelopment efforts that aim to improve particular areas in the hopes that it will be a catalyst for reinvestment in the surrounding area.



## Stainback/West Street

The Stainback/West Street Neighborhood is another example of a community where reinvestment should occur. There is evidence of minor restoration, but nothing that impact the neighborhood as a whole. This is also a community with incompatible land uses and this will be addressed in the future land use map as we establish the appropriate land use designation for the different areas of the city.

neighborhood plan encourages the city to capitalize on the rich heritage and history of the island and to connect the cultural resources to the existing trail system. The Jarratt House, the only surviving brick structure on the island is one of the city's cultural resources.

## Rome Street, Westview and Birdville

A community located west of downtown which offers a variety of housing types while enjoying a close proximity to a large park. Unfortunately, use of the park is not maximized and it is a great amenity. Vacant lots are prevalent in this community and understanding the current fabric will aid in the renovation projects.



Possible funding sources for neighborhood redevelopment are Community Development Block Grants, which provide annual funds to Cities like Petersburg for the revitalizing of neighborhoods. Eligible activities include acquisition of real property; relocation and demolition; and rehabilitation of residential structures.

## Pocahontas Island

Pocahontas Island neighborhood plan recognizes this community as a diamond in the rough rich in history, but has faced many challenges over the years. Hit by two major storms that destroyed half of the houses make this a prime location for redevelopment. There are a lot of vacant lots for single family residential development. The community is bordered by the river and the highway which make it highly visible. The City goal is to encourage private investment on the island to provide infill housing development and commercial and recreational uses along the river. It is the goal of the city to protect the residents of the island from incompatible encroaching development. The





## Ft. Lee & BRAC

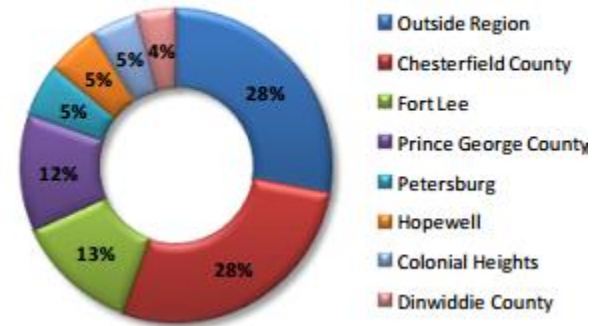


On November 9, 2005, recommendations by the Base Realignment and Closure Commission (BRAC) became law and began a process to relocate seven military functions from five states (including Virginia) to Ft. Lee. This process was completed in 2011. Both military and civilian personnel have relocated to the region, and the City of Petersburg has benefitted by this influx of persons.

Many studies have been undertaken to help the region prepare for the effects of such a large increase in population over a short period of time. The population on Ft. Lee has double from about 16,000 to about 32,000 people. As shown by the graph, the City of Petersburg did not see the population growth as other jurisdictions.

The military and civilian personnel have been located throughout the region while students and trainees were expected primarily to live and work on base. According to the report done for the Crater Planning district by RKG, Inc., the demographic, housing, and economic impacts associated with BRAC has distributed unevenly throughout the region. Chesterfield absorbed the largest percentage of growth. According to the study prepared by RKG, 5.5% of the increase in population from Ft. Lee has come to the city which equates to about 2,500 people. While this may not be a significant number of persons there is still an opportunity for the city to capitalize on this influx of people.

**Regional Population Distribution of Fort Lee Growth**



### Population Projections

Although Petersburg has experienced a steady loss of population since the 1980's the population projections provided by the Virginia Employment Commission suggest population loss will begin to level off. Without including the impact of the Ft. Lee expansion on the City, population projections level off around 33,900 by 2040. With as many as 2,500 people that have moved to Petersburg from the Ft. Lee expansion, the City might expect a leveling off of the population even sooner.

### Education

Ft. Lee expansion is has brought about 1,700 kids to public schools in the region, the bulk of which attends Chesterfield County according to RKG, Petersburg received an additional 175 children, with a majority of them below high school age. This presented a 3.5% increase in enrollment, which was a manageable and gradual increase, especially considering the overall Petersburg school enrollment has been declining.



## Housing Impacts

BRAC had an impact not just on population projections, but also the size and number of households coming to the region. RKG, Inc. stated an additional 1,800 households have come to the region from the Ft. Lee expansion. Petersburg's share of the housing impact was about an additional 217 households. The size of these households is about 2.8 persons, compared to the 2.38 persons per households in Petersburg. Overall the impact has increased the number of households who can afford, and who favor, homeownership. The average household that military personnel and contractors' can afford is between \$200,000 to \$300,000. While 217 households is a modest number, developments throughout the southern part of the City do create the opportunity to attract more than just families associated with BRAC.



266<sup>th</sup> Quarter Masters Battalion at Petersburg High School

## Transportation

The rapid growth of Fort Lee provided an opportunity for Petersburg, but also put new stress on entranceways in and out of the base. It was important that the City address issues of current and projected road capacity that would allow for smooth access between the base and City.

The Fort Lee Expansion Traffic Study proposed a series of road improvements that were made in and around Fort Lee. The project includes;

- Additional lane on Hickory Hill Rd into the base and intersection improvements where Hickory Hill intersects with Rt. 460;
- Modification of the traffic signal at the intersection of County Drive (460) and Courthouse RD (106) and the intersection of Washington Street and Puddledock Road.
- Installation of traffic signals along Baxter Rd at its intersections with Courthouse RD (106) and County Drive (469)



In addition to road improvements, the City must address corridor issues leading from Fort Lee into Petersburg. Route 36 Corridor that runs through this corridor to Downtown is the primary entrance corridor from the base into the City and is flanked by vacant and low-end commercial strip development, industrial uses, freight rail and a landfill. Attractive way finding signage should direct motorists to available amenities found exclusively in Petersburg.





## Employment & Economy

It was difficult to assess the specific and full impact Ft. Lee's expansion had on the City of Petersburg. Regionally, however, it is clear that the increase in operations and personnel brought more money to circulate within the economy. The single largest economic impact on the region stems from the salaries and wages paid to Fort Lee personnel, which in FY 2011 were 11,690 employees with employees circulated money in the regional economy enough to support an additional 10,043 jobs. This means a total of 21,733 jobs are supported by the expenditures and output generated by Ft. Lee.

As the table indicates, the 8,400 employees are their associated economic impact support jobs across a wide range of industries. The industries with the most employment created by Ft. Lee demand are the Health & Social Services, Accommodation & Food Services, and Retail Trade Industries. These three have a large presence in the Petersburg economy and suggest there will be local economic benefits for Petersburg.

As full effects BRAC begin to reverberate through the entire economy, the impacts from the expansion of Ft. Lee will continue to accumulate. Region wide, the Virginia Employment Commission estimates that the direct and indirect benefits on job creation will increase employment levels from the 7,500 jobs supported by Ft. Lee expenditures in 2006 to 14,000. By 2013, combined with the 11,690 of jobs in the region supported by Ft. Lee expenditures, salaries, and wages will total about 25,700 jobs.

## Gateways

First impressions are important. The impressions one receives as they approach and enter a City can impact ones desire to visit or live there. First impressions of a City are experienced when one passes through the gateways that lead into the City. These gateways vary in purpose and importance as they include a broad view of the City as one approaches small orienting entryways into specific areas.

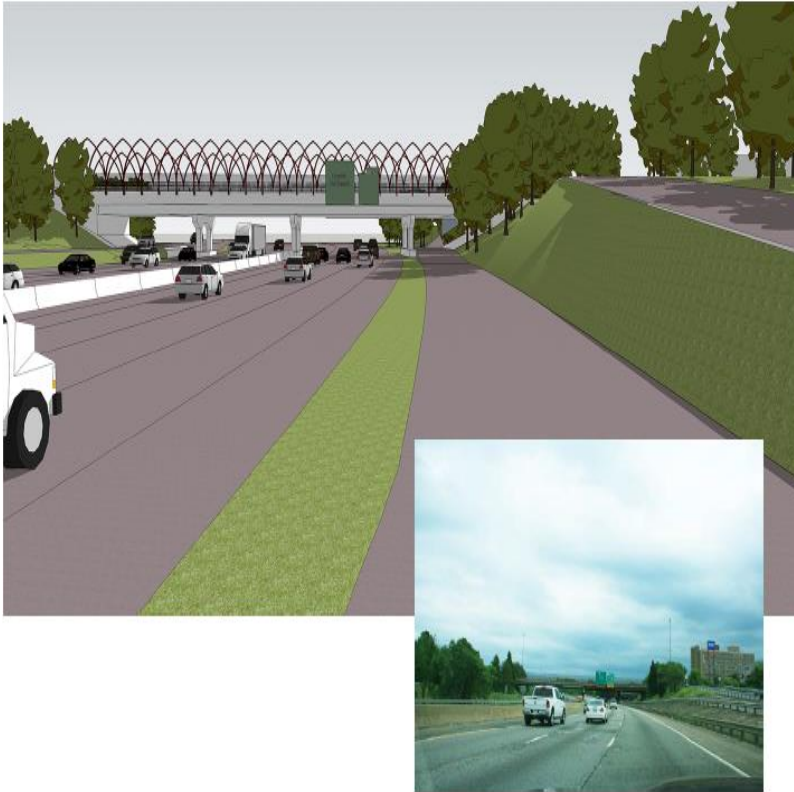
The City of Petersburg must show its vitality and unique features at its gateways. The City of Petersburg has interstates 95 passing though it providing the greatest opportunity for the city to showcase its uniqueness and richness. The City's edge provides the potential for gateway enhancements that will show those entering the City our uniqueness and warmth by an enhances gateway that expresses the sentiment that you have arrived in the great City of Petersburg and that you are welcome to find the time to shop, eat, and play. Internally, gateways to specific districts and neighborhoods must be installed to orient visitors and encourage them to explore.

### Interstate 95

As it passes through the City of Petersburg, Interstate 95 is the most significant gateway. The interstate is elevated as it passes the heart of Petersburg, and provides views into the City on either side. For travelers headed north, Petersburg is the first urbanized area that is encountered from North Carolina. Unfortunately, most of what travelers currently see consists of industrial sites, old, dilapidated warehouses, and uninviting hotels.

The configuration of Interstate 95 as it passes through the City can provide Petersburg with opportunities to attract visitors. Views will be enhanced and seen from the interstate as one will be taken in by the creative use of fencing and lighting. A visitor will get the feeling that they are welcome to our great city and want to see more.





Exit 52 Washington Street coming into the City

Traveling Interstate 95 there are three (4) Primary gateways introducing and inviting guest to stop. These are Wagner Road, Crater Road, Washington Street and University Boulevard. Currently these gateways provide only a sense of place, not very hospitable.

**Wagner Road**, while not a primary gateway leading into the heart of Petersburg, terminates into Crater Road providing comfort needs to those traveling I-95. At this interchange are found gasoline, convenience stores, and restaurants. A Wal-Mart is also available near this interchange. Wagner Road is experiencing interstate oriented development, increasing the volume of visitors passing through this gateway. The City of Petersburg can capitalize on this opportunity to present itself strongly and positively to those passing through.

**Crater Road** provides access to The Petersburg National Battlefield, which is a destination for thousands annually. Indirectly, Crater Road provides access to downtown Petersburg. This important gateway can be accentuated to welcome visitors to the City and encourage visitors to the battlefield to explore.

Possibly the most important gateway along the I-95 corridor is Washington Street. This is the gateway to the heart of Petersburg, and from this point several destinations are available. Currently, this entrance to the City does not present a welcoming introduction. Visitors are dumped onto a four lane, one way road with little indication that one has arrived in the City of Petersburg. Furthermore, there is a lack of clear way-finding signage to direct visitors to the various destinations.



## Washington Street (East)

The Washington Street Corridor is the main east-west corridor that transverses the City of Petersburg. Those traveling from Fort Lee, Hopewell, and areas east of the City will most likely enter Petersburg by way of Washington Street (State Route 36). This gateway has the potential to be a dramatic introduction to the City.

Currently, as one approaches from the east they emerge from a heavily tree-lined corridor into a deteriorating suburban landscape. The juxtaposition of the two scenarios is a clear indicator that you are leaving one locality and entering another, but the gateway is not inviting. Refinement of the landscape as one crosses the City line can provide the most enticing approach into the City. Given the population potential east of the City, this gateway may be important in attracting patrons to local businesses from Fort Lee, Hopewell, and beyond.



Existing sign as you enter the City from the East on Route 36

## Washington Street (West)

The major gateway into Petersburg from Dinwiddie is by way of the west end of Washington Street. Just as it does on the east end, Washington Street changes character as it crosses the border of the City. The width of the road changes from two lanes to four lanes, while the development on either side transitions from a more rural feel to a suburban strip. This gateway, though, is not developed at all as a gateway, and visitors have no sense of place. This entrance to Petersburg is not as significant and widely traveled; it should still offer a welcome to visitors and residents.



## Martin Luther King, Jr. Bridge

This gateway has great potential to draw visitors into the City and provides Petersburg an opportunity to really showcase itself. This approach into the City is elevated providing views first of the Appomattox River and then Old Towne. Once in the City, the street becomes Adam Street which provides a central corridor taking visitors to other destinations. Some effort has been invested to refine this entrance into the City through continuation of the street lighting that is incorporated on the bridge into the city and other visual infrastructure improvements. There is still ample opportunity to develop this gateway into a pleasant entrance for residents, visitors, and commuters.



Martin Luther King, Jr. Bridge coming from Colonial Heights into the City

## I-85 & Squirrel Level Road

The only exit into Petersburg from Interstate 85 is Squirrel Level Road. There is little reason for visitors passing along I-85 to need to

use this exit, except for refueling at the gas station at this exit. Any visitor taking this exit would not have any indication of where they are, and would most likely return to the highway and continue on.

As this is a possible location for land uses of greater intensity in the future, a coordinated effort must be placed upon this important interchange.

## University Boulevard (Formerly Canal Street)

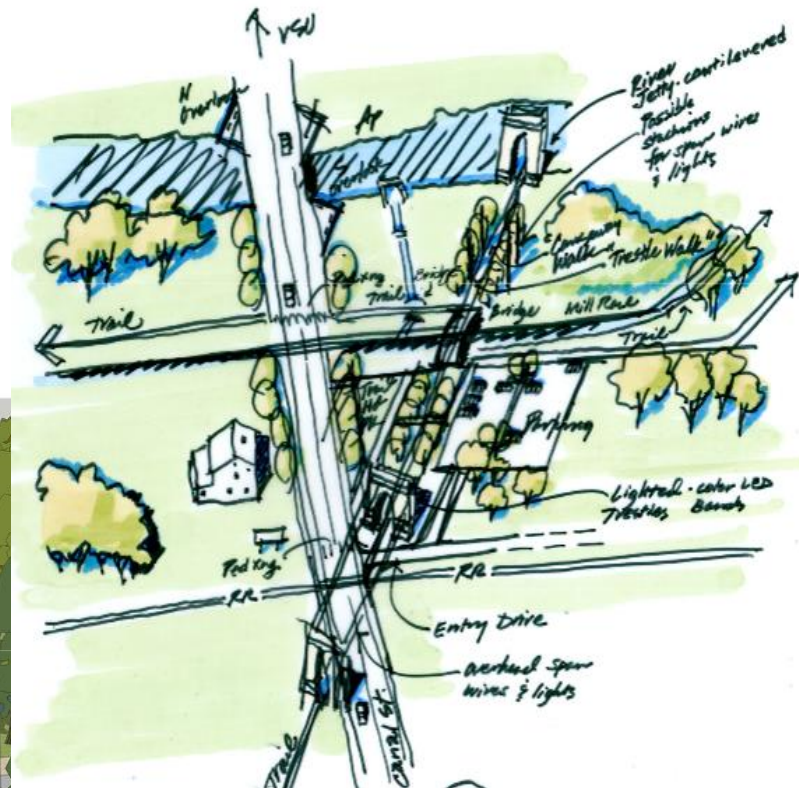
This street name was recently changed to reflect the close proximity to Virginia State University and is highly used by Students and parents coming through the city to gain access to the university. A private development that will be developed on the western side of the street will be a mixed-use development with commercial uses on the first floor. The City is anticipating a lot more vehicular and pedestrian traffic through this corridor and gateway. The city is currently developing the concept for this neighborhood and as a part of that plan a park is being proposed. Just as one enters the City, University Boulevard intersects at a triangle with Grove Avenue and Canal Street. This triangle offers great potential for development as an introduction into the City. This location is also an excellent starting point to access various parts of the City, including the Old Towne district. The Configuration of the intersections of Fleet Street, Grove Avenue, and University Boulevard offers a great opportunity for a gateway into the City geared towards the Virginia State and Southern Chesterfield population.

University Boulevard is a corridor of interest for redevelopment. The City of Petersburg would like to see this corridor become a more pedestrian friendly environment that accents the waterfront and historic nature of Old Towne. This corridor has been identified as a redevelopment corridor to encourage mixed-use.

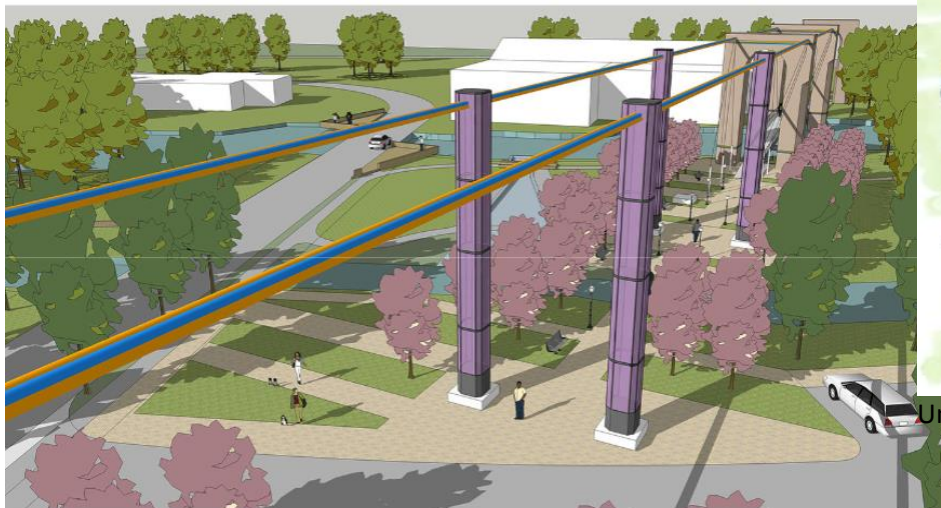
The city has partnered with the Cameron Foundation to improve this gateway. The project is in the design phase and is represented in the illustration below.



Proposed University Boulevard Gateway northview



University Boulevard gateway rendering prepared by Doug Lamson



University Boulevard Gateway



## Goals and Objectives

### Issues, Policy Goals, Objectives

The purpose of the Comprehensive Plan is to set the relevant policies which will help carry out Vision of the City. The intent of the Plan and its recommendations is to improve and protect the health, safety, and welfare of the citizens of Petersburg.

#### Issues

Issues identified through background reports, public input and consultation with community stakeholders are the foundation for formulating policy goals and objectives. It is important to note the identified issues are usually connected to other issues, and solutions may require a comprehensive approach which incorporates innovative and out of the box initiatives. Housing issues may be influenced by the economy while the economy is affected by land use and transportation.

#### Policy Goals

A policy sets forth the principles and values which will guide the actions to be taken by the City of Petersburg to solve identified public issues. In this document policies were formulated through input from the public and community stakeholders.

#### Objectives

Objectives are intended to be the beginning steps to overcome identified issues, and the means to carrying out adopted policies. Objectives are measureable tasks for which specific city departments and managers are responsible and held accountable.

### Housing Issues

- Older city neighborhoods have a concentration of deteriorating, vacant, and blighted housing.
- Renovated or new affordable, safe housing is in short supply.
- Homeownership rates are low. Renters currently have a greater Housing Cost Burden than home owners.
- The City of Petersburg owns a lot of property that is currently vacant land. Reinvestment in housing is not targeted or done at a scale large enough to impact the neighborhoods in decline.
- Historic Districts have a high concentration of blighted and derelict properties.
- Historic Property Owners doing work without the appropriate approvals.

### Housing Policies

**Policy Goal I:** Encourage the renovation or new construction of housing in older neighborhoods in a manner which provides a critical mass to investment and revitalization efforts.

**Objective 1:** Partner with the PRHA or a non-profit CDC to aggressively target priority revitalization and redevelopment efforts.

“Housing Cost Burden” is a standard HUD formula that calculates household income to housing costs. Generally, households who are paying greater than 30% of their income on housing are seen as “burdened” by those costs.



**Policy Goal II:** Act as an equal partner in public/private ventures to revitalize historic, older and downtown neighborhoods and improve the housing stock.

**Objective 1:** Review and identify city-owned properties for redevelopment opportunities in partnership with nonprofit housing agencies and developers.

**Objective 2:** Prioritize infrastructure improvements and CDBG funds to maximize the impact of redevelopment efforts with non-profit housing partners and developers.

**Objective 3:** Utilize local community plans, such as the Battersea Quality of Life Plan, as a guide for City revitalization in neighborhoods identified in the future land use plan.

**Policy Goal III:** Promote a variety of affordable housing types to meet the needs of owners and renters of varying levels of income through partnerships with nonprofits and developers.

**Objective 1:** Prioritize revitalization activities and efforts according to the Comprehensive Plan.

**Objective 2:** Update and take to Planning Commission and Council for action a revised zoning ordinance which includes policies toward allowing for diversity in neighborhood, design standards and varied housing types, and increased densities.

**Policy Goal IV:** Continue to do an inventory in all the Historic Districts to understand where the most critical need exist.

**Objective 1:** Procure the services of Preservation Virginia to complete an inventory for the remaining historic districts not inventoried.

**Objective 2:** Create a Community Land Trust with the assistance of LISC using the Detroit Model. This

**Objective 3:** Continue to seek out educational and financing opportunities for residents owning homes in a historic district or potential homeowners in a historic district.

## Land Use & Transportation Issues

- Vibrant/alternative land uses are needed at Gateways and main neighborhood entrance corridors to improve the city's image.
- Large industrial parcels are not available for the expansion or relocation of manufacturing to Petersburg.
- Land Use and zoning are inconsistent in certain areas of the city.
- Contiguous parcels are not readily available for redevelopment and investment in new/renovated housing.
- No policies or master plan exists for parking in Old Towne and the Central Business District.
- Infrastructure improvements for cars, pedestrians, and bikes are needed in historic neighborhoods as well as new growth areas.
- Public Transit has limited hours and service to/from neighborhoods to regional employment centers.
- Directional sign improvements are needed along entrance corridors and interstates.
- Congestion/lack of road interconnectivity on South Crater Road around the new Southside Regional Medical Center



## Land Use & Transportation Policies

**Policy Goal I:** Promote redevelopment of gateway corridors to have a vibrant mixed-use component.

**Objective 1:** Include in the Zoning Ordinance overlay district guidelines for the Halifax Corridor, Route 36 Corridor, West Washington Street Corridor, University Boulevard Corridor, Commerce Street Corridor and Gateways.

**Policy Goal II:** Promote redevelopment of blighted areas comprehensively through both the Petersburg Housing Authority and the Industrial Development Authority.

**Objective 1:** Overhaul the zoning ordinance to coincide with the Land Use Plan and allow for by-right mixed-use developments on an urban/pedestrian scale incorporating transit oriented and new urbanism principles and design standards.

**Objective 2:** Create an urban design ordinance using the R/UDAT Plan as the guide and tie it to the City's zoning ordinance

**Objective 3:** Coordinate with public works infrastructure and utility improvements based on revitalization and redevelopment initiatives.

**Objective 4:** Continue to utilize CDBG resources within a land use and transportation framework that creates collaboration between City departments and primary stakeholders.

**Policy Goal III:** Promote an efficient, well-marked, and convenient parking network in the central business district and Old Town without compromising aesthetics but accommodating pedestrian and multi-modal transit activity.

**Objective 1:** Undertake a master plan and management effort for parking in the Central Business District.

**Objective 2:** Study the benefit and cost versus expense of maintaining parking meters or a pay parking system.

**Objective 3:** Consider a private/public initiative to construct a parking deck in a strategic location convenient to businesses, entertainment and recreational uses.

**Policy Goal IV:** Provide efficient, frequent, reliable transit service to employment centers.

**Objective 1:** Continue to study and identify route and service improvements to better connect Petersburg residents with employment centers throughout the region.

**Objective 2:** Continue to seek grants to offset the expansion of service cost.

**Policy V:** Promote interconnected pedestrian and road network to reduce "bottle-neck" congestion on major thoroughfares.

**Objective 1:** Identify roadway connections to improve the street grid to reduce "bottle-neck" congestion, such as on South Crater Road and Exit 52.

**Objective 2:** Install traffic lights at the appropriate intersections to manage the traffic flow during peak hours.

## Economic Issues

- A disproportionate number of residents of Petersburg residents go to other localities to shop.
- Petersburg must continue to capitalize on partnerships, such as Fort Lee.



- Petersburg has a shortage of available, marketable industrial land above 50 acres.
- Challenges with the public schools and perception of high crime make attracting investors and developers problematic.
- Perception of the City from current residents.

## Economic Policies

**Policy Goal I:** Assess the skills needed for the industries the City is working to attract, as well as the industries that are currently in the City.

**Objective 1:** Build and strengthen partnerships with regional and local organizations to create meaningful workforce development programs.

**Objective 2:** Design training programs that meet the future and current employer's needs.

**Policy Goal II:** Build partnerships with private sector players, regional and community stakeholder groups to capitalize on significant development opportunities.

**Objective 1:** Continue to work with Virginia's Gateway Region to promote the City's many assets to potential investors.

**Objective 2:** Continue hosting the Executive Roundtable Discussions; expand to include institutions of higher learning and private schools as well as smaller family owned businesses.

**Objective 3:** Review and become familiar with the Strategic Economic Development Plan.

**Objective 4:** Continue to promote the Vision of the City.

**Objective 5:** Create a Vision for the Office of Economic Development.

**Objective 6:** Continue to build significant partnerships with regional agencies such as the Virginia Gateway Region, Ft. Lee and the Cameron Foundation and City businesses.

**Objective 7:** Educate City leaders and staff on redevelopment projects eligible for New Market Tax Credit, and other federal, state and local incentives (see incentives in Appendices).

**Objective 8:** Leverage CDBG monies and stakeholder efforts in specified revitalization areas as identified in the Future Land Use Map.

**Objective 9:** Creatively capitalize on development opportunities at the old hospital site, Titmus and Roper Brothers.

**Policy Goal III:** Promote the assembly of smaller tracts of land through the IDA to create marketable industrial or technology development sites.

**Objective 1:** Work closely with the Assessor's Office and the Office of Planning and Community Development to assemble contiguous parcels of underutilized land for large marketable industrial or development sites.

**Policy Goal IV:** Consider the benefit of expanding the Enterprise Zones to other districts and areas of the City.

**Objective 1:** Apply for an expansion of our current Enterprise Zones and consider adding two additional zones.

**Objective 2:** Create a Business Improvement District for Downtown

**Policy Goal V:** Increase revenue by working with the Planning Department to permit nightclubs and other cultural and





recreational uses by-right in the Zoning Ordinance with the appropriate management and safety contingency plans.

**Objective 1:** promote the Enterprise Zone program.

**Objective 2:** create special tax districts that incentivize cultural arts, and recreational uses in designated areas.

**Objective 3:** Work closely with Cultural Affairs, Arts and Museum Department to establish a Petersburg annual “Film Festival” and other Festivals/events.

**Objective 4:** Reestablish the Petersburg Main Street Program and identify a non-profit to administer the program.

**Objective 5:** In cooperation with the Cultural Affairs, Planning and Community Development, Public Works, and the Police Departments and Petersburg Area Transit to create a plan for a pedestrian street downtown within the Cultural Arts District.

**Objective 6:** Update the zoning ordinance to include this street within the Cultural Arts District detailing by-right uses.

## Parks & Recreation Issues

- Access to the amenities along the Appomattox River.
- No pedestrian trail networks connecting the parks and surrounding communities.
- No level of service standards exist under a current Park & Recreation Master Plan.
- Limited conveniently located neighborhood parks.

## Parks & Recreation Policies

**Policy Goal I:** Upgrade existing park and recreation infrastructure to modern standards and improve natural areas.

**Objective 1:** Create a Park & Recreation Master Plan which a) Identifies priority improvements; b) Evaluates park productivity; c) Recommends action for underperforming parks; d) Furnishes a plan for greenways and trails to connect parks to the surrounding community using existing greenways and space.

**Objective 2:** Add Community/Recreation Centers at strategic north, south, east, and west locations of the City.

**Objective 3:** Expand the ecological education beyond Lee Park and include other locations where programming will allow kids, citizens and visitors to learn about urban ecology, urban agriculture,

**Policy Goal II:** Adopt customized park and recreation facility standards for livable communities and perform regular maintenance on all park and recreation facilities.

**Objective 1:** Develop and apply system-wide design standards for wayfinding, parks and recreation facilities.

**Objective 2:** Develop trails connecting parks and the surrounding community which are mindful of environmental systems, cultural assets, and historic resources.

**Objective 3:** Improve aesthetics through new signage, resource efficient landscaping, storm-water sensitive parking areas, trash and recycling receptacles.

## Community Facility and Infrastructure Issues

- Improved level of services is needed for police in the South Crater Road area around the new Southside Regional Medical Center.



- Areas of the city remain outside the National Fire Protection Associations recommended 6 minute maximum response time.
- There is a lack of sufficient fire protection for Route 460 and the South Crater Road Corridor.
- Community services and partnerships are needed to provide improved employment services to the citizens of Petersburg.
- Some Petersburg public schools are not accredited.
- Much of the City’s infrastructure is in disrepair and needs improving
- Petersburg Circuit Court facilities are outdated and undersized to best meet the needs of the City.

**Community Facility and Infrastructure Policies**

**Policy Goal I:** Secure adequate facility space, equipment, and staff for the courts and police department to provide safety and protection for all areas of the city.

**Objective 1:** Build an additional police station to service the expanding South Crater Road and Route 460 corridors.

**Objective 2:** implement recommendations from the facilities plan that address the changes needed for circuit court facilities.

**Policy Goal II:** Secure adequate fire coverage for all of Petersburg.

**Objective 1:** Redistrict fire zones and build an additional station in the City’s southern and eastern sections of the City to allow for optimum fire response time of 6 minutes.

**Objective 2:** Hire an Emergency Planner to enhance the Office of Emergency Management. The planner will be responsible for NIMS

(National Incident Management System) compliance and submitting grants for public safety.

**Objective 3:** Relocate Farmer Street Station to reduce response time.

**Objective 4:** Create a Department capacity analysis to improve all aspects of public safety delivery

**Policy Goal III:** Improve the school system to have all Petersburg public schools accredited.

**Objective 1:** Continue to work with the State Department of Education and other educational entities to improve schools.  
**Objective 2:** Include the School Administration in the poverty, housing and economic development initiatives.

**Policy Goal IV:** Create an infrastructure regional model for efficient and ecologically sound infrastructure.

**Objective 1:** Develop a plan for the City’s current and future “green” infrastructure.

**Objective 2:** Identify resources for creating open and creative spaces.

**Objective 3:** Create a Citywide master plan for greenways; utilizing resources such as the “rails to trails” initiative.



## Future Land Use

The Future Land Use map is more general in nature than a zoning map and guides future land use decisions, rezoning and special use permits. The Future Land Use categories are similar to those of the Existing Land Use map. However, the future land use categories have been created to address areas determined to be corridors of interest for revitalization efforts, as well as corridors that would be a good match for mixed-use development and uses.

Mixed Uses are intended to accommodate office, institutional, commercial and residential uses in vertical and horizontal developments. It is also ideal for areas which are targeted for redevelopment and revitalization. The intention is to maintain street facades with commercial and professional uses while allowing residential uses to also exist in the development. This will allow flexibility in large scaled development as well as planned unit developments (PUD). This will also allow for the incorporation of New Urbanism principles and neighborhood models as well as Transit Oriented Development types. This mixed-use concept will also incorporate ideas for place-making.

### **Future Land Use Map designations:**

*Low Density Neighborhood*-Conventional single-family homes, row houses, single building duplexes, which are located on individual lots. Low density neighborhoods may also support small-scale neighborhood retail, community facilities and institutions. Uses other than dwellings should be strategically placed and regulated through the zoning ordinance.

*Medium to High Density Neighborhood*- Multifamily (Apartment complexes, condominiums), Mobile Home Parks. Generally includes any types of clustered housing as a part of a larger complex.

*Mixed Use Corridor*-Includes uses such as commercial, retail, professional offices, retail, restaurants, service industry, and personal service uses. Mixed Use Corridors are intended for master planned development with a mixture of housing and commercial uses in the same building or following a new urbanism design scheme.

*Industrial*- Includes both light industrial uses such as light manufacturing or processing of goods. Also includes heavy manufacturing of goods including processing, packaging, treatment of products and materials.

*Active Parks*- Includes large public parks, small neighborhood parks, recreational facilities, sports complexes, sports fields and other recreational areas.

*Passive Park and Urban Agriculture*- Includes constructed greenways, urban trails, and forests, wildlife corridors, conservation easements, as well as productive farms and other facilities that maintain agricultural products or livestock.

*Mixed Use/High Density*-This includes and allows compatible commercial, office, institutional, and residential to be densely mixed horizontally or vertically within a building or community. Areas designated as Mixed-Use High Density shall be adequately planned so as to facilitate architectural cohesion and transportation efficient.



## Development/Revitalization Corridors:

These corridors are focus areas for revitalization, planned future growth, and development opportunities. These areas include a range of housing types with a network of well-connected streets and blocks, public facilities and amenities of a traditional neighborhood of churches, stores, schools all within walking distance. Many of these areas have available vacant land that can be used for infilled development. These focus areas are in close proximity to public transportation and are accessible to our highways and interstates.

The following areas are identified as Development Corridors:

Battersea

University Boulevard

West Washington Street

Halifax Street

Pocahontas Island

## Future Land Use Areas of Interest

Petersburg's future is bright with many opportunities for growth, revitalization, redevelopment and new construction making it a destination city where people are excited to live, work and play.

□ There are several areas designated mixed-use corridors to allow for the appropriate urban scaled development which is transit ready.

□ Due to the close proximity to Fort Lee along US 460 there has been land designated for mixed-use to accommodate appropriate residential and commercial growth. Areas along this corridor remain Industrial to accommodate small manufacturing seeking access along the highway.

□ At Flank Road and Church Road bordering Dinwiddie County there is a Civil War Battlefield (designated as Park and Open Space) which should be preserved, further enriching Petersburg's unique collection of sites important to Civil War history.

□ Route 36 at the entrance to Fort Lee is ideal for redevelopment. The mixed-use designation here is intended to facilitate reinvestment through development and redevelopment in this area creating an attractive and vibrant gateway to Petersburg from the East.

□ Washington Street at I-95 has been designated as a mixed-use area within a revitalization corridor to facilitate redevelopment that provides a pleasant and welcoming introduction to the city for guest passing by on the interstate.

□ University Boulevard very much like Washington Street at I-95 is located in both a mixed-use and revitalization corridor as the City seeks to serve the surrounding neighborhood and serve as the link to Virginia State University. The city aims to have pedestrian and vehicular movement from the University through this corridor as faculty, staff, parents and students come to Petersburg to live and shop.

□ Downtown has a mix of existing uses and historic buildings which are examples of successful mixed-use development that can serve as the advocate for the rest of the city. As the core business hub, this area should continue to foster a healthy mix of retail, professional services, business and residential uses. The downtown mixed-use area encompasses the harbor initiative. The downtown is also a part of the study area for the R/UDAT plan.

□ A specific area of interest has developed in the wake of Federal plans to extend high speed rail service that would connect the Hampton Roads region with current Amtrak service through Petersburg along CSX lines. In the future, this area should have more intensive transit oriented development for areas in and around South Halifax Road, Squirrel Level Road, and Wells Road.



## Future Land Use Map



## Map of Central Business District



Appendices

Plans

Definitions

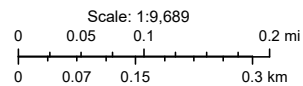
# Henrico St & Richmond Ave SVI 2023

## Social Vulnerability Index

- Low Social Vulnerability
- Moderate Social Vulnerability
- Very High Social Vulnerability



October 25, 2023



William & Mary, Center for Coastal Resources Management (CCRM) at Virginia Institute of Marine Science (VIMS)  
Esri Community Maps Contributors, VGIN, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA Maxar

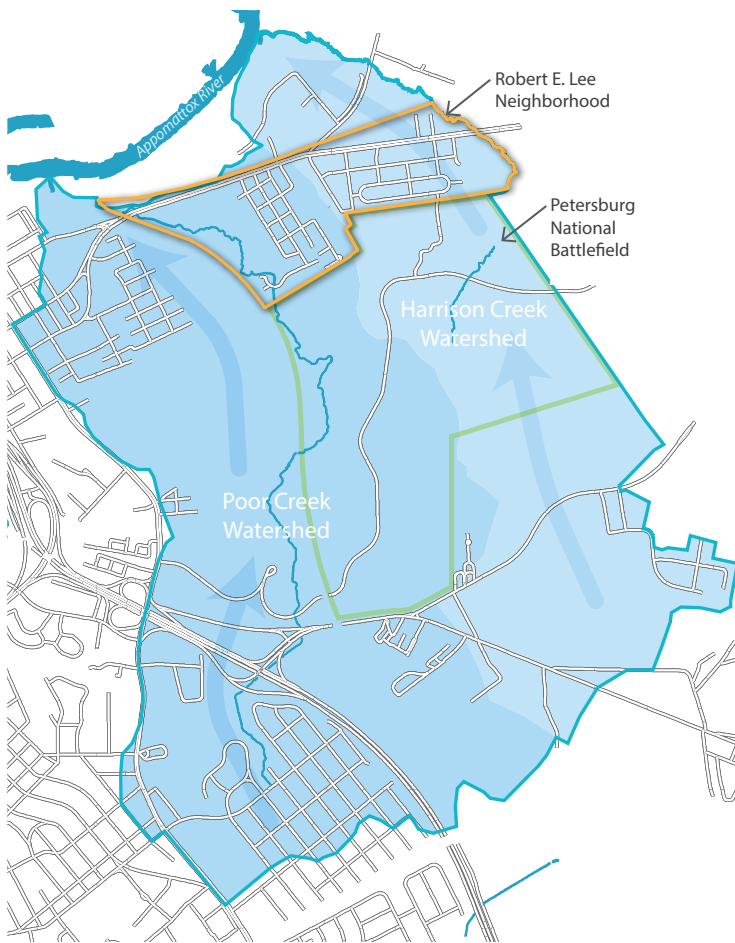
**VIMS** | WILLIAM & MARY  
VIRGINIA INSTITUTE OF MARINE SCIENCE  
CENTER FOR COASTAL RESOURCES MANAGEMENT

**ADAPTVA**





# Petersburg Walkable Watershed Concept Plan



Rain that falls within Poor and Harrison Creek watersheds (shown in blue) flows to Poor Creek or Harrison Creek, then to the Appomattox River and ultimately the Chesapeake Bay.

In urban areas, the stormwater drainage system, which includes a series of underground pipes, open stream channels, street gutters and ditches, can carry pollutants from streets, yards and businesses to the creek.

A walkable watershed includes neighborhood features that improve stormwater and pedestrian safety simultaneously.

## Overview

The Petersburg Walkable Watershed Concept Plan develops a shared vision and set of strategies to address flooding and improve quality of life for the Robert E. Lee (REL) neighborhood. This concept plan was developed in collaboration with the City of Petersburg, James River Association and the REL Neighborhood Watch Association.

The concept plan is based on a walkable watershed approach, which integrates the flow of water and people into a cohesive strategy to improve the overall health of a community and the surrounding watershed.

Through multiple community meetings, surveys, mapping and analysis and input from project partners, this plan identifies opportunities to:

- **Improve chronic flooding** in areas identified by residents.
- **Add on-street features** to reduce traffic speed, litter, and flooding.
- **Increase community connection** to nearby destination, parks and open space.
- **Engage and educate residents** to celebrate nearby waterways and natural resources.

Please visit: [www.walkablewatershed.com](http://www.walkablewatershed.com) or contact Darryl Walker, City of Petersburg at (804) 733-2355 or [dwalker@petersburg-va.org](mailto:dwalker@petersburg-va.org) for more information.

## Project Background

The City of Petersburg partnered with James River Association, Center for Watershed Protection and Skeo Solutions on a Walkable Watershed process in the Robert E. Lee Neighborhood. Funded by the National Fish and Wildlife Foundation, the project focused on training for City staff and community-based planning to identify opportunities to address stormwater using green infrastructure strategies and address related community quality of life goals.

## Community Assets and Challenges

The project team conducted resident surveys in late 2015-early 2016 to identify neighborhood assets and challenges. The project team shared results from the survey and initial existing condition analysis with residents during the REL Neighborhood Watch Association's month meeting on April 12. As part of that meeting, residents were asked to identify and prioritize community assets and challenges - those highlighted in **bold** represent top priorities for participants:

### Assets:

- Quiet residential neighborhood
- **REL Elementary School and youth who are active in the neighborhood**
- **Neighborhood churches and businesses**
- **Neighborhood Watch Association**
- Harrison and Poor Creeks
- Proximity to Appomattox River, Petersburg National Battlefield and other natural areas

### Challenges

- Few sidewalks
- Few play areas
- **Flooding in streets and yards**
- Littering on streets
- Few areas to walk and interact with nature or the creeks
- Perception and awareness of creeks
- **Public safety**
- **Speed of traffic**
- Few public gathering places
- **Home ownership**
- **Street lighting**
- Distance to nearest grocery store
- Few trash cans

## Existing Conditions Summary

Resident input and analysis shows there is a strong connection between existing stormwater infrastructure and where chronic flooding occurs in the neighborhood. The map on the following page identifies:

- Areas prone to flooding as experienced by residents
- Existing stormwater infrastructure and sidewalks
- Neighborhood destinations and primary routes to those destinations

Residents reported that regular flooding during and after storm events cause flooding on many streets in the REL neighborhood, shown in the photos that residents took on the following page. A combination of clogged or under sized storm inlets and lack of sidewalks makes walking difficult in these conditions.

By gaining a better understanding of location specific issues, stormwater infrastructure can be improved using a combination of traditional and green infrastructure or natural drainage strategies. Draft strategies were shared with the REL Neighborhood Watch during their April 12 meeting and based on their input, a refined concept plan was shared on June 14.

The Walkable Watershed Concept Plan on page 5 identifies opportunities to address stormwater management and flooding, improve walkability and access, and increase safety through traffic calming. A key next step will be to conduct a drainage study to better understand existing infrastructure capacity and evaluate the combination of traditional and green infrastructure strategies needed to address stormwater and flooding. The Concept Plan identifies opportunities to integrate walkability, safety, access, and amenities into these infrastructure improvements.






Residents discuss neighborhood assets and challenges.

# EXISTING CONDITIONS



## Existing Conditions

-  Community Destinations
-  Primary Routes
-  Storm Inlet
-  Ditch or Concrete Channel
-  Transit Stops
-  Existing Sidewalks
-  Catch Basin
-  Resident Reported Flooding

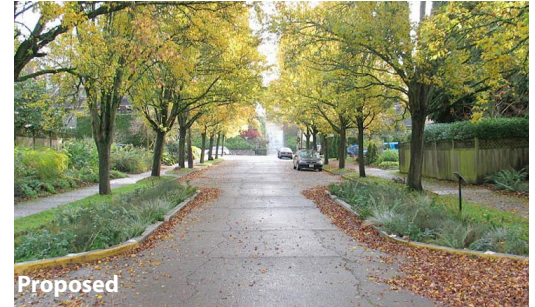


Photos taken by residents document the flooding that occurs during rain events. In the event of heavier rainfall, roads in the neighborhood can be hazardous to drive on due to the depth of stormwater flooding the streets. Especially when stormwater floods impervious areas, it can collect litter, debris and hazardous materials such as oil from roads. These hazardous materials, will eventually drain into storm inlets and ultimately reach the Chesapeake Bay and contribute to water pollution.

## Reduce Flooding through Natural Drainage and Complete Streets

### Primary Routes

- A Slagle Avenue** - Add sidewalk to connect with new sidewalk. Narrow traffic lanes to help slow traffic. Integrate natural drainage strip between sidewalk and streets to absorb stormwater. Include on-street parking on one or both sides of street.
- B Courthouse Avenue** - Widen swale on east side of road. Clean and maintain storm drains. Consider upgrading drainage pipe at Courthouse and Appleton.



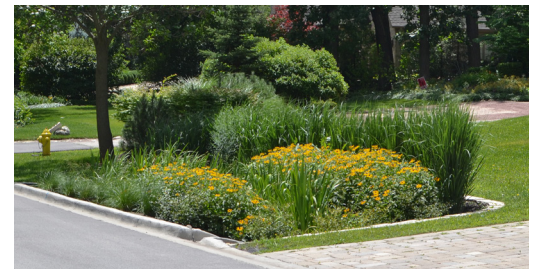
Example of how curb extensions, street parking, and vegetation between sidewalk and street could be added along Slagle Avenue.

### Secondary Routes

- C Monument Avenue** - Consider installing a drainage swale on the west side of the street to allow stormwater to drain off the road and away from homes.
- D Richmond Avenue** - Add pedestrian safety amenities, such as sidewalks, or natural drainage strip where feasible.



Example of a planted swale during rain event



With dense vegetation, absorbent soils, and underground storage capacity, rain gardens help treat stormwater and prevent flooding of homes and streets. Photo courtesy of CNT/RainReady.

### Safe Crossings - Intersection Retrofit

Add natural drainage strategies like a vegetated traffic circle and/or bioretention curb extensions. Integrate bus stop and amenities such as trash cans. Add crosswalks to slow traffic at intersections.

### Swales

Consider installing grassy or planted swales along the edge of the road right of way to catch and hold stormwater during major rain events to reduce flooding. Consider pedestrians and explore adding sidewalks as part of street improvements.

### Stormwater Infrastructure Improvements

Inspect, repair and maintain storm inlets. Consider updating infrastructure to accommodate possible increase in runoff to reduce flooding.

- E Boxwood Court** - Consider moving trash dumpster to reduce trash and litter entering Poor Creek.

### Planted Buffer Along Improved Swale

- F** Coordinate with National Battlefield (NPS) to install a swale or buffer to address flooding in backyards along Whitehill Drive.

### Rain Garden

- G** Consider installing rain garden off Hare Street to reduce on-street stormwater flooding backyards and alley.

## Integrate Public Safety and Enhance Connectivity

### Trail Connecting Pin Oak and Gibbons

- H** Improve route amenities such as overhead lighting and connect to existing trails to create neighborhood walking loop.

### Connect to Existing Trails

Improve walkability and access to community amenities by improving existing trails and connections, including to REL Elementary and National Battlefield access area. Consider planting trees along trails.



Existing entrance into Petersburg National Battlefield at Appleton Street.



## On-Street Opportunities

### Sidewalks and Natural Drainage

- Primary Route
- Secondary Route

### Safe Crossing

- Intersection Retrofit

### Natural Drainage Retrofit

- Swales

### Existing Infrastructure

- Stormwater Infrastructure Improvements

- A** Specific Recommendations

## Off-Street Opportunities

### Natural Drainage Retrofit

- Planted Buffer and Improved Swale
- Rain Garden

### Trails

- Connect to Existing Trails
- On-Street Route
- Trailhead Access

- Existing Sidewalks

- Existing Trails



**Grassy Swale Example**

Grassy swales along streets without sidewalks could address street flooding by providing holding space for stormwater during rain events -- swales are designed to drain after rain event to avoid standing water. Swales can also be designed for ease of maintenance and to minimize trash collection.

## A Hare & Slagle Green Intersection Retrofit

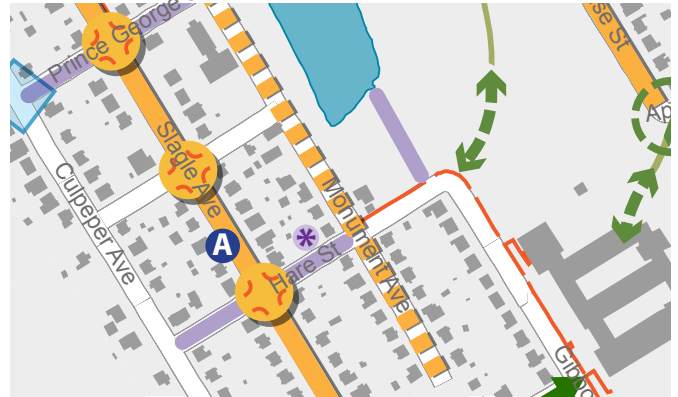
### Current Conditions

- Intersection floods regularly.
- Storm inlets regularly clogged with litter.
- No sidewalks, public trash cans or bus waiting areas.
- Cars regularly speed through intersection.

### Potential Opportunities

*Opportunities to reduce flooding, calm traffic and provide public amenities:*

- Add residential scale traffic circle with vegetation to slow traffic and collect stormwater to reduce flooding.
- Add sidewalks and public transportation waiting area to increase pedestrian safety.
- Include crosswalks at intersection of Slagle and Hare Streets.
- Add public trash can at all public transportation waiting areas to reduce neighborhood litter.



Example of a vegetated traffic circle in a residential neighborhood that slows traffic, collects stormwater and adds aesthetic value. A drainage study will identify whether there is adequate road width and right of way to accommodate a traffic circle.

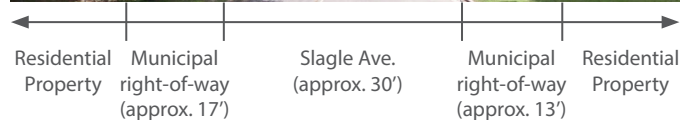
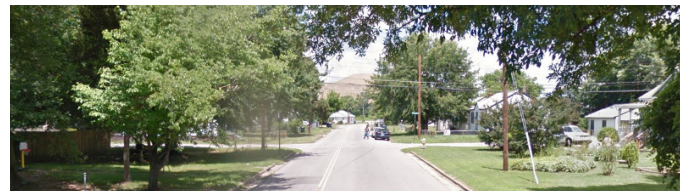
## Complete Street on Slagle and Courthouse

### Current Conditions

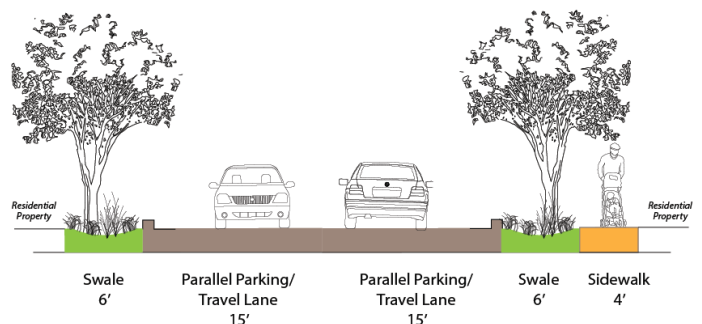
- Main roads lack sidewalks.
- Cars regularly speed on residential roads.
- Regular flooding makes walking, biking and driving unsafe after major storm events.
- Wide residential streets, parking on one or both sides and municipal right-of-way on both sides of street.

### Potential Opportunities

- Add sidewalks on one side of street, crosswalks at intersections, and include additional storm inlets where appropriate.
- Include vegetated bump-outs or swales in municipal right-of-way where appropriate to collect stormwater off-street and calm traffic. For example, with approximately 60' of public right-of-way on Slagle Avenue, there is potential to re-design main roadways to incorporate sidewalks and green infrastructure practices.



Existing Street Dimensions - Slagle Avenue



Example of how a sidewalk and stormwater swales can be incorporated within a portion of the right-of-way.

## F Planted Buffer and Improved Swale

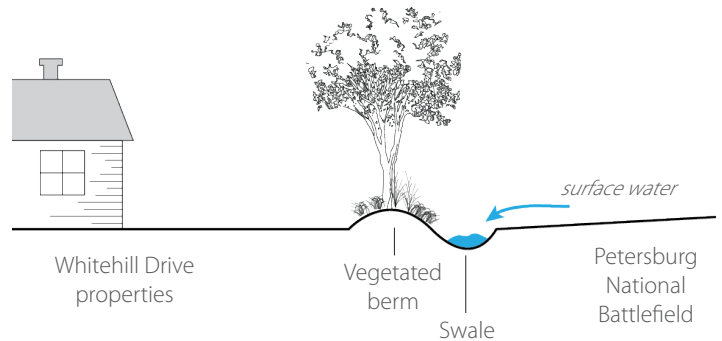
### Current Conditions

- Existing swale on Petersburg National Battlefield is undersized and filled in with tree roots.
- Residential backyards along swale regularly flood, sometimes up to homes.
- Existing stormwater pipe at Henrico Street for swale is undersized.
- Petersburg National Battlefield needs to maintain vegetative buffer for park aesthetics.

### Potential Opportunities

#### *Opportunities to reduce flooding and improve aesthetics:*

- Resize existing swale to increase capacity to hold and move water during storm events.
- Redesign swale to include a vegetated berm on the northern side to prevent flooding in residential backyards.
- Consider planting native evergreen water tolerant shrubs to provide a buffer between park and homes.



A planted buffer along an expanded swale will allow surface water draining from the Petersburg National Battlefield to be collected without flooding residential properties and maintain a visual buffer between residential neighborhood and the park.

## Potential Community Programs

### Adopt a Drain Program

Develop an 'Adopt a Drain' program, modeled from other programs around the country. Residents adopt a drain and help keep it clear of trash and debris and report any issues to the City. The program connects residents with their local utility staff. The neighborhood's ~70 drains could be adopted by resident volunteers. Tools could be provided including rakes, brooms, trash bags, safety vests and shovels could be requested via grants. Program could be expanded to include swales or other natural drainage features.



### Litter and Debris Reduction

Coordinate with community organizations on education and outreach on:

- promoting litter prevention and removal
- organizing community clean up days
- installing public trash cans and signs that celebrate Poor Creek, Harrison Creek and the Appomattox River.

### Public Art as Cue to Care/Education

Work with local artists to design storm drain art to illustrate that rainwater drains to local waterways. Engage residents in the design and identifying key locations for storm drain art and/or storm drain markers.



Photos: (top) residents can Adopt-a-Drain and place medallions on top to educate the community about where stormwater goes; (bottom) public art can be an educational tool to promote awareness and stewardship.

## Next Steps

Key next steps include securing funding for a drainage study to better understand infrastructure capacity and design solutions. The following principles for implementation can guide next steps for moving forward.

- **Build Partnerships** - Strengthen existing and develop new partnerships between federal, state and local governments and community organizations for implementation and stewardship.
- **Grow Community Stewardship** - Continue to grow and foster community stewardship through outreach, education and opportunities for community involvement.
- **Engage Youth** - Build on existing youth programs and initiatives to engage youth in environmental education opportunities. As projects move forward, invite youth to participate in the design process and in the designing and building of outdoor play and learning areas.
- **Seek Funding** - Develop a plan to seek funding, including a list of potential grants and associated deadlines. Assemble teams early to develop winning proposals. Continue to seek opportunities that cross programs and initiatives to leverage funding for projects.
- **Phase Projects Over Time** - While some recommendations may be implemented in the near term, some projects will need to be phased over time. Develop an action list to coordinate initiatives and projects among partners. Continue to refine ideas during the design process.
- **Celebrate Successes!** - Sustain momentum and support by celebrating successes along the way.

## Potential Partners and Funding Sources

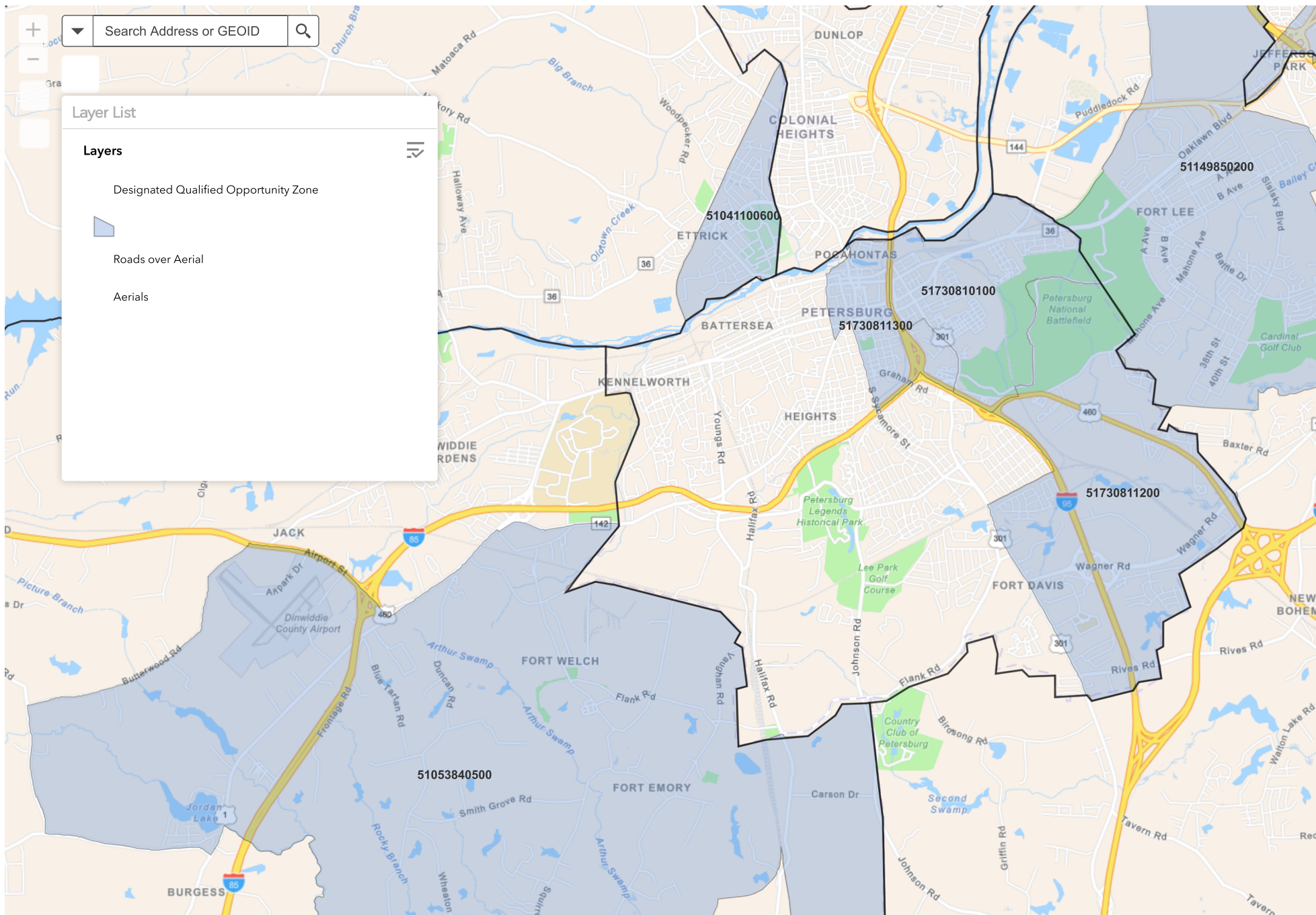
The following organizations have been identified as potential partners and collaborators with the REL Neighborhood to address community goals and address stormwater concerns:

- City of Petersburg (Department of Parks & Leisure, Public Works, Department of Health)
- National Parks Conservation Association
- National Park Service
- Robert E Lee Elementary Parent Teacher Association
- Friends of the Lower Appomattox River
- Fort Lee - Corps Volunteer Coordinator
- Habitat for Humanity
- Project Home
- Petersburg Area Community Development Corporation
- Crater Planning District
- Cameron Foundation
- Faith & Hope Baptist Church
- WOW Camp
- Boy Scouts of America - Area troops
- Petersburg City Council - Ward 1 Councilperson

Potential Funding Sources	Deadlines and Funding
National Fish and Wildlife Foundation <i>Innovative Nutrient and Sediment Reduction Grant</i>	Up to \$750,000. The proposal submitted by James River Association in May 2016 for drainage study, coalition building, and adopt a drain pilot program was not awarded. Reapply in Spring 2017.
National Park Service <i>Park Project Planning</i>	As part of their annual budget planning, Petersburg National Battlefield can apply to NPS for funding for specific projects, this could include funds to address the swale project (see H on Concept Plan). A drainage study or further assessment of this area could inform the design of this drainage system.
City of Petersburg <i>Community Development Block Grant</i>	Up to \$600,000 is awarded to Petersburg each year from U.S. Housing and Urban Development. Deadline for proposals is the second Friday in January each year.

For more information about the project, please visit: [www.walkablewatershed.com](http://www.walkablewatershed.com) or contact Darryl Walker, City of Petersburg at (804) 733-2355 or [dwalker@petersburg-va.org](mailto:dwalker@petersburg-va.org).





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# City of Petersburg: Qualified Opportunity Zones



# City of Petersburg

Office of the City Manager  
135 North Union Street  
Petersburg, Virginia 23803

(804) 733-2301  
Fax 732-9212  
TDD 733-8003

November 12, 2023

Mr. Matthew Wells  
Director of Dam Safety and Floodplain Management  
Virginia Department of Conservation and Recreation  
600 East Main Street, 24<sup>th</sup> Floor  
Richmond, VA 23219

RE: Authorization of City of Petersburg CFPF Project Application ID 1943

Dear Mr. Wells and Members of the CFPF Review Team:

The City of Petersburg has assembled the attached Project grant application to request Community Flood Preparedness Fund assistance to implement the Henrico Street Drainage Improvement project. This project represents significant progress in the City's long-term efforts with project partners, James River Association, to address localized flooding in the Lakemont neighborhood. The City and James River Association are currently in the process of developing construction documents for the implementation of the Henrico Street Drainage Improvement project using grant funds from the National Fish and Wildlife Foundation and matching funds from the City. Funding support from the Community Flood Preparedness Fund will enable the City to procure a construction contractor to complete the stormwater system upgrades.

As Petersburg is a documented low-income geographic area, and the project site is within a designated Qualified Opportunity Zone with a high social vulnerability index score, the City respectfully requests full funding and a waiver to match funds for this project. Please accept this letter as my authorization of the request for CFPF assistance to enable Petersburg to make significant progress toward Resilience and the equitable management of our floodplains.

Sincerely,

A handwritten signature in blue ink, which appears to read "John M. Altman, Jr.", is written over a circular stamp or seal.

John M. Altman, Jr.  
City Manager



November 8, 2023

Mr. Matthew Wells  
Director of the Virginia Department of Conservation and Recreation  
Virginia Department of Conservation and Recreation  
600 E. Main Street, 24<sup>th</sup> Floor  
Richmond, VA 23219

Dear Mr. Wells and Members of the CFPF Review Team:

As a close partner of the City of Petersburg's Stormwater Management Program for over a decade, the James River Association (JRA) strongly supports the Petersburg's application for Community Flood Preparedness Funds to implement the Henrico Street Drainage Improvements project.

JRA's collaborative efforts with City of Petersburg's Stormwater Management Program have focused on community engagement in the city's Lakemont neighborhood and began with a Walkable Watershed Study that led to the Lakemont Neighborhood Drainage Study. Since the completion of the drainage study in 2019, JRA has been instrumental in securing funding to further study drainage in the neighborhood and implement projects that reduce flooding caused by poor drainage. Recent grant awards from the National Fish and Wildlife Foundation and Chesapeake Bay Trust are yielding positive results for residents. JRA successfully spearheaded the implementation of the Culpeper Avenue Storm Sewer Extension project in 2021, which alleviated flooding through the realignment of the storm sewer system and featured a hydrodynamic separator that improves water quality. JRA is actively assisting Petersburg with temporary construction easements to implement a Grassy Swale green infrastructure project and overseeing design of the Henrico Street Drainage Improvement project.

The Henrico Street Drainage Improvements project represents substantial progress in addressing one of the neighborhood's most problematic sources of flooding by establishing a new conveyance system and outfall. JRA strongly supports Petersburg's application for assistance to complete construction of the Henrico Street Drainage Improvements project. If you have any questions about JRA's support of Petersburg's application, please contact me at [jdoyle@thejamesriver.org](mailto:jdoyle@thejamesriver.org) or (804) 543-5479.

Sincerely,

A handwritten signature in black ink, appearing to read "Justin Doyle".

Mr. Justin Doyle  
Director of Community Conservation



November 12, 2023

Mr. Matthew Wells  
Director of Dam Safety and Floodplain Management  
Virginia Department of Conservation and Recreation  
600 East Main Street, 24<sup>th</sup> Floor  
Richmond, VA 23219

Dear Mr. Wells and Members of the CFPF Review Team,

Governor Glenn Youngkin launched the Partnership for Petersburg initiative with state, local, community, and faith leaders to build relationships to foster positive change through a comprehensive approach. With support from the Commonwealth's resources, the Partnership's mission is to help Petersburg become one of the best cities to live, work, and raise a family.

The Partnership for Petersburg is a holistic partnership that brings together more than 50 initiatives under eight pillars to make a significant difference in the quality of life of Petersburg's citizens, as well as the economic health of the City. It is also the Governor's hope that the Partnership can become a model for work within other localities across the Commonwealth.

The program includes initiatives in Agriculture and Forestry, Commonwealth, Commerce and Trade, Education, Health and Human Resources, Labor, Public Safety, Transportation, and Veterans Affairs.

The Partnership for Petersburg supports the City's five (5) grant applications for Community Flood Preparedness Funds, including capacity building, a study, and projects, all consistent with the Partnership's mission. Thank you for considering supporting the City of Petersburg.

Sincerely,

A handwritten signature in blue ink, appearing to read "Garrison Coward".

Garrison Coward  
Senior Advisor, Governor of Virginia  
Partnership for Petersburg

# BATTLEFIELD DRAINAGE IMPROVEMENTS PRELIMINARY ENGINEERING REPORT

September 15, 2023



## PREPARED BY:

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## Appendices

- Appendix A. Existing Conditions
- Appendix B. Recommendations for Silver Jacket Funding
- Appendix C. Presentation of Conceptual Alignments Studied
- Appendix D. Hydraulic Summary of Scenarios

## Section 1.0 Introduction and Purpose

The City of Petersburg and its partners, Timmons Group and James River Association, have been studying, designing, and implementing drainage improvement projects in the Lakemont and Whitehill neighborhoods for a decade. Some areas of the Whitehill neighborhood experience localized flooding caused by stormwater runoff. The purpose of this report is to summarize findings from a preliminary engineering study to determine the best alignment for implementation of storm sewer system improvements for the Battlefield Flood Remediation and Drainage Improvements project (Phase 1). At the completion of Phase 1, Timmons Group will prepare and submit a proposal for engineering services to develop construction documents to implement the preferred alignment (Phase 2). At the completion of Phase 2, the City will have a “shovel ready” drainage improvement project ready for implementation, i.e., approved and permitted construction documents ready for contractor procurement. Summarized in the following report are the study findings and recommendations for next steps.

## Section 2.0 Methodology

Hydrology was developed using the Rational Method, VDOT’s preferred methodology for storm sewer design. Hydraulic analysis was performed using Ensoft’s PipeSoftVA 2.1 to provide hydraulic output in the accepted VDOT forms LD-229 and LD-347, as provided in the Appendix. Conceptual alternatives were developed in accordance with Virginia Department of Transportation (VDOT) standards and guidance for storm sewer design utilizing the following primary resources:

- *VDOT Drainage Manual: [Location and Design Division - Location and Design - Business | Virginia Department of Transportation \(virginiadot.org\)](#)*, and
- *VDOT Road and Bridge Standards: [Road and Bridge Standards - Location and Design - Business | Virginia Department of Transportation](#)*.

## Section 3.0 Project Nomenclature

Presented in **Figure 1** is a graphic for reference of terminology used in this report to refer to different drainage systems within the Whitehill neighborhood.



**Figure 1. Storm Sewer Systems in the Whitehill neighborhood.**

## Section 4.0 Summary of Findings

### 3.1 Inventory

Inventory of infrastructure assets for this project was more challenging than anticipated. Timmons Group survey field crews had difficulty accessing the storm sewer and sanitary sewer assets within the project area due to the age of infrastructure. City crews assisted with access for many structures, including pumping debris to clean the structures and assistance with lifting heavy concrete tops. The collected survey data was provided to project partners once complete and is included in Appendix A. Existing Conditions. Below are some notable findings from the inventory task:

- The current version of Lidar geospatial topographic data available for download at VGIN, the Virginia Geographic Information Network, ([Virginia LiDAR Downloads \(arcgis.com\)](http://VirginiaLiDARDownloads.arcgis.com)) is detailed and generally accurate, as verified by collected field survey data. This data is used to supplement limited survey data collected as part of this project to further analysis and make informed decisions.
- The drainage patterns on the Petersburg National Battlefield property (U.S. National Park Service) are somewhat ill-defined due to relatively flat topography; however, concentrated conveyance systems were identified, as illustrated on the exhibits presented in Appendix A. The swales converge at the rear of 2012 S. Whitehill Drive (illustrated in **Figure 2**) and are then routed to the west along the rear/side of several lots before entering a 12" diameter concrete pipe at the intersection of Appleton Street and Henrico Street.



*Figure 2. Convergence of Drainage Swales at the Rear of 2012 S. Whitehill Drive.*



The existing storm sewer system is undersized (many 12" diameter pipes) and shallow.

- There are elliptical (oval) stormwater corrugated metal pipes (CMP) that are likely in place due to mitigate conflicts with the sanitary sewer system.
- The outfall of the S. Whitehill Drive storm sewer system that discharges to the southeast of the study area was not initially field located by survey crews; however, during a subsequent field investigation, members of the project team observed a potential outfall along an un-named tributary to Harrison Creek, a tributary of the Appomattox River. A follow-up audible investigation was conducted by Timmons Group field crews to confirm pipe connectivity to the S. Whitehill Drive storm sewer system. Based on the observed alignments of storm pipe, it is likely that a buried/submerged structure is located near/within a ponded area denoted on the survey. The location of the buried/submerged structure was approximated by following the property line between 2308 and 2312 S. Whitehill Drive and the perceived alignment of the open outfall along the un-named tributary on Battlefield property. Based on the results of the audible investigation, the engineering team proceeded with analyses under the assumption that the pipe end located in the field is the outfall of the existing S. Whitehill Drive storm sewer system, as pictured below in **Figure 3**.



**Figure 3. S. Whitehill Drive Storm Sewer System Outfall.**

- The City outfall of the existing Henrico Street system (24" diameter reinforced concrete pipe, RCP, and 42" diameter RCP) is larger than the crossing under the Norfolk and Western Railroad less than 5' away (18" diameter RCP and 42" diameter RCP, shown below in **Figure 4**). This outfall configuration is hydraulically inefficient as there is decreasing conveyance in the downstream direction of flow. Further, there are several crossings downstream of the railroad crossing, which limit the extent of feasible upgrades/increase to hydraulic capacity of the existing Henrico Street system.



*Figure 4. Norfolk and Western Railroad Crossing of Ex. Henrico St Storm Sewer System.*

### 3.2 Field Investigations and Collaboration

Several site visits were conducted to supplement the inventory data and to better understand field conditions. The team also met with several stakeholders and potential partners for collaboration. The following is a chronological summary of events.

- January 5, 2023 – A kick off meeting was held with representatives from the City, James River Association, Timmons Group engineering and field crews, and Petersburg National Battlefield (NPS-Battlefield) staff.
- January 7 – March 31, 2023, Timmons Group field crews were on-site collecting inventory and topography data. (Data was processed and provided to the team on May 26, 2023).
- February 13, 2023 – A meeting was held on-site and virtually with representatives from NPS, NPS-Battlefield, VA Department of Historic Resources, James River Association and Timmons

Group. During the meeting, the permitting process for working on Federal lands, including the Archaeological Resources Protection Act (ARPA) permit process, was reviewed. The following links were provided with additional information:

- [Series: NPS Archeology Guide: Permits for Archeological Investigation](#)
- [Permit for Archeological Investigation Application Form \(U.S. National Park Service\) \(nps.gov\)](#)
- April 11, 2023 – Representatives from James River Association and Timmons Group met with the property owner(s) and their representatives to discuss the project and present some ideas for their consideration. While on their property, the study team was able to fully assess the extent of improvements adjacent to and along the property line that would be impacted by potential construction, such as an above ground pool, concrete patio, and several landscaping features. In addition to physical improvements, observations were made regarding the distance between the two residential structures and the feasibility of construction a storm sewer within the tight corridor. The presence of public and private utility conflicts was noted, including a power pole and sanitary manhole, both near the right-of-way at the property line between 2008 and 2012 S. Whitehill Drive. The residents expressed concern and reservations about moving forward with the project impacting their property but expressed strong support for improvements along Henrico Street.
- April 13, 2023 – Timmons Group field crews conducted an audible investigation to confirm the location of the S. Whitehill Drive outfall.
- June 30, 2023 – A meeting was held between the City and the United States Army Corps of Engineers to discuss the Silver Jacket Funding Opportunity. Additional organizations were invited to attend including the Virginia Department of Conservation and Recreation, and the Virginia Department of Emergency Management. Timmons Group attended the meeting on behalf of the City to provide a project status update with interim findings and make recommendations for future phases that could be considered for study utilizing the Silver Jackets funding. The information prepared and shared is provided in Appendix B.
- August 9, 2023 – A final field visit was conducted by Timmons Group and James River Association to confirm assumptions regarding existing storm sewer infrastructure outside of the initial study limits, verify the existing Henrico Street outfall, inspect a third potential outfall site, and confirm the drainage area delineation and assumptions. Standing water was observed in the inlets at Courthouse Road and Richmond Avenue. The inlet on private property 1931 Richmond Avenue has sink holes around the perimeter indicating failure of the structure at the connection to the storm sewer below grade. Just downstream of the inlet, rotten plywood was noted that appeared to be in line with the top of the storm sewer. Observations indicate that the storm sewer pipe is crushed/broken likely causing the standing water observed upstream.

### 3.3 Battlefield Property Drainage and Historic Drainage Patterns

The total drainage area to the 12" diameter concrete pipe opening at the southern end of Henrico Street along Appleton Street is 58.43 acres, the majority of which is Petersburg National Battlefield property. Though much of the property is undeveloped, forested area, there are many concentrated conveyance channels observed which convey stormwater runoff from the Battlefield property. Further, portions of the Battlefield are considered wetland areas, presumed to have poorly draining soils as evidenced by previous studies and field observations; thus, increasing the volume of stormwater runoff. A preliminary drainage map is presented in Appendix B. Also included in Appendix B are two historic topographical maps, one dated July 1894, and the other dated 1946 and stamped November 7, 1949.

According to historic topographic maps, there was a stream channel on the Battlefield property in 1894. However, the map from the 1940s does not show the stream, nor is the stream present today. Presumably the stream was filled sometime between the 1894 map and the 1940s. Presented in **Figure 5**, is the

current GIS data overlaid on the 1894 topographic map. The railroad, Washington Street, Courthouse Street, and Siege Road on the Battlefield property are all appropriate references that are still in place today. While the alignment isn't exact, one can confidently determine the presence of a stream south of the Whitehill neighborhood that ran from west to east and discharged to Harrison Creek.

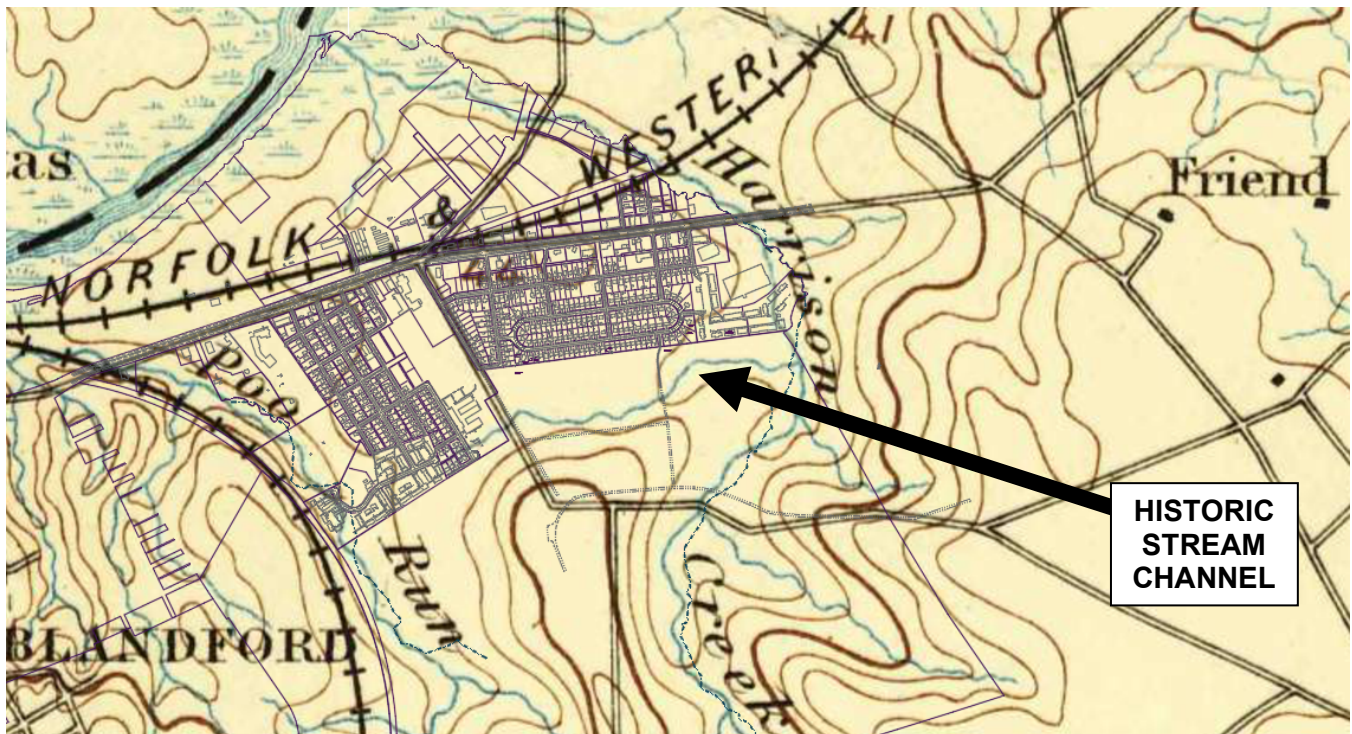


Figure 5. Excerpt of Historic Topographic Map (c. 1894) Relative to Current GIS Data.

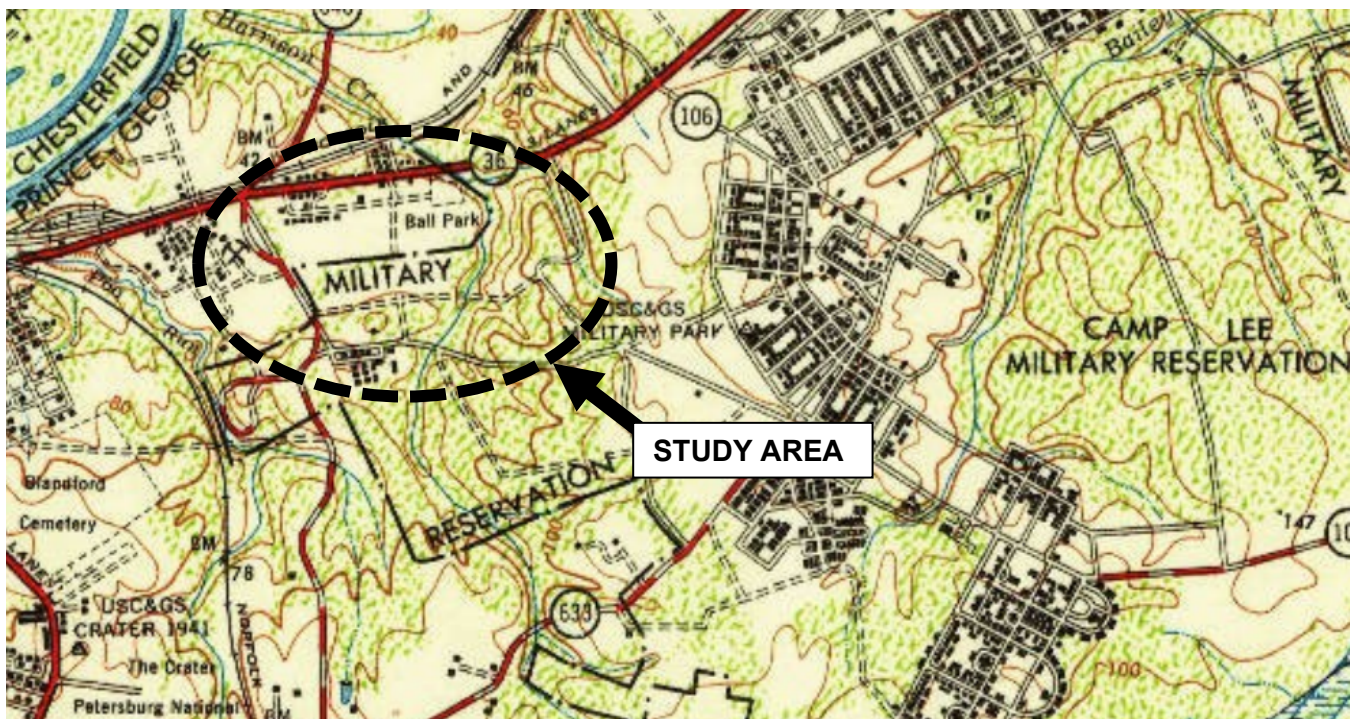


Figure 6. Historic Topographic Map from the 1940s.

Outlined in a black oval in **Figure 6** above is the approximate project study area. Though hidden by the work “Military” of which identifies the Military Reservation boundary, there does not appear to be a blue line indicating stream in the 1940s. Since the amount of runoff from the Battlefield property is a well-documented source of flooding on adjacent Whitehill neighborhood properties, it may be worthwhile to analyze the potential of restoring historic hydrology patterns and re-establishing or renewing channel/wetland function on Battlefield property to Harrison Creek.

### 3.4 Preliminary Engineering – Conceptual Storm Sewer Design

Initially, the intent of the project was to explore conceptual engineering design to collect stormwater runoff from Battlefield property at or near the rear lot line of 2008 and 2012 S. Whitehill Drive and convey that runoff via a storm sewer system to the right-of-way. Once in the right-of-way, the City could implement and manage a drainage improvement project that connected to either the existing S. Whitehill Drive storm sewer system that outfalls on Battlefield property or the existing Henrico Street System that outfalls just upstream (south) of the Norfolk and Western Railroad. Timmons Group created both alternatives and began to explore scenarios for implementation considering the following three primary factors:

- 1) Constructability – Storm sewer systems, per VDOT standards, must be designed to the following minimum criteria:
  - a. 0.2% longitudinal slope
  - b. 0.1’ drop at each structure (structure distances are determined by pipe diameter)
  - c. Minimum of 1’ of cover over pipes
  - d. Minimum constructible height of structures
  - e. Minimum 15” diameter reinforced concrete pipe for use in public right-of-way
- 2) Hydraulic Design Parameters
  - a. 10-year design storm with no overtopping into the roadway
- 3) Constraints
  - a. Public utilities, specifically gravity sanitary sewer constraints
  - b. Private utilities such as power and communications
  - c. Land-owner coordination/easement acquisition

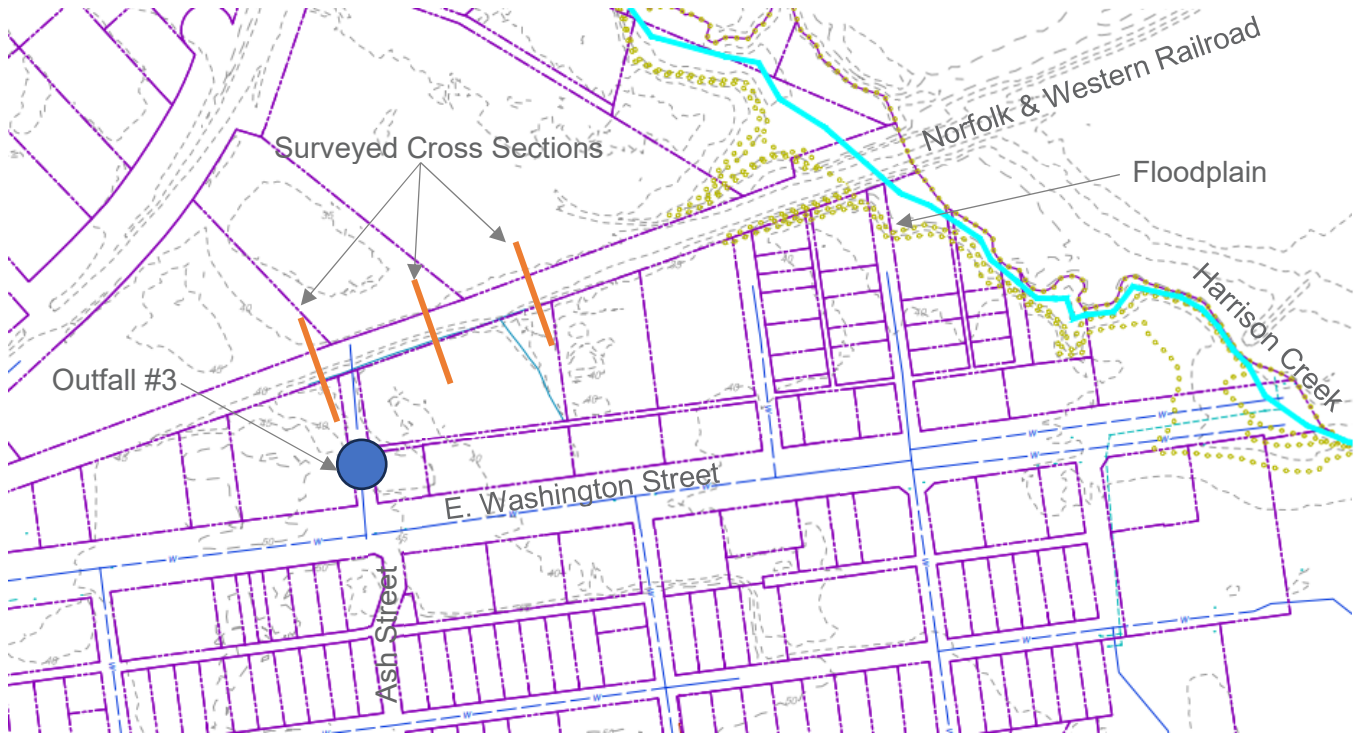
While other factors must be considered for successful project implementation, the three items outlined above were the primary drivers for this conceptual analysis. Presented in Appendix C is a drainage area map, delineated into sub-watersheds for use in the analysis. Following the Drainage Area Map in Appendix C are conceptual layouts for three primary storm sewer alignments: Henrico Street to the existing outfall under the railroad track, S. Whitehill Drive to the existing outfall on Battlefield property, and Henrico Street to a new outfall on Ash Street right-of-way (owned by the City).

The conceptual layouts and profiles presented in Appendix C are provided to visually demonstrate some of the many design factors considered above. Arguably the most notable constraints with regards to constructability for any of the alignments considered are: a) limited available elevation (height) for pipe and structure construction, and b) conflicts with the sanitary sewer main including unknown lateral tie-ins. Another observation, illustrated by the existing ground profile along each conceptual alignment, is that much of the Whitehill neighborhood is located in a topographical low point. Stormwater runoff that flows from higher elevations to lower elevations is collected in the center of the profiles and must accumulate before spilling over to receiving surface water systems (streams and open channels). In conclusion, underground conveyance via a functioning storm sewer system is critical to alleviating localized flooding in the Whitehill neighborhood.

Presented in Appendix D is a tabular summary of some of the alternative scenarios considered. In summary, there is not a constructible option for conveying the stormwater runoff from the Battlefield property in the 10-year design storm event to either of the initial outfalls considered. Many additional

scenarios were then analyzed to see if a constructible option could be identified if drainage from Battlefield property was managed some other way, either through the study mentioned in Section 3.3 or otherwise.

A topographical low area was identified at the onset of the study that eventually forms a channel and discharges to Harrison Creek on the southern side of the railroad within a FEMA mapped floodplain. After conceptual design of the initial two alignments proved futile, Timmons Group decided to evaluate the topographical low in the Ash Street right-of-way as a potential new outfall, Outfall #3. As Timmons Group's field survey teams have already collected cross section data at three locations, illustrated below in **Figure 7**, channel adequacy could be determined to assess the location's suitability as a potential outfall.



**Figure 7. Potential Outfall #3 in Relation to Floodplain and Surveyed Cross Sections.**

Illustrated in **Figure 8** below, is Cross Section 1, which demonstrates that at elevation 42', the channel has the capacity to convey 593 cubic feet per section. Elevation 42 is significant, not only because that water surface elevation provides adequate freeboard for the railroad but also because that elevation is lower than the ground surface in Whitehill neighborhood. This analysis must be finalized during design to account for the overall existing drainage area to ensure no detrimental impacts or changes to the floodplain occur.

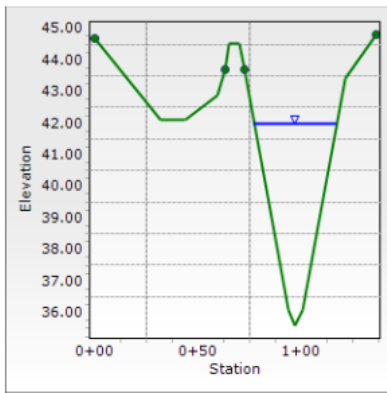


Figure 8. Cross Section of Outfall #3 Receiving Channel.

## Section 4.0 Recommendations

### 4.1 Henrico Street Drainage Improvements

Timmons Group recommends proceeding with the design phase (Phase 2) to implement the Henrico Street Drainage Improvement project from Outfall #3 at Ash Street north of E. Washington Street, along E. Washington Street and along Henrico Street to the Battlefield property. Since the existing 12" diameter pipe functions like an outlet control structure for a detention basin, there may be environmental permitting ramifications for increasing the hydraulic capacity of that opening. Further, the opening may be on Petersburg National Battlefield property. It should be determined prior to scoping the final design, whether the City wishes to pursue upgrades to the hydraulic capacity of the existing 12" diameter pipe, or conversely, if the existing pipe will tie into the new system, which could begin in the right-of-way. If the existing 12" diameter pipe is to tie-in to a new system, Timmons Group recommends analyzing/designing a large, 10-20' long curb inlet along the frontage of 73 Henrico Street to provide overflow capacity and capture stormwater runoff yielded by the Battlefield property.

A preliminary hydraulic analysis was performed for a trunkline for this scenario, using some broad assumptions, and it was determined that the required pipe diameters range from 36" to 48" diameter reinforced concrete pipe at the outfall. While this scenario does not fully meet the design storm level of service (10-year), it does provide the maximum relief of flooding and substantially improves existing flooding conditions. A preliminary alignment was determined for the drainage improvement project, and it was determined that conflicts with the sanitary sewer system must be resolved before the project can be constructed. The following is a summary of recommended tasks for the Phase 2 engineering design proposal:

- Field survey along the alignment to include topographic data, property research, location of physical improvements.
- Subsurface utility location and designation
- Wetland delineation and environmental permitting
- Engineering design and construction document preparation
- Petersburg National Battlefield – NPS coordination/ARPA permitting
- Coordination with VDOT
- Utility coordination (Dominion VA Power)
- Sanitary sewer conflict resolution
- Floodplain analysis
- Bid documents and technical specifications
- Quantities and cost estimation
- Easement acquisition

- Bidding and contractor procurement assistance
- Construction administration

Additional tasks may be required, such as structural engineering for any non-standard hydraulic structures, and geotechnical investigations, but the extent of those services are presently unknown.

#### **4.2 Richmond Avenue Drainage Improvements**

Failure of the existing storm sewer system between Richmond Avenue and the outfall at the crossing under the railroad track was observed. If the recommendations for the Henrico Street Drainage Improvement described in Section 4.1 are implemented, it is recommended that the remainder of the existing system be updated to current design standards. This separate and distinct project could meet current design standards due to the re-direction of much of the existing contributing drainage area of the existing Henrico Street storm sewer system. The proposed Richmond Avenue Drainage Improvement project includes inlets at Courthouse Road and Richmond Avenue, storm sewer system between homes on Richmond Avenue north to E. Washington Street, and several connections to commercial properties along E. Washington Street to outfall. This is a separate and distinct project.

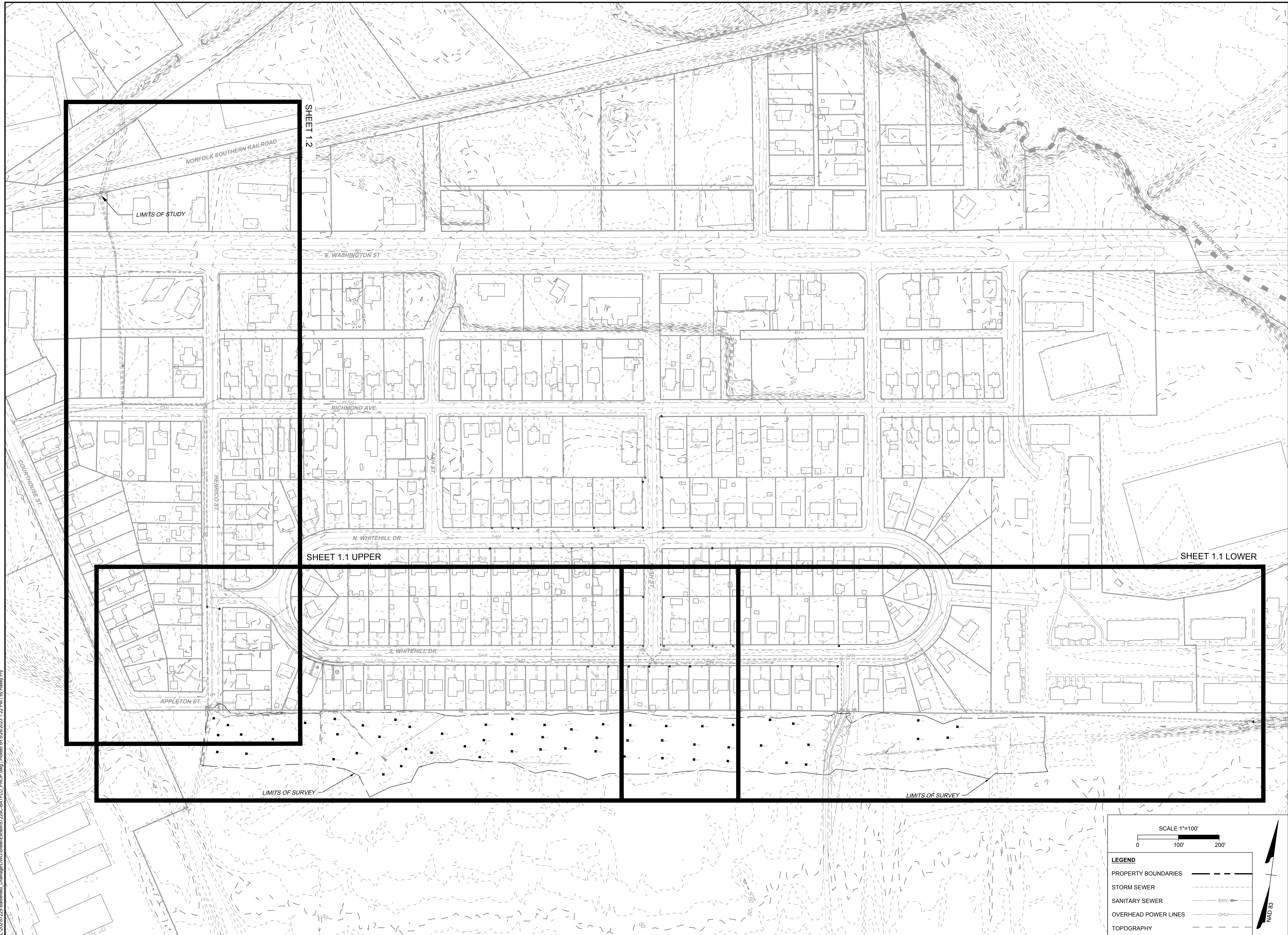
#### **4.3 S. Whitehill Drive Drainage Improvements**

It was determined that the existing storm sewer system along S. Whitehill Drive does not have adequate capacity to meet current design standards. It was further determined, during this study, that upgrades to the outfall of the existing system on Petersburg National Battlefield property could be feasible given the existing alignment, invert elevations, and pipe diameters of the system. However, extension of the existing S. Whitehill Drive storm sewer system upstream, westward along S. Whitehill Drive, to capture and convey subject drainage from the Battlefield property between 2008 and 2012 S. Whitehill Drive is not feasible. The hydraulic requirements of such a storm sewer system would negate its constructability. It is noted that the proposed N. Whitehill Drive Drainage Improvement project presently ties into the existing S. Whitehill Drive storm sewer system, but that project, as currently designed, does not meet the 10-year storm level of service. It was determined through this study that if outfall upgrades to the existing S. Whitehill Drive storm sewer system are made, the N. Whitehill Drive system could be re-designed to meet 10-year storm level of service. Upgrades to the outfall on Battlefield property are subject to federal requirements, likely including ARPA permitting. The City may consider exploring the potential to upgrade the entire system to current design standards.



# Appendix A

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**LEGEND**

- PROPERTY BOUNDARIES
- STORM SEWER
- SANITARY SEWER
- OVERHEAD POWER LINES
- TOPOGRAPHY

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DESIGNED BY  
H. FRY  
CHECKED BY  
A. CREEL  
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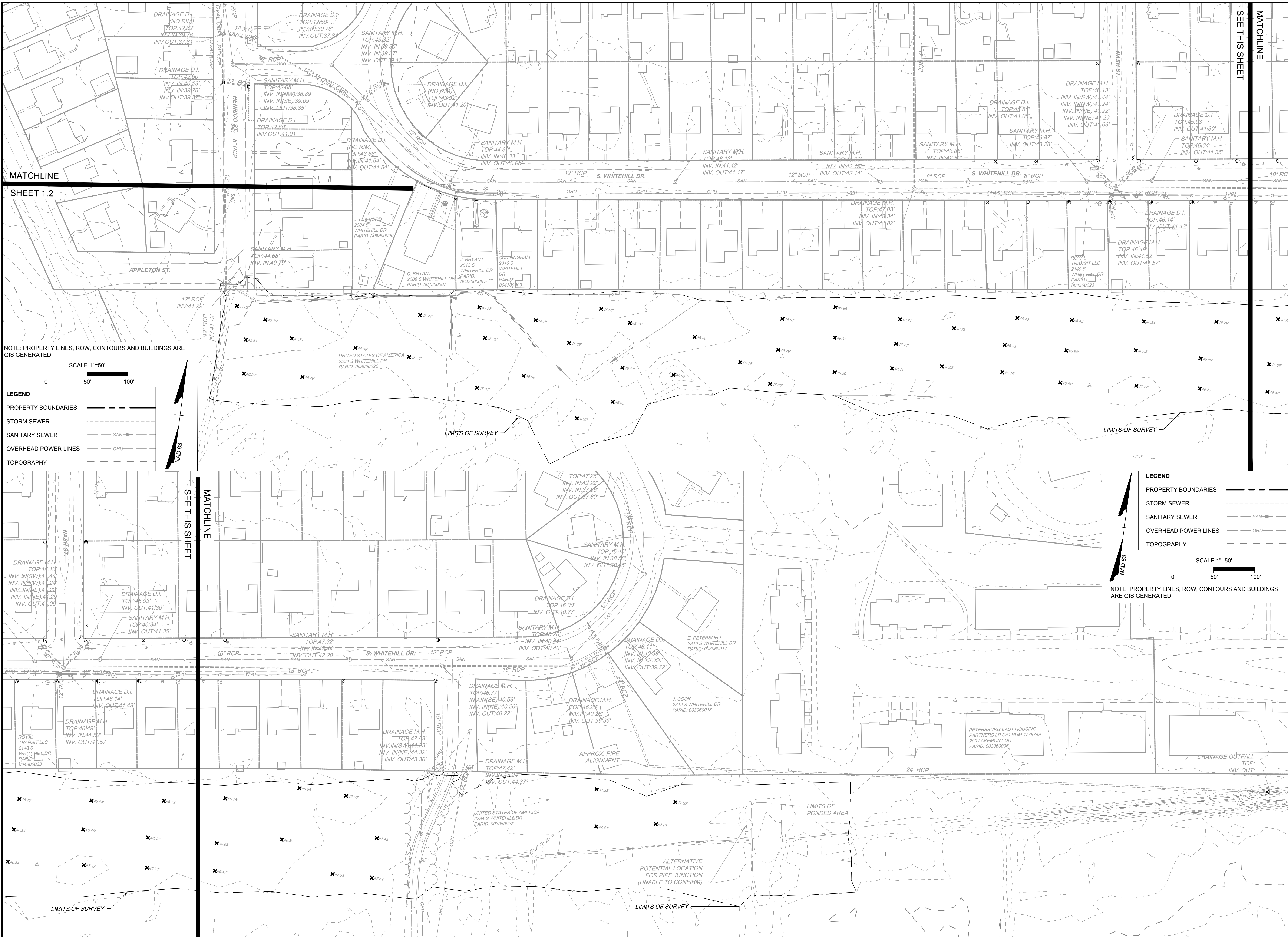
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## S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT

CITY OF PETERSBURG - VIRGINIA  
OVERALL SURVEY DATA

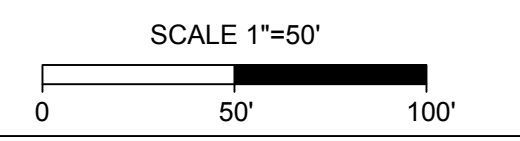
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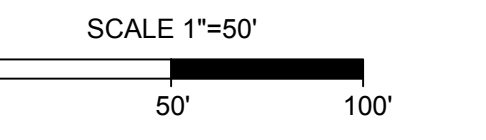
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	DESIGNED BY H. FRY
	CHECKED BY A. CREEL
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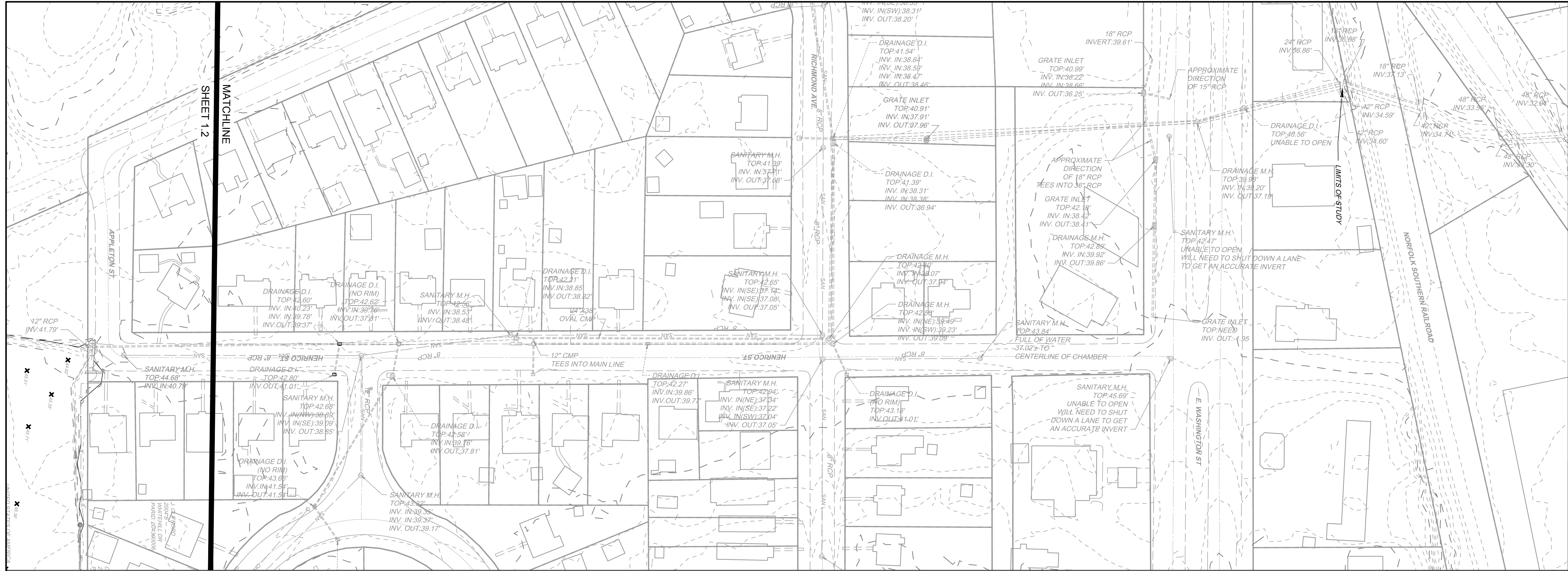
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**S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT**  
 CITY OF PETERSBURG - VIRGINIA  
**PETERSBURG BATTELFIELD SURVEY DATA**

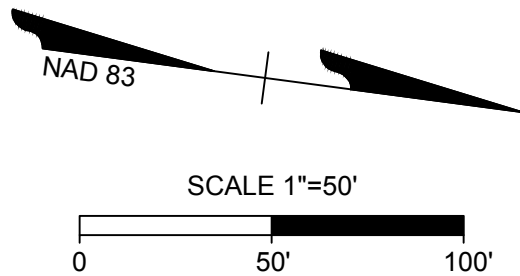
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SHEET 12  
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OVERHEAD POWER LINES	---
TOPOGRAPHY	---

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DESIGNED BY  
H. FRY  
CHECKED BY  
A. CREEL  
SCALE  
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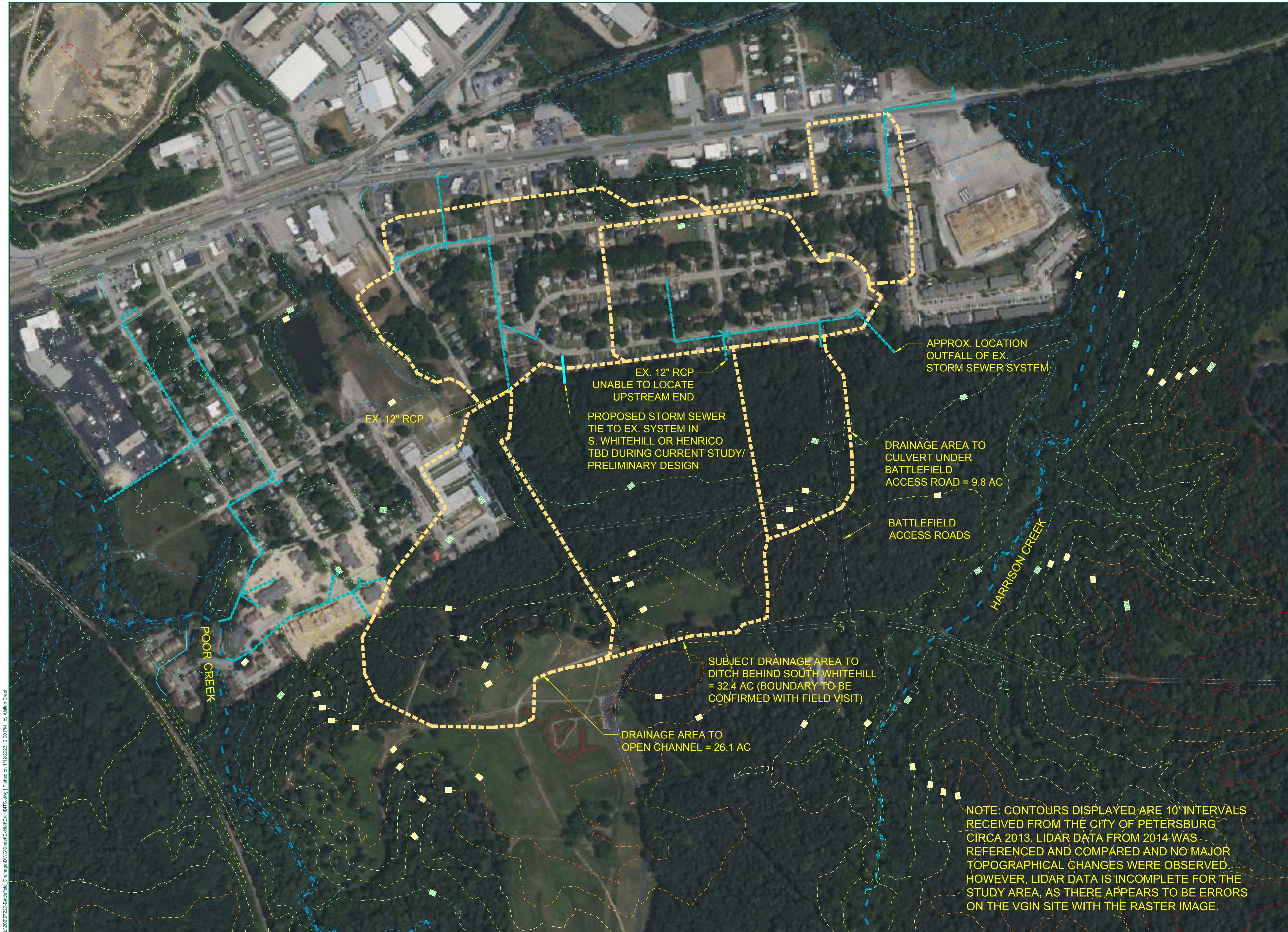
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S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT  
CITY OF PETERSBURG - VIRGINIA  
PETERSBURG BATTLEFIELD SURVEY DATA

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# Appendix B



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 A. CREEL  
 DESIGNED BY  
 CHECKED BY  
 SCALE  
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**TIMMONS GROUP**

**BATTLEFIELD DRAINAGE IMPROVEMENTS**  
 CITY OF PETERSBURG, VA  
**PRELIMINARY DRAINAGE AREA MAP**

JOB NO.  
**57229**  
 SHEET NO.  
**EXBT A**

REVISION DESCRIPTION	DATE

NOTE: CONTOURS DISPLAYED ARE 10' INTERVALS RECEIVED FROM THE CITY OF PETERSBURG CIRCA 2013. LIDAR DATA FROM 2014 WAS REFERENCED AND COMPARED AND NO MAJOR TOPOGRAPHICAL CHANGES WERE OBSERVED. HOWEVER, LIDAR DATA IS INCOMPLETE FOR THE STUDY AREA, AS THERE APPEARS TO BE ERRORS ON THE VGIN SITE WITH THE RASTER IMAGE.

**FOCUS SILVER JACKETS FUNDING ON STUDYING UPGRADES TO THESE TWO OUTFALLS.**

**USE OUR CONCEPTUAL STUDY AND ALL PREVIOUS REPORTS FOR BASIS OF PROJECT.**

**SEE NEXT SHEETS FOR MORE INFORMATION.**



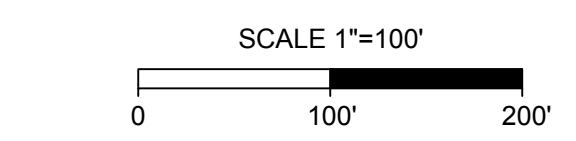
SHEET 12

SHEET 1.1 UPPER

SHEET 1.1 LOWER

LIMITS OF SURVEY

LIMITS OF SURVEY



LEGEND	
PROPERTY BOUNDARIES	---
STORM SEWER	---
SANITARY SEWER	--- SAN --->
OVERHEAD POWER LINES	--- OHU ---
TOPOGRAPHY	--->

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 H. FRY  
 CHECKED BY  
 A. CREEL  
 SCALE  
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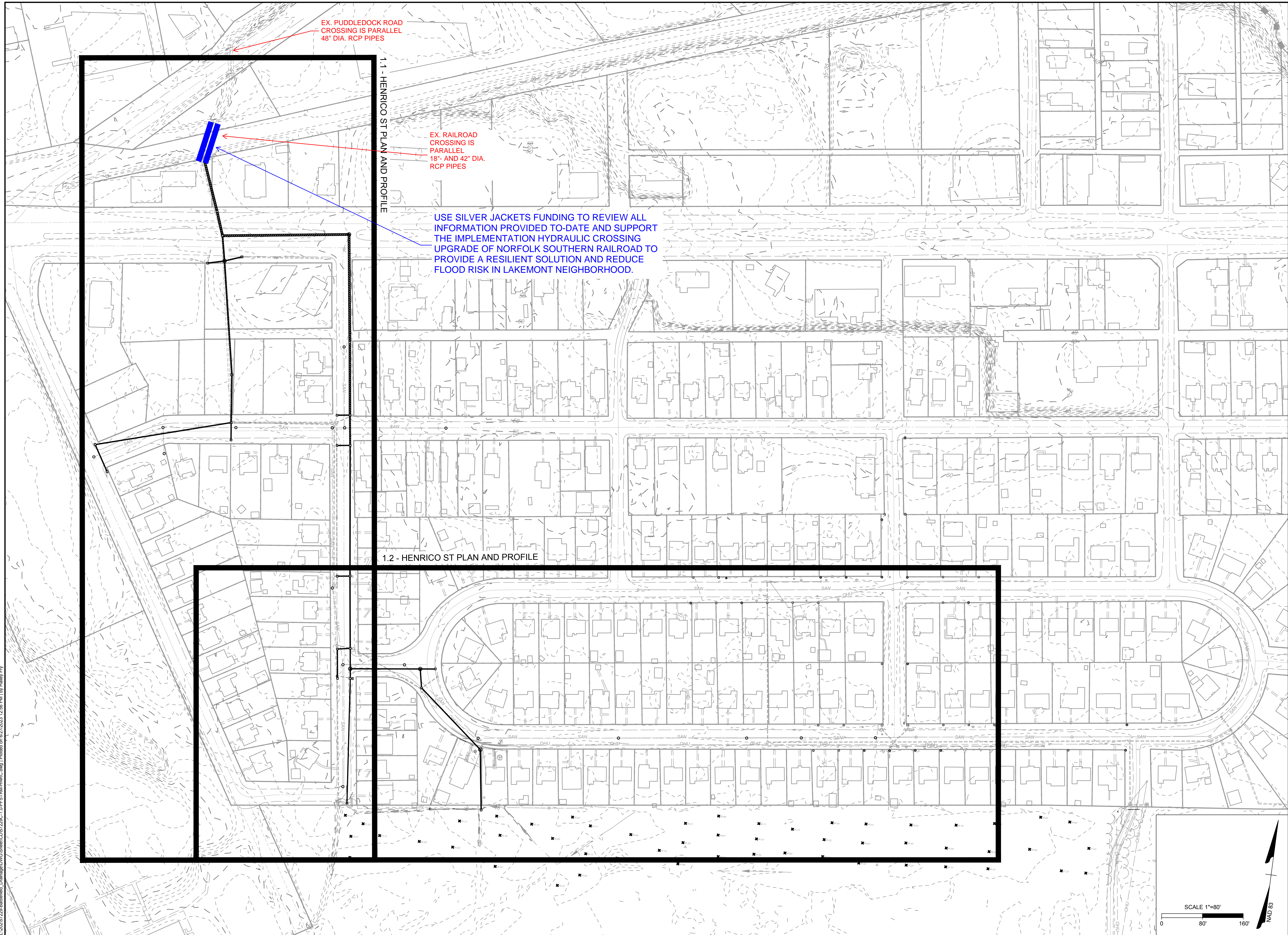
**S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT**  
 CITY OF PETERSBURG - VIRGINIA  
 OVERALL SURVEY DATA

JOB NO.  
**57229**  
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**EXBT-1.0**

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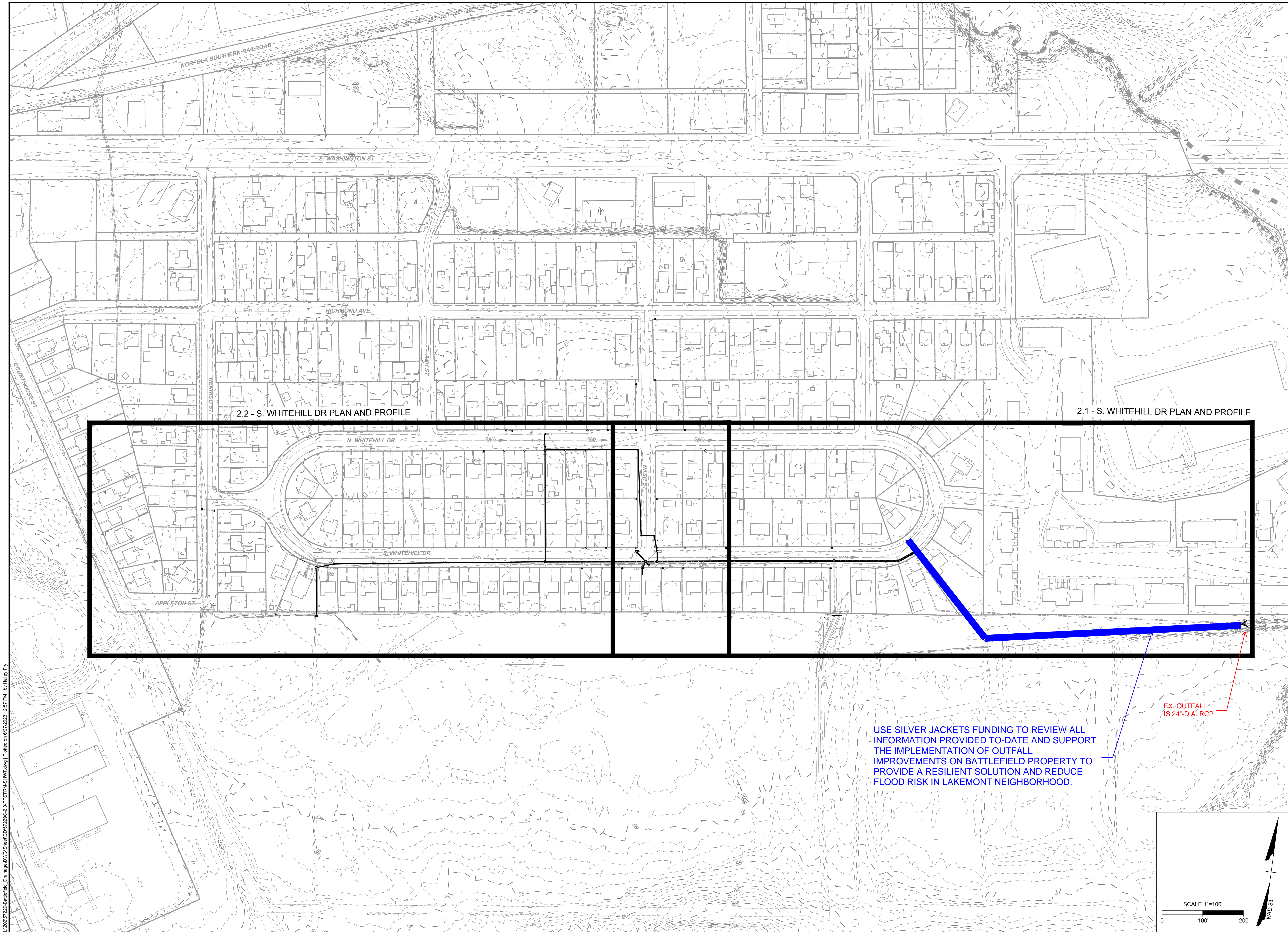
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**S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT**  
CITY OF PETERSBURG - VIRGINIA  
**OVERALL HENRICO ST TRUNKLINE**

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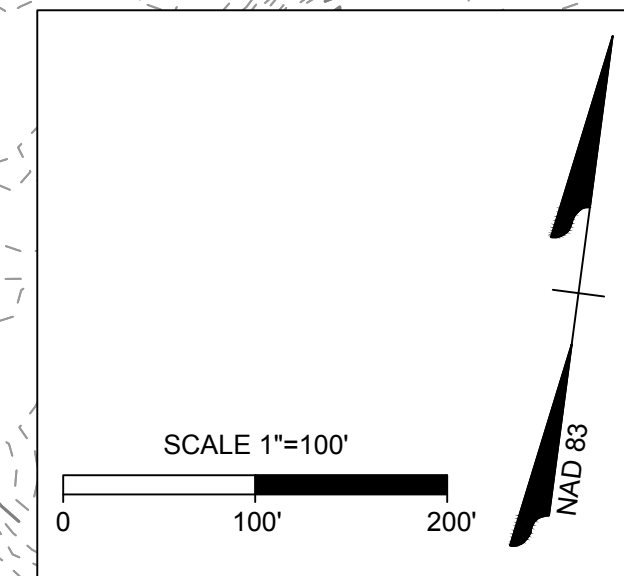


2.2 - S. WHITEHILL DR PLAN AND PROFILE

2.1 - S. WHITEHILL DR PLAN AND PROFILE

USE SILVER JACKETS FUNDING TO REVIEW ALL INFORMATION PROVIDED TO-DATE AND SUPPORT THE IMPLEMENTATION OF OUTFALL IMPROVEMENTS ON BATTLEFIELD PROPERTY TO PROVIDE A RESILIENT SOLUTION AND REDUCE FLOOD RISK IN LAKEMONT NEIGHBORHOOD.

EX. OUTFALL IS 24"-DIA. RCP



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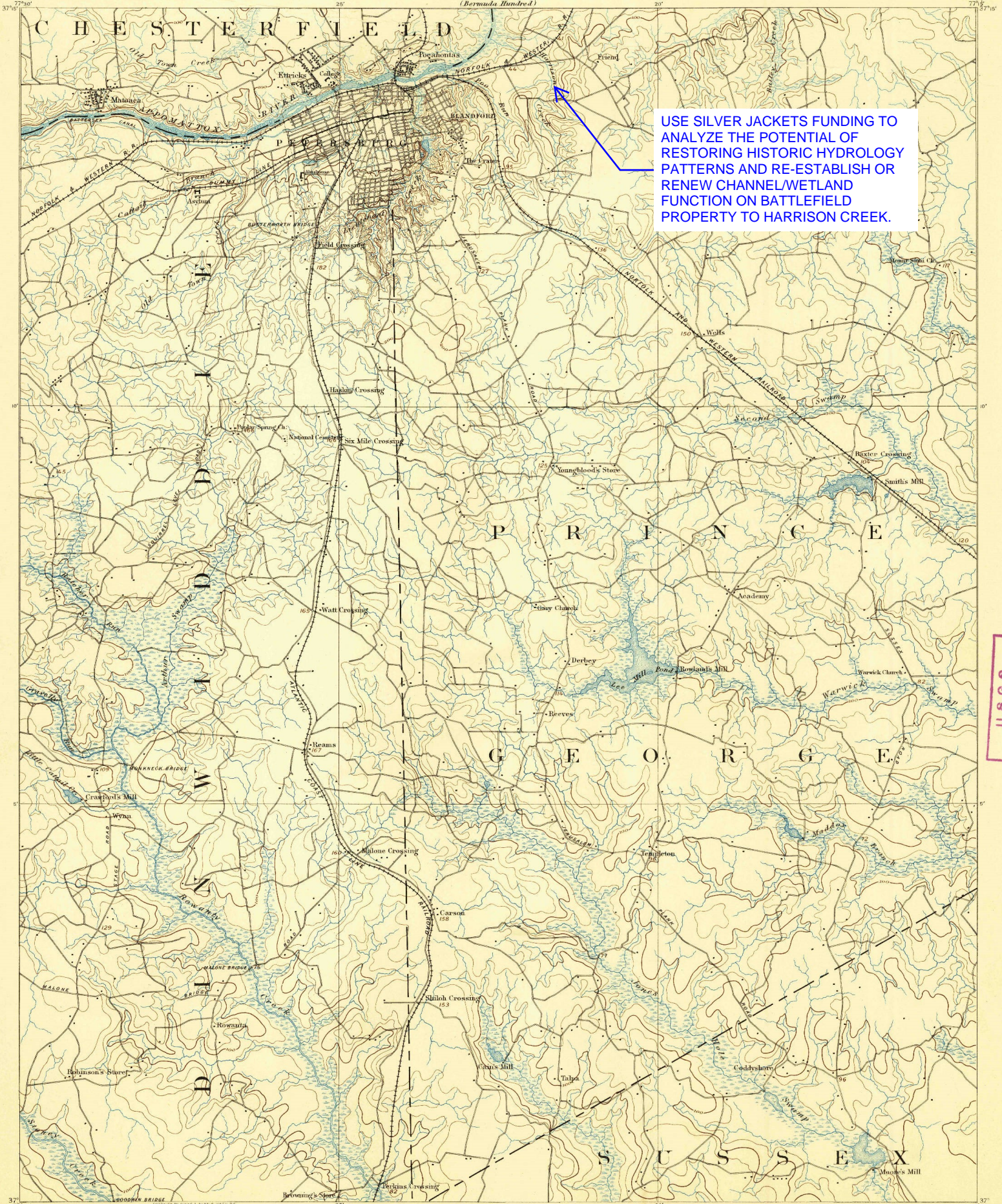
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USE SILVER JACKETS FUNDING TO ANALYZE THE POTENTIAL OF RESTORING HISTORIC HYDROLOGY PATTERNS AND RE-ESTABLISH OR RENEW CHANNEL/WETLAND FUNCTION ON BATTLEFIELD PROPERTY TO HARRISON CREEK.

U.S.G.S.  
FILE COPY

Henry Gannett, Chief Topographer.  
Gilbert Thompson, Chief Geographer in charge.  
Triangulation by U.S. Coast and Geodetic Survey and Corps of Engineers, U.S.A.  
Topography by M. Hackett.  
Surveyed in 1892.

Scale 42,500  
Contour Interval 20 feet  
Datum is mean Sea level

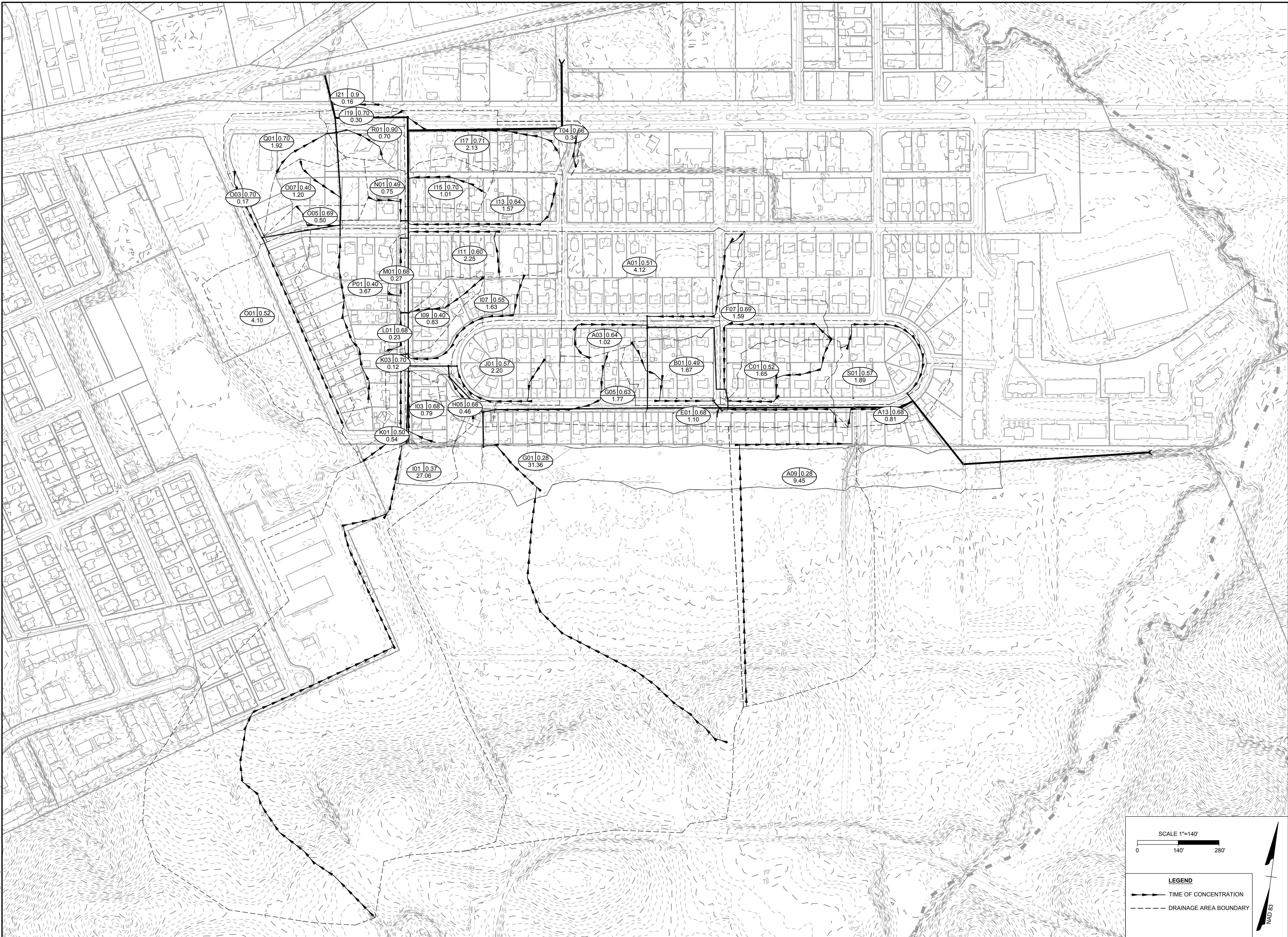
USGS  
Historical File  
Topographic Division

600  
Petersburg, VA.



# Appendix C

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SCALE 1"=140'

0 140' 280'

**LEGEND**

- TIME OF CONCENTRATION
- DRAINAGE AREA BOUNDARY

NAD 83

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**S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT**  
CITY OF PETERSBURG - VIRGINIA  
DRAINAGE AREA MAP

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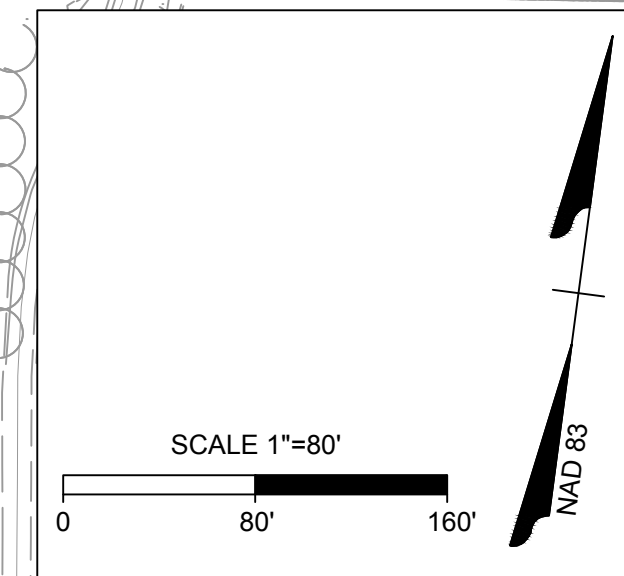
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1.1 - HENRICO ST PLAN AND PROFILE

1.2 - HENRICO ST PLAN AND PROFILE



# TIMMONS GROUP

**S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT**  
 CITY OF PETERSBURG - VIRGINIA  
**OVERALL HENRICO ST TRUNKLINE**

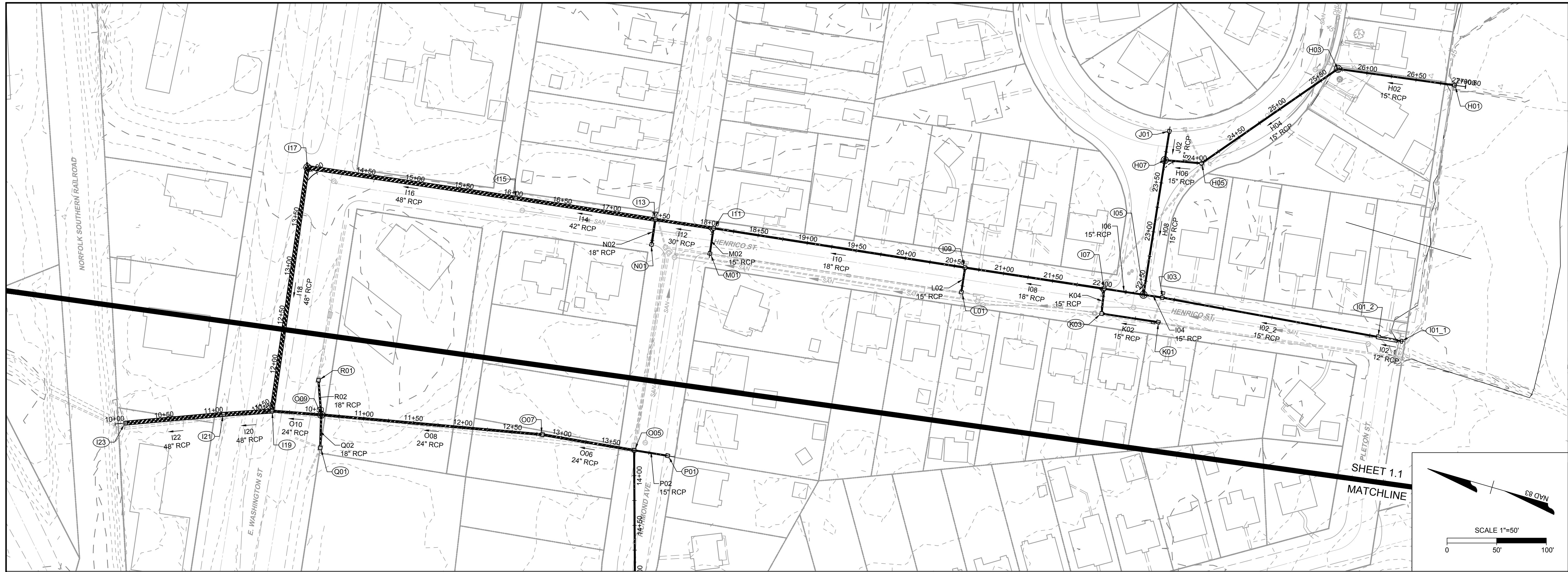
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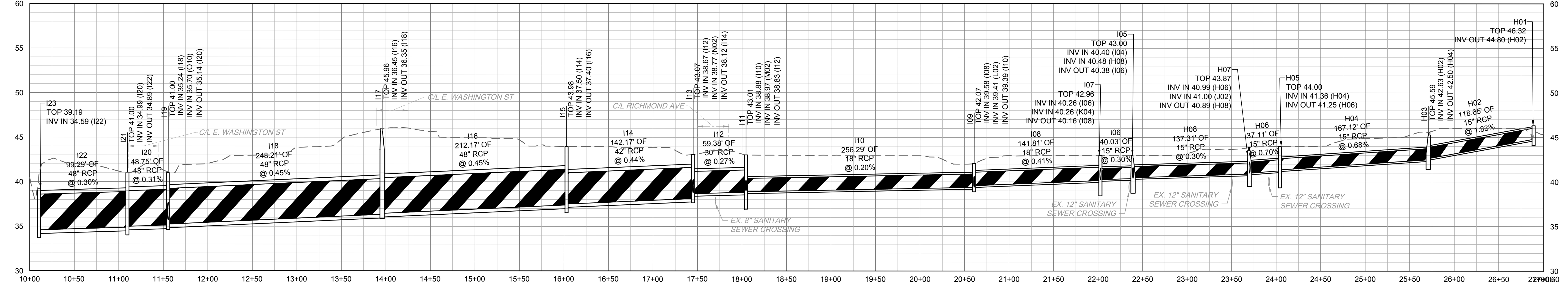
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DESIGNED BY	H. FRY
CHECKED BY	A. CREEL
SCALE	1" = 80'
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HENRICO ST STORM SEWER PROILE

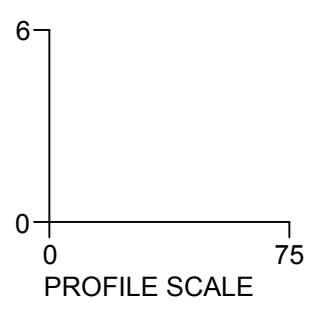


STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
H01	46.32	1.71'	DI-2A
H03	45.59	3.67'	MH-1
H05	44.00	4.16'	DI-2A
H07	43.87	3.87'	MH-1
I01_1	45.00	48.84'	EW-1 for 12" Pipe
I01_2	44.99	3.89'	DI-3B 20 ft Throat
I03	42.98	3.25'	DI-2A
I05	43.00	3.77'	MH-1
I07	42.96	4.03'	DI-2A
I09	42.07	2.68'	DI-2A
I11	43.01	5.58'	DI-2A

STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
I13	43.07	4.93'	DI-2A
I15	43.98	6.95'	DI-2A
I17	45.96	9.61'	MH-1
I19	41.00	5.86'	DI-2A
I21	41.00	6.48'	DI-2A
I23	39.19	4.99'	DI-2A
J01	43.99	4.29'	DI-2A
K01	43.12	3.28'	DI-2A
K03	43.00	2.66'	DI-2A
L01	42.12	2.82'	DI-2A
M01	42.99	5.99'	DI-2A

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
H02	15"	H01 - H03	44.80	42.63	1.83%	118.65 LF	15 inch RCP
H04	15"	H03 - H05	42.50	41.36	0.68%	167.12 LF	15 inch RCP
H06	15"	H05 - H07	41.25	40.99	0.70%	37.11 LF	15 inch RCP
H08	15"	H07 - I05	40.89	40.48	0.30%	137.31 LF	15 inch RCP
I02_1	12"	I01_1 - I01_2	43.46	43.18	1.18%	23.41 LF	12 inch RCP
I02_2	15"	I01_2 - I03	41.30	40.56	0.33%	221.32 LF	15 inch RCP
I04	15"	I03 - I05	40.46	40.40	0.32%	19.04 LF	15 inch RCP
I06	15"	I05 - I07	40.38	40.26	0.30%	40.03 LF	15 inch RCP
I08	18"	I07 - I09	40.16	39.58	0.41%	141.81 LF	18 inch RCP
I10	18"	I09 - I11	39.39	38.88	0.20%	256.29 LF	18 inch RCP

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
I12	30"	I11 - I13	38.83	38.67	0.27%	59.38 LF	30 inch RCP
I14	42"	I13 - I15	38.12	37.50	0.44%	142.17 LF	42 inch RCP
I16	48"	I15 - I17	37.40	36.45	0.45%	212.17 LF	48 inch RCP
I18	48"	I17 - I19	36.35	35.24	0.45%	248.21 LF	48 inch RCP
I20	48"	I19 - I21	35.14	34.99	0.31%	48.75 LF	48 inch RCP
I22	48"	I21 - I23	34.89	34.59	0.30%	99.29 LF	48 inch RCP
J02	15"	J01 - H07	41.20	41.00	0.68%	29.52 LF	15 inch RCP
K02	15"	K01 - K03	40.57	40.39	0.31%	57.66 LF	15 inch RCP
K04	15"	K03 - I07	40.34	40.26	0.32%	25.19 LF	15 inch RCP
L02	15"	L01 - I09	39.49	39.41	0.32%	24.91 LF	15 inch RCP



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**S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT**  
CITY OF PETERSBURG - VIRGINIA

**HENRICO ST PLAN AND PROFILE**

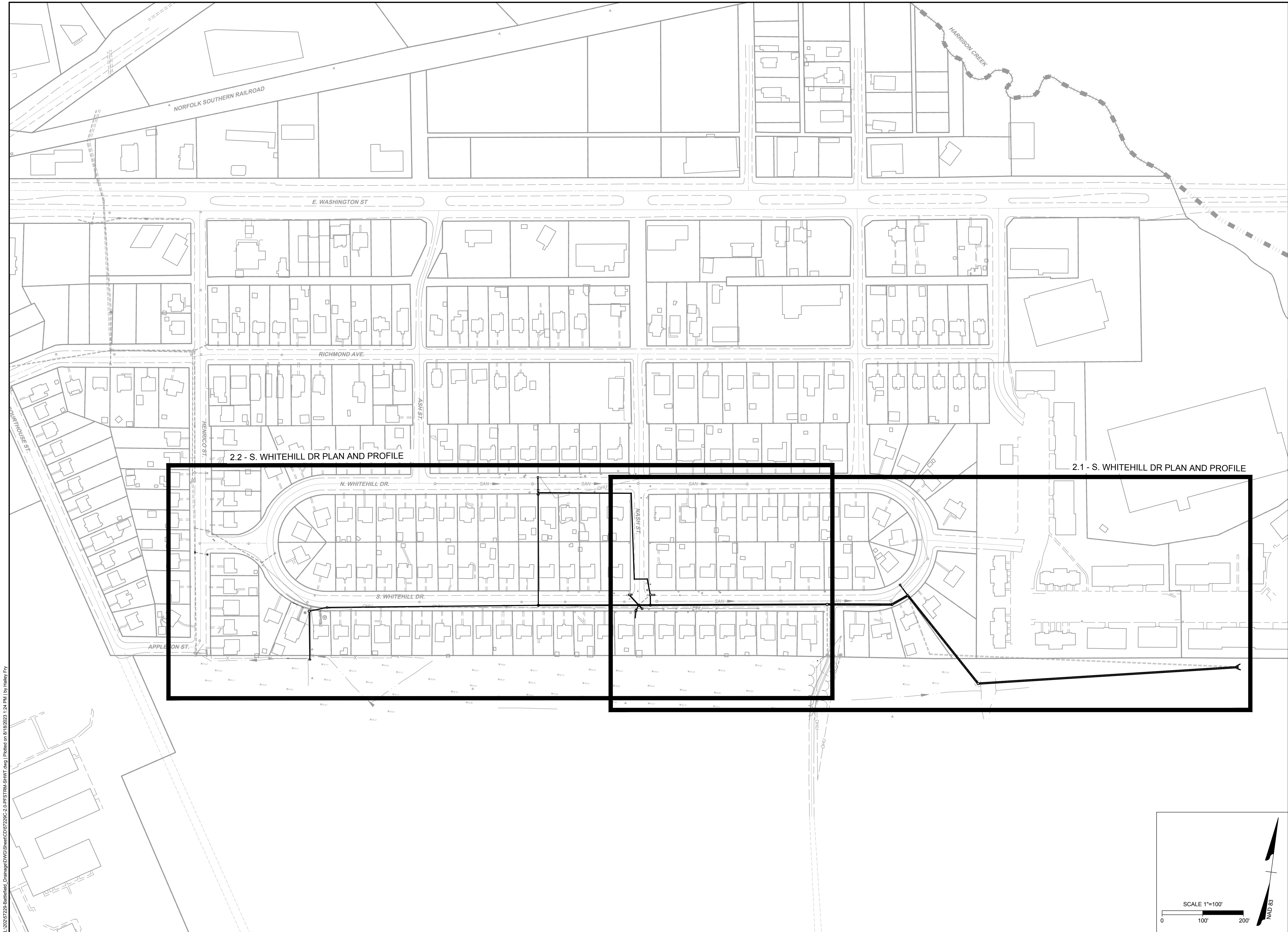
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SHEET NO. 1.2

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DESIGNED BY: H. FRY  
CHECKED BY: A. CREELEY  
SCALE: AS SHOWN

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2.2 - S. WHITEHILL DR PLAN AND PROFILE

2.1 - S. WHITEHILL DR PLAN AND PROFILE

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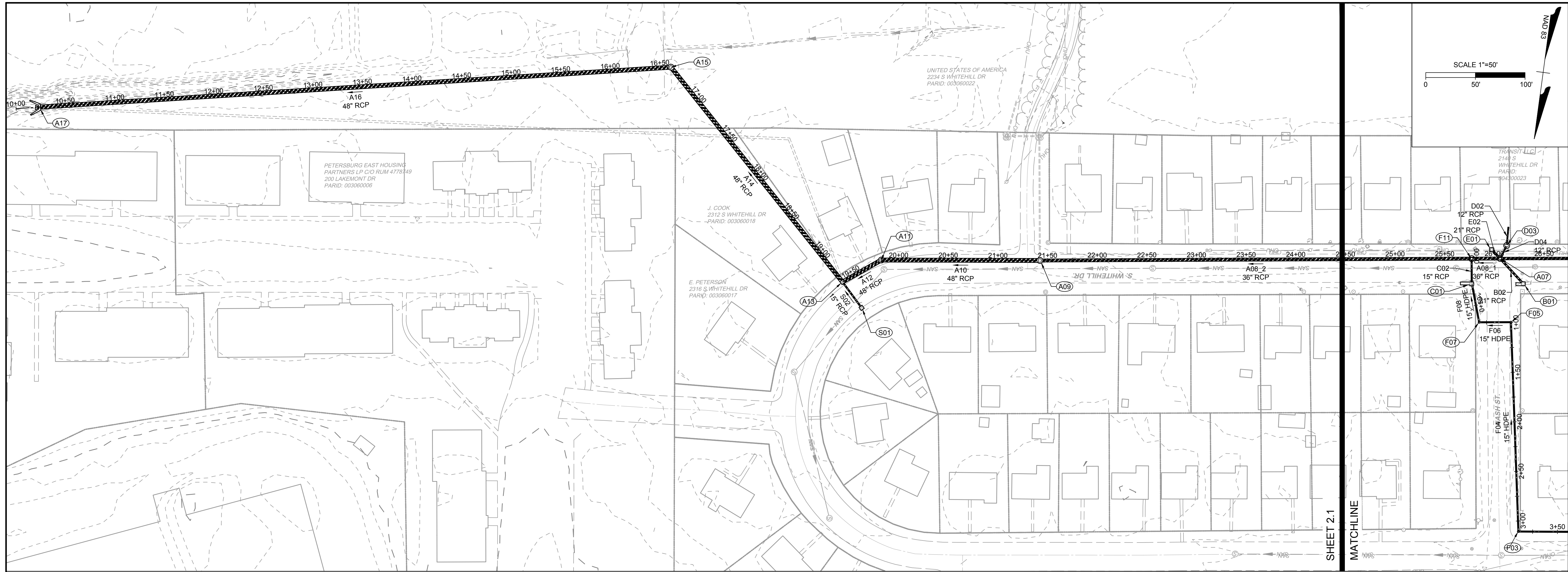
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 H. FRY  
 CHECKED BY  
 A. CREEL  
 SCALE  
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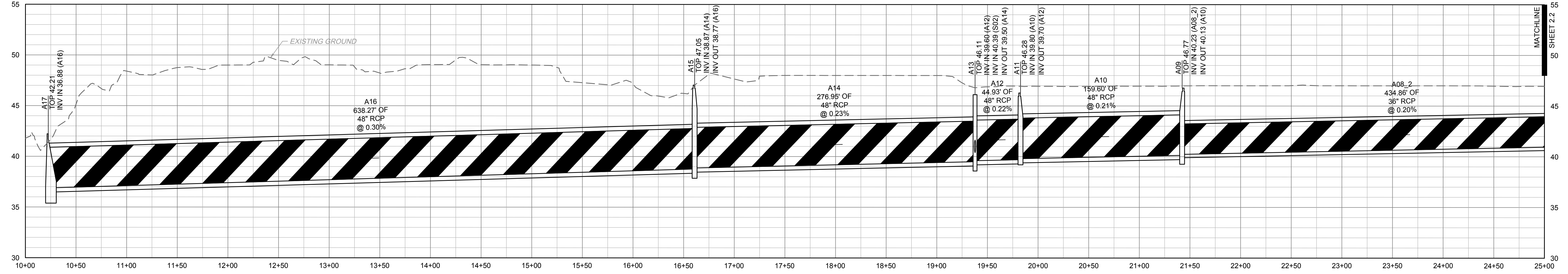
S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT  
 CITY OF PETERSBURG - VIRGINIA  
 OVERALL S. WHITEHILL DR TRUNKLINE

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**S. WHITEHILL DR STORM SEWER PROFILE**



STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
A01	45.95	1.83'	DI-3A
A03	46.15	2.14'	DI-3A
A04	46.67	2.67'	MH-1
A05	47.03	5.88'	MH-1
A07	46.13	5.20'	MH-1
A09	46.77	7.02'	MH-1
A11	46.28	6.59'	MH-1
A13	46.11	7.03'	DI-3A
A15	47.05	8.70'	MH-1

STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
A17	42.21	16.91'	EW-2 - 48" Pipe - 2:1 Fill Slope
B01	45.85	4.91'	DI-3B 8 ft Throat
C01	45.93	4.68'	DI-3B 12 ft Throat
D03	47.24	5.73'	MH-1
E01	46.14	4.99'	DI-3A
F01	46.57	2.87'	NYLOPLAST 24" BASIN w/ SOLID COVER
F03	46.76	4.08'	NYLOPLAST 24" DRAIN BASIN w/ STANDARD GRATE
F05	46.45	4.71'	NYLOPLAST 24" DRAIN BASIN w/ SOLID COVER
F07	45.41	3.90'	NYLOPLAST 24" DRAIN BASIN w/ DOME INLET

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
A02	12"	A01 - A03	44.12	44.11	0.03%	32.70 LF	12 inch RCP
A04_1	12"	A03 - F01	44.01	44.00	0.15%	4.94 LF	12 inch RCP
A04_2	12"	A04 - A05	44.00	43.34	0.24%	273.25 LF	12 inch RCP
A06	30"	A05 - A07	41.86	41.36	0.20%	246.92 LF	30 inch RCP
A08_1	36"	A07 - F11	41.20	41.14	0.21%	28.70 LF	36 inch RCP
A08_2	36"	F11 - A09	41.10	40.23	0.20%	434.86 LF	36 inch RCP
A10	48"	A09 - A11	40.13	39.80	0.21%	159.60 LF	48 inch RCP
A12	48"	A11 - A13	39.70	39.60	0.22%	44.93 LF	48 inch RCP
A14	48"	A13 - A15	39.50	38.87	0.23%	276.95 LF	48 inch RCP

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
A16	48"	A15 - A17	38.77	36.88	0.30%	638.27 LF	48 inch RCP
B02	21"	B01 - A07	41.25	41.25	0.00%	34.51 LF	21 inch RCP
C02	15"	C01 - F11	41.25	41.15	0.40%	25.45 LF	15" CLASS III RCP
D02	12"	- D03	41.61	41.52	0.50%	18.69 LF	12 inch RCP
D04	12"	D03 - A07	41.51	41.45	0.41%	14.62 LF	12 inch RCP
E02	21"	E01 - A07	41.20	41.20	0.01%	12.31 LF	21 inch RCP
F02	15"	F01 - F03	43.70	42.78	0.40%	229.20 LF	15" HDPE
F04	15"	F03 - F05	42.68	41.84	0.40%	211.14 LF	15" HDPE
F06	15"	F05 - F07	41.74	41.61	0.40%	32.01 LF	15" HDPE

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**S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT**  
CITY OF PETERSBURG - VIRGINIA  
**S. WHITEHILL DR PLAN AND PROFILE**

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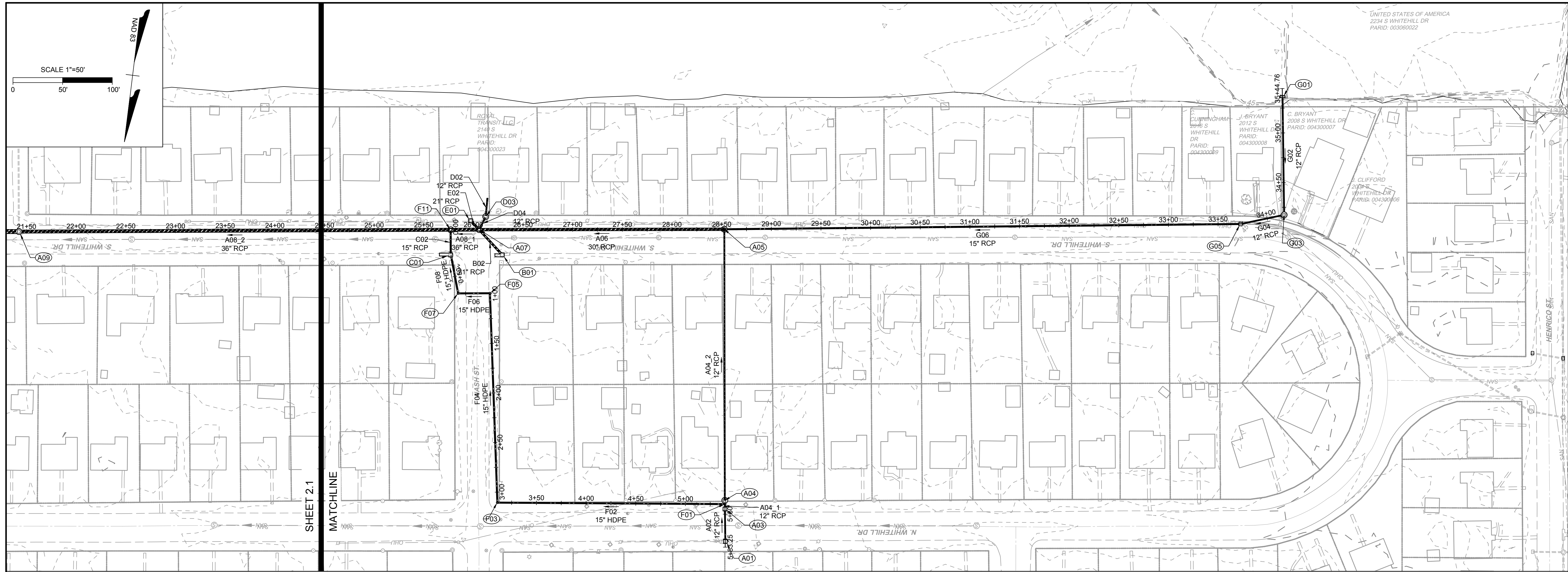
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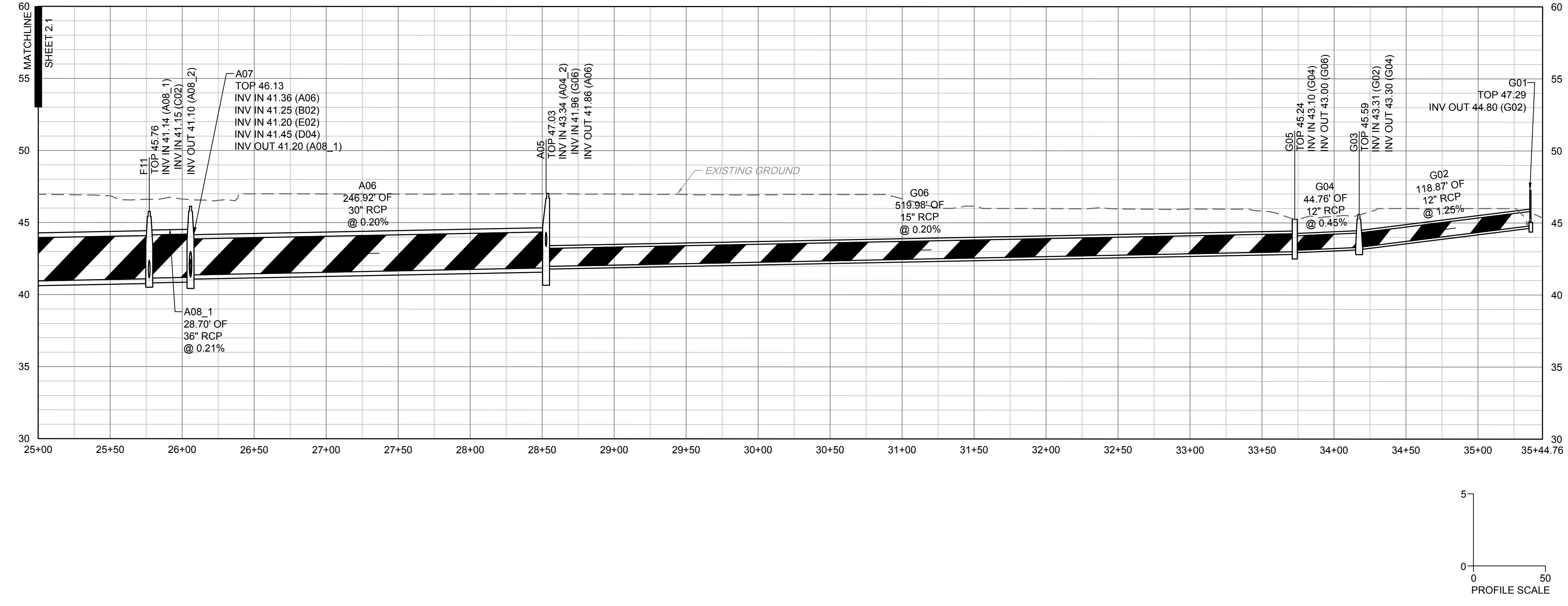
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**S. WHITEHILL DRIVE STORM SEWER PROFILE**

STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
F11	45.76	4.75'	VDOT STD. MH-1 w/ IS-1, ST-1
G01	47.29	5.17'	EW-1 for 15" Pipe
G03	45.59	2.29'	MH-1
G05	45.24	2.24'	DI-2A
S01	46.00	5.23'	DI-3A

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
F08	15"	F07 - C01	41.51	41.35	0.40%	39.37 LF	15" HDPE
G02	12"	G01 - G03	44.80	43.31	1.25%	118.87 LF	12 inch RCP
G04	12"	G03 - G05	43.30	43.10	0.45%	44.76 LF	12 inch RCP
G06	15"	G05 - A05	43.00	41.96	0.20%	519.98 LF	15 inch RCP
S02	15"	S01 - A13	40.77	40.39	1.17%	32.42 LF	15 inch RCP



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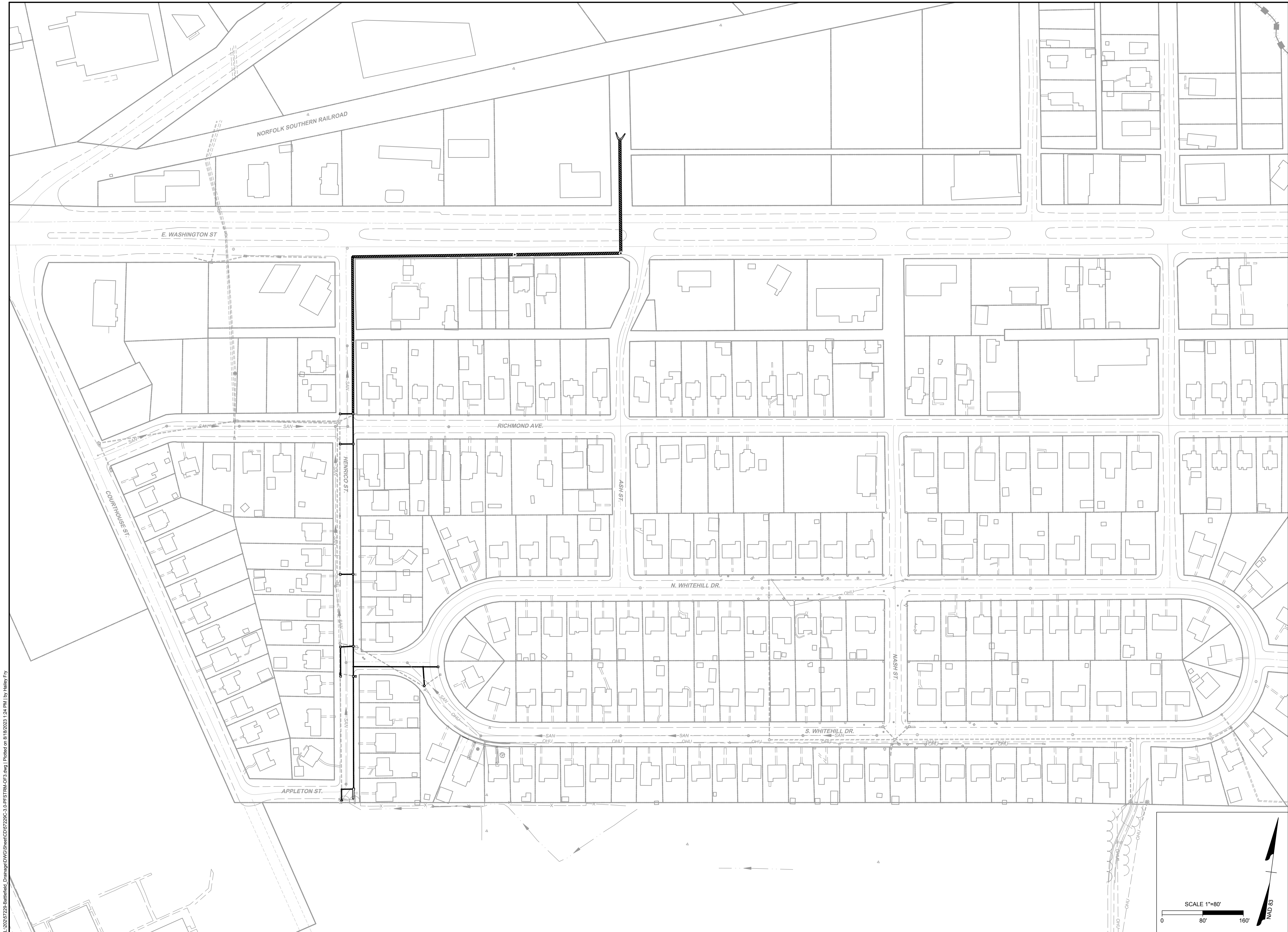
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CITY OF PETERSBURG - VIRGINIA

**S. WHITEHILL DR PLAN AND PROFILE**

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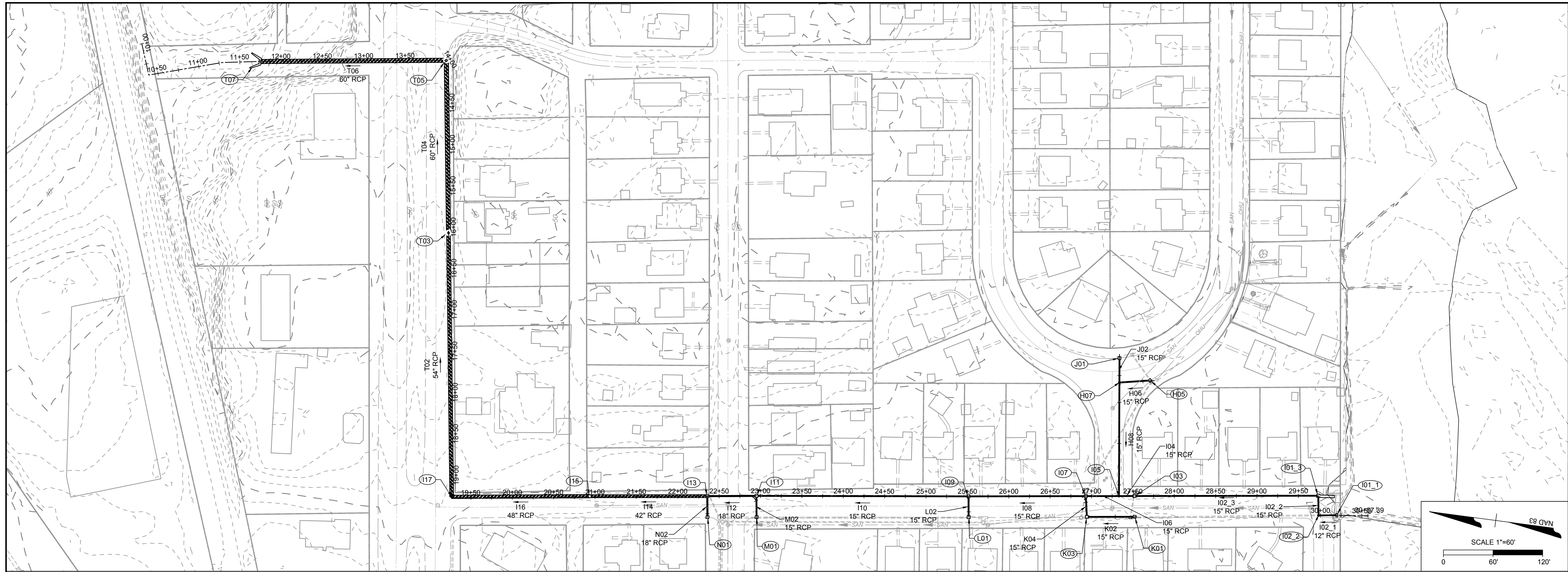
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**S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT**  
 CITY OF PETERSBURG - VIRGINIA  
**OVERALL HENRICO ST TRUNKLINE**

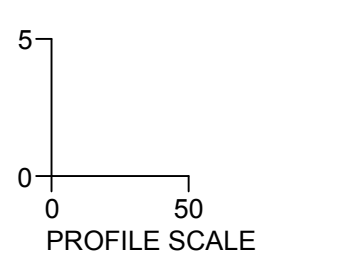
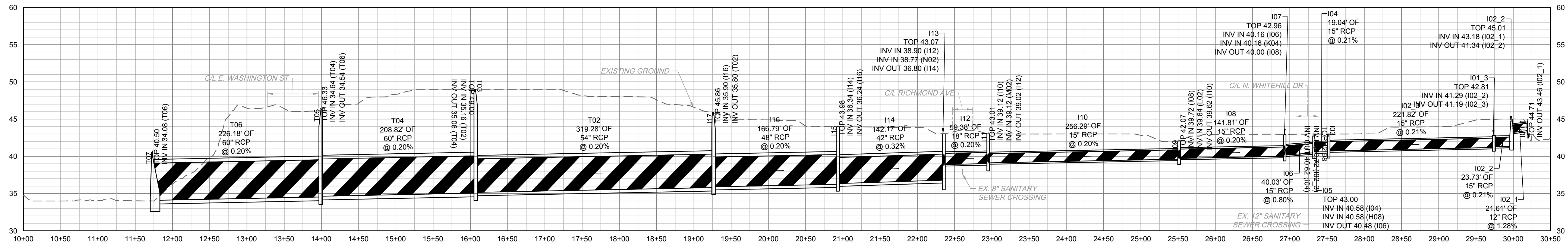
JOB NO.  
**57229**  
 SHEET NO.  
**1.0**

DATE	REVISION DESCRIPTION

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ASH ST STORM SEWER PROFILE



STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
H05	44.00	2.75'	DI-2A
H07	43.87	3.87'	MH-1
I01_1	44.71	48.84'	EW-1 for 12" Pipe
I01_3	42.81	1.62'	DI-3B 20 ft Throat
I02_2	45.01	3.67'	MH-1
I03	42.98	2.71'	DI-2A
I05	43.00	2.81'	MH-1
I07	42.96	3.08'	DI-2A
I09	42.07	2.68'	DI-2A
I11	43.01	4.48'	DI-2A
I13	43.07	7.07'	DI-2A

STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
I15	43.98	8.15'	DI-2A
I17	45.86	10.52'	MH-1
J01	43.99	4.29'	DI-2A
K01	43.12	3.28'	DI-2A
K03	43.00	2.66'	DI-2A
L01	42.12	2.82'	DI-2A
M01	42.99	5.99'	DI-2A
N01	43.00	4.13'	DI-2A
T03	49.00	14.44'	MH-1
T05	46.33	12.29'	MH-1
T07	40.50	4.50'	EW-2 - 60" Pipe - 2:1 Fill Slope

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
H06	15"	H05 - H07	41.25	40.99	0.70%	37.11 LF	15 inch RCP
H08	15"	H07 - I05	40.89	40.58	0.23%	137.31 LF	15 inch RCP
I02_1	12"	I01_1 - I02_2	43.46	43.18	1.28%	21.61 LF	12 inch RCP
I02_2	15"	I02_2 - I01_3	41.34	41.29	0.21%	23.73 LF	15 inch RCP
I02_3	15"	I01_3 - I03	41.19	40.72	0.21%	221.82 LF	15 inch RCP
I04	15"	I03 - I05	40.62	40.58	0.21%	19.04 LF	15 inch RCP
I06	15"	I05 - I07	40.48	40.16	0.80%	40.03 LF	15 inch RCP
I08	15"	I07 - I09	40.00	39.72	0.20%	141.81 LF	15 inch RCP
I10	15"	I09 - I11	39.62	39.12	0.20%	256.29 LF	15 inch RCP
I12	18"	I11 - I13	39.02	38.90	0.20%	59.38 LF	18 inch RCP
I14	42"	I13 - I15	36.80	36.34	0.32%	142.17 LF	42 inch RCP

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
I16	48"	I15 - I17	36.24	35.90	0.20%	166.79 LF	48 inch RCP
J02	15"	J01 - H07	41.20	41.00	0.68%	29.52 LF	15 inch RCP
K02	15"	K01 - K03	40.43	40.31	0.21%	57.66 LF	15 inch RCP
K04	15"	K03 - I07	40.21	40.16	0.20%	25.19 LF	15 inch RCP
L02	15"	L01 - I09	39.69	39.64	0.20%	24.91 LF	15 inch RCP
M02	15"	M01 - I11	39.20	39.12	0.31%	25.72 LF	15 inch RCP
N02	18"	N01 - I13	39.10	38.77	1.30%	25.40 LF	18 inch RCP
T02	54"	I17 - T03	35.80	35.16	0.20%	319.28 LF	54 inch RCP
T04	60"	T03 - T05	35.06	34.64	0.20%	208.82 LF	60 inch RCP
T06	60"	T05 - T07	34.54	34.08	0.20%	226.18 LF	60 inch RCP

THIS DRAWING PREPARED AT THE  
CORPORATE OFFICE  
1001 Builders Parkway, Suite 300 | Richmond, VA 23225  
TEL 804.200.0500 FAX 804.580.1016 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE  
8/18/2023  
DRAWN BY  
H. FRY  
DESIGNED BY  
H. FRY  
CHECKED BY  
A. CREEL  
SCALE  
AS SHOWN

**TIMMONS GROUP**  
S. WHITEHILL DRIVE DRAINAGE IMPROVEMENT  
CITY OF PETERSBURG - VIRGINIA  
HENRICO ST PLAN AND PROFILE

JOB NO.  
57229  
SHEET NO.  
1.1

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# Appendix D

H E N R I C O	Alternative ID	Description	Q10 total at I23	Num. Pipes In System	Num. Meet Capacity	Num. DO NOT Meet Capacity	% Acceptable Capacity	Num. DO NOT Need HGL Adjustment	Num. HGL Adjustment	% Acceptable HGL	Average Surcharge of Overtopping
	HNR01	Henrico St Trunkline. Holds Existing Conditions outfall elevation and 42in outfall diameter. Includes Battlefield drainage from between the Bryant's homes.	104.53	22	5	17	22.73	2.00	20.00	9.09	294.08
	HNR02	Henrico St Trunkline. Holds Existing Conditions outfall elevation and 42in outfall diameter. Does not include additional Battlefield drainage from between the Bryant's homes.	71.24	20	6	14	30.00	4.00	16.00	20.00	112.21
	HNR03	Henrico St Trunkline. Holds Existing Conditions outfall elevation and 42in outfall diameter. Includes Battlefield drainage from between the Bryant's homes. Runs double barrel for the entire trunkline.	102.67	22	11	11	50.00	6.00	16.00	27.27	87.88
	HNR04	Henrico St Trunkline. Holds Existing Conditions outfall elevation but upsizes outfall diameter to 48in. Includes Battlefield drainage from between the Bryant's homes.	102.94	22	5	17	22.73	4.00	18.00	18.18	314.40
	HNR05	Henrico St and Courthouse Rd Trunkline. Holds Existing Conditions outfall elevation but upsizes outfall diameter to 48in. Includes Battlefield drainage from between the Bryant's Homes and Courthouse Rd drainage. Runs double barrel for the entire Henrico St Trunkline.	124.62	30	14	16	46.67	7.00	23.00	23.33	62.09
	HNR06	Henrico St and Courthouse Rd Trunkline. Holds Existing Conditions outfall elevation but upsizes outfall diameter to 48in. Includes Courthouse Rd drainage but does not include additional Battlefield drainage from between the Bryant's homes. Runs double barrel for the entire Henrico St Trunkline.	94.36	28	15	13	53.57	9.00	19.00	32.14	26.01
	HNR07	Henrico St Trunkline. Holds Existing Conditions outfall elevation and 42in outfall diameter. Includes Battlefield drainage from between the Bryant's homes. Adjusts the time of concentration for the Battlefield drainage area to 40min.	83.95	22	5	17	22.73	3.00	19.00	13.64	198.53
	HNR08	Henrico St and Courthouse Rd Trunkline. Holds Existing Conditions outfall elevation but upsizes outfall diameter to 48in. Includes Courthouse Rd drainage but does not include additional Battlefield drainage from between the Bryant's homes. Runs double barrel for the everthing downstream of Washington St.	94.88	28	13	15	46.43	7.00	21	25.00	89.96

W H I T E H I L L	Alternative ID	Description	Q10 total at A17	Num. Pipes In System	Num. Meet Capacity	Num. <b>DO NOT</b> Meet Capacity	% Acceptable Capacity	Num. <b>DO NOT</b> Need HGL Adjustment	Num. HGL Adjustment	% Acceptable HGL	Average Surcharge of Overtopping
	WH01	North and South Whitehill Drive Trunkline. Holds Existing Conditions outfall elevation and 24in outfall diameter. Includes Battlefield drainage from between the Bryant's homes.	91.45	20	1	19	5.00	0.00	20.00	0.00	561.35
	WH02	North Whitehill Drive Trunkline. Holds Existing Conditions outfall elevation and 24in outfall diameter. Does not include Battlefield drainage from between the Bryant's homes.	49.36	16	1	15	6.25	0.00	16.00	0.00	116.11
	WH03	North and South Whitehill Drive Trunkline. Holds Existing Conditions outfall elevation but upsizes outfall diameter to 48in. Includes Battlefield drainage from between the Bryant's homes.	90.33	20	2	18	10.00	4.00	16.00	20.00	84.70
	WH04	North Whitehill Drive Trunkline. Holds Existing Conditions outfall elevation but upsizes outfall diameter to 48in. Does not include Battlefield drainage from between the Bryant's homes.	48.51	16	7	9	43.75	5.00	11.00	31.25	19.15
	WH05	North and South Whitehill Drive Trunkline. Holds Existing Conditions outfall elevation but upsizes outfall diameter to 48in. Includes Battlefield drainage from between the Bryant's homes. Runs double barrel for the entire South Whitehill Dr Trunkline.	82.62	20	7	13	35.00	5.00	15.00	25.00	31.58



A S H	Alternative ID	Description	Q10 total at T07	Num. Pipes In System	Num. Meet Capacity	Num. <b>DO NOT</b> Meet Capacity	% Acceptable Capacity	Num. <b>DO NOT</b> Need HGL Adjustment	Num. HGL Adjustment	% Acceptable HGL	Average Surcharge of Overtopping
	OF3_01	Henrico St Trunkline Outfalling at Outfall 3. Upgrades to Henrico Trunkline but outfalls across from Ash St at abandoned parcel. Does not include additional Battlefield drainage from between the Bryant's homes.	66.92	20	9	11	45.00	6.00	14.00	30.00	129.77
	OF3_02	Henrico St Trunkline Outfalling at Outfall 3. Upgrades to Henrico Trunkline but outfalls across from Ash St at abandoned parcel. Does not include additional ANY Battlefield drainage.	38.40	18	11	7	61.11	8.00	10.00	44.44	27.65
	OF3_03	Henrico St Trunkline Outfalling at Outfall 3. Upgrades to Henrico Trunkline but outfalls across from Ash St at abandoned parcel. Does not include additional ANY Battlefield drainage. All pipes on Washington St are double barrel.	38.39	18	11	7	61.11	8.00	10.00	44.44	27.65
	OF3_04	Henrico St Trunkline Outfalling at Outfall 3. Upgrades to Henrico Trunkline but outfalls across from Ash St at abandoned parcel. Does not include additional ANY Battlefield drainage. All pipes upstream of Richmond Ave are double barrel and all pipes downstream of Richmond Ave are single barrel.	35.37	18	13	5	72.22	8.00	10.00	44.44	16.12
Alternative ID	Description	Q2 total at T07	Num. Pipes In System	Num. Meet Capacity	Num. <b>DO NOT</b> Meet Capacity	% Acceptable Capacity	Num. <b>DO NOT</b> Need HGL Adjustment	Num. HGL Adjustment	% Acceptable HGL	Average Surcharge of Overtopping	
OF3_05	Henrico St Trunkline Outfalling at Outfall 3. Upgrades to Henrico Trunkline but outfalls across from Ash St at abandoned parcel. Does not include additional ANY Battlefield drainage. All pipes upstream of Richmond Ave are double barrel and all pipes downstream of Richmond Ave are single barrel.	26.12	18	13	5	72.22	8.00	10.00	44.44	7.66	

**LD-229**  
**STORM SEWER DESIGN COMPUTATIONS**

PROJECT: OF3\_04  
 LOCATION: S. Whitehill Dr Petersburg VA  
 COUNTY: Hopewell

Designed by: H. Fry

Checked by:

STORM FREQUENCY 10

UNITS ENGLISH

PIPE NO.	FROM POINT		TO POINT		DRAIN AREA "A" Acre (3)	RUNOFF COEFF. "C" (4)	CA		INLET TIME Minutes (7)	RAIN FALL In/Hr (8)	RUNOFF		INVERT ELEVATIONS		LENGTH of Pipe Ft. (12)	SLOPE Ft./Ft. (13)	SIZE (Dia. Or Span/Rise) In. (14)	SHAPE	Number of Pipes	Capacity CFS (15)	Friction Slope Ft./Ft. (16)	NORMAL FLOW					FLOW TIME		REMARKS (18)
	REFERENCE (1)	STA.	REFERENCE (2)	STA.			INCRE-MENT (5)	ACCUM-ULATED (6)			Lateral CFS (9)	Total Q CFS (9)	UPPER END (10)	LOWER END (11)								Depth of Flow, dn Ft.	Area of Flow, An SqFt	Hm Ft.	Vn Ft/Sec (16)	En Ft.	INCRE-MENT Minutes (17)	ACCUMU-LATED Minutes (17)	
H06	H05		H07		2.23	0.58	1.30	1.30	12.04	5.42	0.00	7.05	41.25	40.99	37.11	0.00701	15	Circular	2	5.41	0.00310	0.74	0.75	0.34	4.70	1.08	0.13	12.17	
H08	H07		I05		0.00		0.00	2.56	12.17	5.39	0.00	13.81	40.89	40.58	137.31	0.00226	15	Circular	2	3.07	0.01190	1.25	1.23	0.31	5.63	1.74	0.41	12.58	Pressure Flow
I04	I03		I05		0.78	0.57	0.45	0.45	7.55	6.41	0.00	2.87	40.72	40.58	19.04	0.00735	15	Circular	2	5.54	0.00050	0.43	0.38	0.24	3.79	0.66	0.08	7.63	
I06	I05		I07		0.00		0.00	3.00	12.58	5.32	0.00	16.19	40.48	40.16	40.03	0.00799	15	Circular	2	5.77	0.01640	1.25	1.23	0.31	6.60	1.93	0.10	12.68	Pressure Flow
I08	I07		I09		1.63	0.58	0.94	4.33	12.92	5.26	0.00	23.07	40.00	39.72	141.81	0.00197	15	Circular	2	2.87	0.03330	1.25	1.23	0.31	9.40	2.62	0.25	13.17	Pressure Flow
I10	I09		I11		0.84	0.56	0.47	4.98	13.17	5.22	0.00	26.46	39.62	39.12	256.29	0.00195	15	Circular	2	2.85	0.04380	1.25	1.23	0.31	10.78	3.05	0.40	13.57	Pressure Flow
I12	I11		I13		2.25	0.58	1.30	6.44	24.60	3.87	0.00	30.61	39.02	38.90	59.38	0.00202	18	Circular	2	4.72	0.02210	1.50	1.77	0.38	8.66	2.67	0.11	24.71	Pressure Flow
I14	I13		I15		1.56	0.52	0.81	7.67	24.71	3.86	0.00	35.37	36.80	36.34	142.17	0.00324	42	Circular	1	57.27	0.00130	1.99	5.65	0.94	6.26	2.60	0.38	25.09	
I16	I15		I17		0.00		0.00	7.67	25.09	3.83	0.00	35.37	36.24	35.90	166.79	0.00204	48	Circular	1	64.88	0.00060	2.11	6.71	1.03	5.27	2.54	0.53	25.62	
J02	J01		H07		2.21	0.57	1.25	1.25	11.58	5.50	0.00	6.89	41.20	41.00	29.52	0.00678	15	Circular	2	5.32	0.00300	0.73	0.75	0.34	4.61	1.06	0.11	11.69	
K02	K01		K03		0.54	0.57	0.31	0.31	11.59	5.50	0.00	1.68	40.43	40.31	57.66	0.00208	15	Circular	2	2.95	0.00020	0.46	0.41	0.25	2.07	0.52	0.46	12.05	
K04	K03		I07		0.11	0.68	0.08	0.38	12.05	5.41	0.00	2.08	40.21	40.16	25.19	0.00198	15	Circular	2	2.87	0.00030	0.52	0.48	0.28	2.16	0.59	0.20	12.25	
L02	L01		I09		0.23	0.77	0.18	0.18	5.30	7.08	0.00	1.25	39.69	39.64	24.91	0.00201	15	Circular	2	2.90	0.00010	0.40	0.33	0.22	1.89	0.45	0.22	5.52	
M02	M01		I11		0.00		0.00	0.16	24.36	3.89	0.00	0.64	39.20	39.12	25.72	0.00311	15	Circular	2	3.60	0.00000	0.25	0.18	0.15	1.82	0.30	0.24	24.60	
N02	N01		I13		0.00		0.00	0.42	5.23	7.10	0.00	3.01	39.10	38.77	25.40	0.01299	18	Circular	1	11.97	0.00090	0.51	0.53	0.29	5.64	1.01	0.08	5.31	
T02	I17		T03		0.00		0.00	7.67	25.62	3.79	0.00	35.37	35.80	35.06	319.28	0.00232	54	Circular	1	94.72	0.00030	1.91	6.40	1.01	5.52	2.38	0.96	26.58	
T04	T03		T05		0.00		0.00	7.67	26.58	3.71	0.00	35.37	35.06	34.64	208.82	0.00201	60	Circular	1	116.76	0.00020	1.89	6.79	1.03	5.21	2.31	0.67	27.25	
T06	T05		T07		0.00		0.00	7.67	27.25	3.66	0.00	35.37	34.54	34.08	226.18	0.00203	60	Circular	1	117.34	0.00020	1.88	6.76	1.02	5.23	2.31	0.72	27.97	



**LD-229**  
**STORM SEWER DESIGN COMPUTATIONS**

PROJECT: OF3\_05  
 LOCATION: S. Whitehill Dr Petersburg VA  
 COUNTY: Hopewell

Designed by: H. Fry

Checked by:

STORM FREQUENCY 2

UNITS ENGLISH

PIPE NO.	FROM POINT		TO POINT		DRAIN AREA "A" Acre (3)	RUNOFF COEFF. "C" (4)	CA		INLET TIME Minutes (7)	RAIN FALL In/Hr (8)	RUNOFF		INVERT ELEVATIONS		LENGTH of Pipe Ft. (12)	SLOPE Ft./Ft. (13)	SIZE (Dia. Or Span/Rise) In. (14)	SHAPE	Number of Pipes	Capacity CFS (15)	Friction Slope Ft./Ft. (16)	NORMAL FLOW					FLOW TIME		REMARKS (18)
	REFERENCE (1)	STA.	REFERENCE (2)	STA.			INCRE-MENT (5)	ACCUM-ULATED (6)			Lateral CFS (9)	Total Q CFS (9)	UPPER END (10)	LOWER END (11)								Depth of Flow, dn Ft.	Area of Flow, An SqFt	Hm Ft.	Vn Ft/Sec (16)	En Ft.	INCRE-MENT Minutes (17)	ACCUMU-LATED Minutes (17)	
H06	H05		H07		2.23	0.58	1.30	1.30	12.04	4.01	0.00	5.22	41.25	40.99	37.11	0.00701	15	Circular	2	5.41	0.00170	0.61	0.60	0.31	4.37	0.91	0.14	12.18	
H08	H07		I05		0.00		0.00	2.56	12.18	3.99	0.00	10.22	40.89	40.58	137.31	0.00226	15	Circular	2	3.07	0.00650	1.25	1.23	0.31	4.16	1.52	0.55	12.73	Pressure Flow
I04	I03		I05		0.78	0.57	0.45	0.45	7.55	4.79	0.00	2.14	40.72	40.58	19.04	0.00735	15	Circular	2	5.54	0.00030	0.37	0.31	0.21	3.49	0.56	0.09	7.64	
I06	I05		I07		0.00		0.00	3.00	12.73	3.91	0.00	11.97	40.48	40.16	40.03	0.00799	15	Circular	2	5.77	0.00900	1.25	1.23	0.31	4.88	1.62	0.14	12.87	Pressure Flow
I08	I07		I09		1.63	0.58	0.94	4.33	12.92	3.89	0.00	17.10	40.00	39.72	141.81	0.00197	15	Circular	2	2.87	0.01830	1.25	1.23	0.31	6.97	2.00	0.34	13.26	Pressure Flow
I10	I09		I11		0.84	0.56	0.47	4.98	13.26	3.84	0.00	19.60	39.62	39.12	256.29	0.00195	15	Circular	2	2.85	0.02400	1.25	1.23	0.31	7.98	2.24	0.54	13.79	Pressure Flow
I12	I11		I13		2.25	0.58	1.30	6.44	24.62	2.80	0.00	22.68	39.02	38.90	59.38	0.00202	18	Circular	2	4.72	0.01220	1.50	1.77	0.38	6.42	2.14	0.15	24.77	Pressure Flow
I14	I13		I15		1.56	0.52	0.81	7.67	24.77	2.79	0.00	26.12	36.80	36.34	142.17	0.00324	42	Circular	1	57.27	0.00070	1.66	4.49	0.85	5.82	2.18	0.41	25.18	
I16	I15		I17		0.00		0.00	7.67	25.18	2.76	0.00	26.12	36.24	35.90	166.79	0.00204	48	Circular	1	64.88	0.00030	1.77	5.35	0.92	4.88	2.14	0.57	25.75	
J02	J01		H07		2.21	0.57	1.25	1.25	11.58	4.08	0.00	5.11	41.20	41.00	29.52	0.00678	15	Circular	2	5.32	0.00160	0.61	0.60	0.31	4.29	0.90	0.12	11.70	
K02	K01		K03		0.54	0.57	0.31	0.31	11.59	4.08	0.00	1.24	40.43	40.31	57.66	0.00208	15	Circular	2	2.95	0.00010	0.39	0.33	0.22	1.90	0.45	0.51	12.10	
K04	K03		I07		0.11	0.68	0.08	0.38	12.10	4.00	0.00	1.54	40.21	40.16	25.19	0.00198	15	Circular	2	2.87	0.00010	0.44	0.39	0.24	1.99	0.50	0.21	12.31	
L02	L01		I09		0.23	0.77	0.18	0.18	5.30	5.32	0.00	0.94	39.69	39.64	24.91	0.00201	15	Circular	2	2.90	0.00010	0.34	0.27	0.20	1.74	0.39	0.24	5.54	
M02	M01		I11		0.00		0.00	0.16	24.36	2.81	0.00	0.46	39.20	39.12	25.72	0.00311	15	Circular	2	3.60	0.00000	0.21	0.14	0.13	1.65	0.26	0.26	24.62	
N02	N01		I13		0.00		0.00	0.42	5.23	5.34	0.00	2.26	39.10	38.77	25.40	0.01299	18	Circular	1	11.97	0.00050	0.44	0.43	0.25	5.21	0.86	0.08	5.31	
T02	I17		T03		0.00		0.00	7.67	25.75	2.73	0.00	26.12	35.80	35.06	319.28	0.00232	54	Circular	1	94.72	0.00020	1.62	5.14	0.89	5.09	2.02	1.05	26.80	
T04	T03		T05		0.00		0.00	7.67	26.80	2.66	0.00	26.12	35.06	34.64	208.82	0.00201	60	Circular	1	116.76	0.00010	1.61	5.45	0.90	4.79	1.96	0.73	27.52	
T06	T05		T07		0.00		0.00	7.67	27.52	2.62	0.00	26.12	34.54	34.08	226.18	0.00203	60	Circular	1	117.34	0.00010	1.60	5.43	0.90	4.81	1.96	0.78	28.31	



## Maintenance and Management Plan

January 2023 – January 2033

All proposed stormwater system upgrade projects will be maintained in accordance with the City's Virginia Stormwater Management Program (VSMP) which includes ongoing preventative maintenance of the storm drain system, including vacuuming inlet and manhole structures and jetting storm sewer pipes, as needed. Routine inspections of stormwater management facilities, and corrective maintenance, are also performed in accordance with the City's VSMP and Municipal Separate Storm Sewer System (MS4) Permit. The maintenance and management plan is funded by the City's Stormwater Utility fee. Maintenance is performed by the City's Department of Public Works- Street Operations Division.

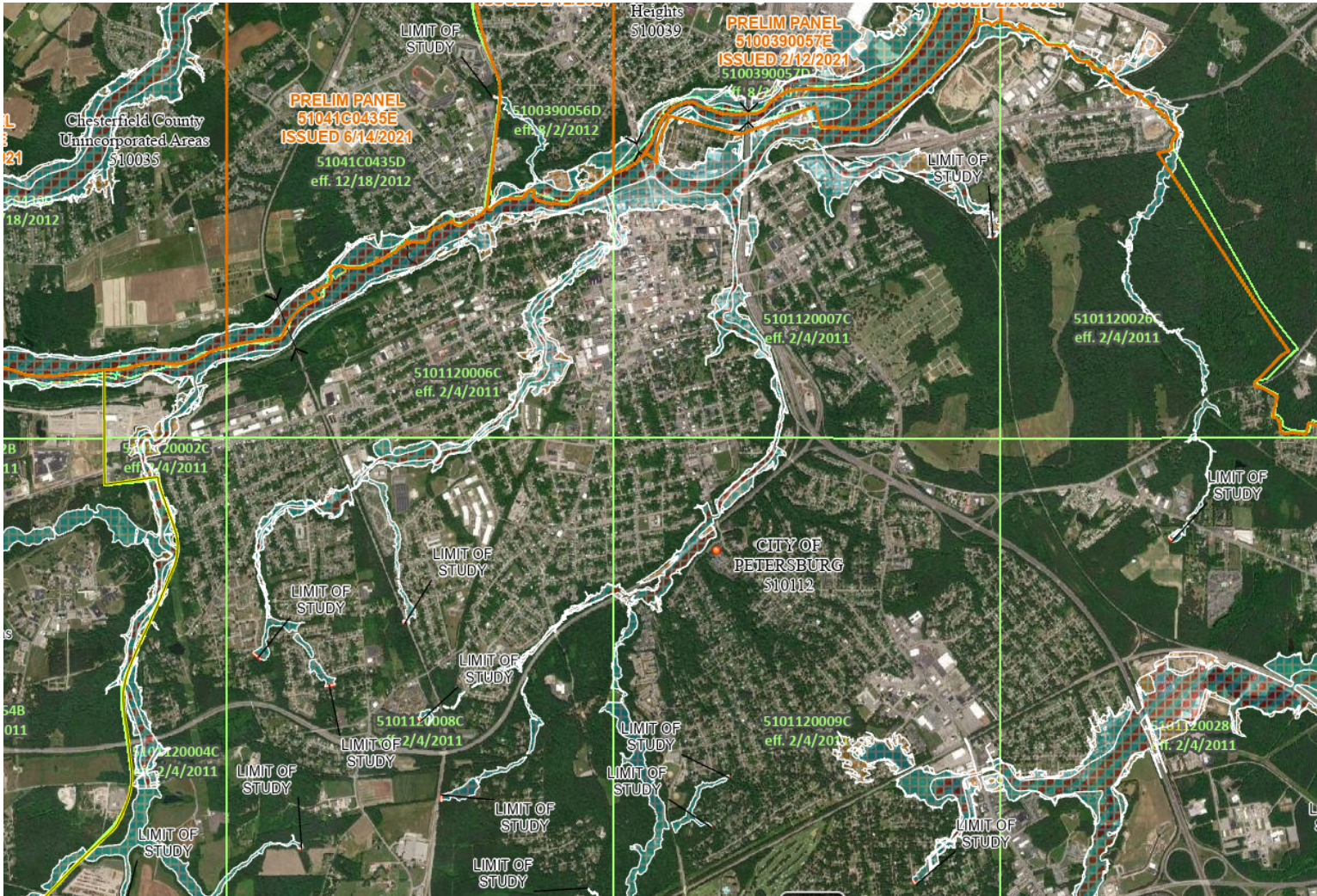
# Budget Narrative

Applicant Name: Community Flood Preparedness Fund & Resilient Virginia Revolving Loan Fund  
 Stormwater System Upgrades  
 Detailed Budget Narrative  
 Period of Performance: 2024 through 2027  
 Submission Date: 11/12/2023

Grand Total State Funding Request	\$ 1,370,000.00
Grand Total Local Share of Project	\$ -
Federal Funding (if applicable)	\$ -
Project Grand Total	\$ 1,370,000.00
Locality Cost Match	0%

Breakout By Cost Type	Personnel	Fringe	Travel	Equipment	Supplies	Contracts	Indirect Costs	Other Costs	Total
Federal Share (if applicable)									
Local Share									
State Share						\$ 1,370,000.00			\$ 1,370,000.00
Pre-Award/Startup									
Maintenance									
Total						\$ 1,370,000.00			

# COMMUNITY FLOOD PREPAREDNESS FUND HENRICO STREET DRAINAGE IMPROVEMENT PROJECT GRANT APPLICATION



## CITY OF PETERSBURG, VA

COMMUNITY ID #510112

SUBMITTED NOVEMBER 12, 2023





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# CFPF Grant Application: Projects

## 1.0 Scope of Work Narrative

### General Requirements

#### Needs and Problems

The City of Petersburg is applying for Community Flood Preparedness Fund assistance to implement a flood prevention and protection project in the Lakemont Neighborhood within the City of Petersburg; hereafter referred to cumulatively as Henrico Street Drainage Improvements. The city, and its partners, have been studying drainage patterns and localized flooding in the Lakemont neighborhood for many years. Funding from CFPF Round 3 was authorized for storm sewer system upgrades for the North Whitehill Drive Drainage Improvements, the Battlefield Flood Remediation and Drainage Improvements, and the Hare Street Storm Sewer Improvements. However, additional tasks have been identified to complete implementation of the identified projects.

*Specific problem being solved, factors which contribute to the identified problem, and why the project is needed:*

- North Whitehill Drive Drainage Improvements – Grassy swale design complete, currently securing temporary construction easements; drainage design within original project limits complete (from inlets along N. Whitehill Drive along Nash Street to tie-in of existing system at the intersection of Nash Street and S. Whitehill Drive). During drainage design, it was determined that the existing storm sewer system is inadequate, and recommendations to study potential upgrades to the existing system to outfall should be performed to determine the potential to meet current hydraulic design standards. Additional study was performed in the Battlefield Flood Remediation and Drainage Improvements; the outcome of which was a determination that extending the project limits through NPS-Battlefield property to include increasing the hydraulic capacity of the existing storm sewer system along the original line and grade is feasible. As a result, additional tasks, not previously funded, have been identified, as follows: Archeological Resource Protection Act permitting; NPS-Battlefield agency coordination; updated engineering design to extend improvements through outfall; easement/right-of-way acquisition, and environmental permitting. A portion of construction funding was previously included in CFPF Round 3 award.
- Battlefield Flood Remediation and Drainage Improvements – preliminary engineering report complete, engineering design currently underway for storm sewer system upgrades from the intersection of Henrico Street and Appleton Street to outfall along Ash Street right-of-way. Additional tasks, not previously funded, have been identified, as follows: utility conflict resolution and sanitary sewer design; VDOT coordination for easement/right-of-way acquisition.
- Hare Street Storm Sewer Improvements – City is seeking to execute a task order for preliminary engineering design to finalize the proposed alignment (previously funded in Round 3, CFPF).
- Richmond Avenue Storm Sewer Improvements – New project identified requiring rehabilitation/repair and easement/right-of-way acquisition. Round 4 CFPF funding will be used to execute a task order for preliminary engineering design to finalize the proposed design along the existing alignment and to secure appropriate easements to perform storm sewer rehabilitation to address localized flooding.

Generally, the Henrico Street Drainage Improvement Project will cover scope items not previously included in the City's request for implementation funding for Lakemont Neighborhood drainage improvements that have been subsequently identified, including project administration; permitting;

agency coordination; utility work; and engineering design. Additional funding needs for construction and other implementation-related tasks can be identified through the engineering design scope.

***How the project decreases the risk to public safety through flood risk remediation:***

Each of the sub-projects specifically address localized flooding in areas identified and studied through past initiatives in the Lakemont neighborhood, as follows:

- North Whitehill Drive Drainage Improvements – provides flood risk remediation associated with recurrent flooding along N. Whitehill Drive, decreases risk to public safety by providing adequate storm sewer system conveyance to meet current hydraulic design standards.
- Battlefield Flood Remediation and Drainage Improvements – provides flood risk remediation associated with recurrent flooding along the rear of S. Whitehill Drive and Henrico Street, decreases risk to public safety by providing adequate storm sewer system conveyance to meet current hydraulic design standards.
- Hare Street Storm Sewer Improvements – provides flood risk remediation associated with recurrent flooding at the intersection of Slagle Avenue and Hare Street, decreases risk to public safety by providing adequate storm sewer system conveyance to meet current hydraulic design standards.
- Richmond Avenue Storm Sewer Improvements - provides flood risk remediation associated with recurrent flooding at the intersection of Richmond Avenue and Courthouse Street, decreases risk to public safety by providing adequate storm sewer system conveyance to meet current hydraulic design standards.

***How the project protects or conserves natural resources:***

Adequate hydraulic conveyance and associated outlet protection protects and conserves natural resources downstream of the storm sewer system. Current design standards require storm sewer systems discharge to adequate channels with appropriate energy dissipation measures to protect and conserve natural systems downstream.

***Who is protected:***

The outcome of stable storm sewer systems with adequate conveyance capacity to meet current hydraulic design standards will provide protection for all residents and visitors of the Lakemont neighborhood.

***The safety threats or environmental concerns related to flood risk:***

The city is concerned about the safety and well-being of its residents, and the impact of historic localized flooding is apparent throughout the Lakemont neighborhood. Undersized, inadequate, and/or broken antiquated storm sewer systems throughout the neighborhood combined with the surface drainage patterns contribute to very poor drainage conditions and long-term standing water. Standing water is a significant safety threat and environmental concern related to public health and leads to damage to buildings/structures, environmental health problems, waterlogged root zones/root rot and other negative impacts on surrounding vegetation, infestation of vermin that transmit disease and cause discomfort, and potential spread of disease, including those associated with mosquito populations that thrive on wet conditions.

***Groups to be targeted who might directly benefit from this flood risk reduction effort.***

The residents and visitors of the Lakemont neighborhood will directly benefit from this flood risk reduction effort. The project will result in the improvement of structural stormwater conveyance systems that will provide community scale benefits in an underserved section of the city.

***What would happen (or not happen) if the applicant does not receive funding:***

Without round 4 CFPF funding, the city will not be able to complete the projects to provide flood risk remediation in the Lakemont neighborhood due to the extent of additional tasks that are identified as the complex projects progress through the various stages of implementation.

***Alternatives analysis of the viability of the project:***

Several alternatives have been identified and studied throughout the evolution of this collective project. In addition to the documentation provided for Round 3 of CFPF funding, the Battlefield PER is included in the supporting documentation for this Round 4 CFPF request of funding assistance.

**Goals and Objectives**

The goal of this project is completion of additional tasks not previously identified in Round 3 of CFPF funding to complete implementation of the storm sewer conveyance upgrades as detailed in the work plan below.

**Work Plan**

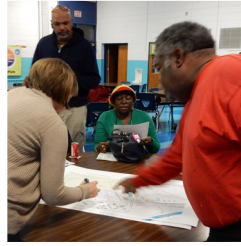
The City will utilize consultants hired to complete task orders assigned through existing on-call engineering contracts to complete the work identified for this round of funding within a three-year timeframe, as follows:

Major Activities/Tasks	Required Partners	Deliverables
Agency Coordination	National Park Service (NPS-Battlefield) VA-Department of Historic Resources (VA-DHR) VA-Department of Transportation (VDOT) Norfolk Southern Railroad (Railroad) US Army Corps of Engineers (US ACE)	Communication records
Easement Acquisition/Right-of-Way	NPS-Battlefield VDOT Private Property Owners Contractor	Land acquisition records
Permitting	NPS-Battlefield	ARPA Permit, NWP Permit
Cultural Resources Survey	VA-DHR Contractor	Final Report
Engineering Design	Contractor	Construction Documents
Project Administration and Grant Reporting	Contractor	Grant Reporting with DCR

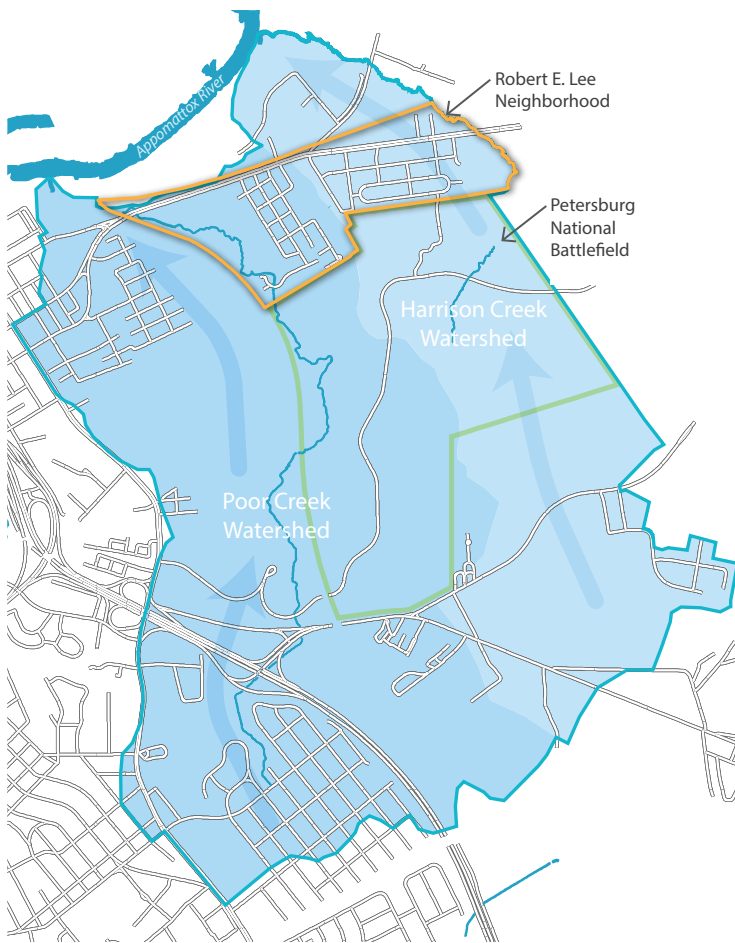
Upon installation of the proposed storm sewer system, periodic maintenance of the associated drainage inlets and pipes will be required to ensure the system maintains adequate conveyance in accordance with the Maintenance and Management Plan uploaded in the supporting documentation. Project tasks will be completed within three years of award.

**Evaluation**

Indicators of success will be clearly provided by evidence of the deliverables. Funding for initial engineering and a portion of construction of the projects was provided for in Round 3 of CFPF funding; however, additional tasks have been identified that must be completed prior to approval of final construction documents and award of construction contracts to result in successful project implementation. The city will conduct regular status meetings throughout the duration of the project to ensure all tasks are completed within the grant period of 3 years.



# Petersburg Walkable Watershed Concept Plan



Rain that falls within Poor and Harrison Creek watersheds (shown in blue) flows to Poor Creek or Harrison Creek, then to the Appomattox River and ultimately the Chesapeake Bay.

In urban areas, the stormwater drainage system, which includes a series of underground pipes, open stream channels, street gutters and ditches, can carry pollutants from streets, yards and businesses to the creek.

A walkable watershed includes neighborhood features that improve stormwater and pedestrian safety simultaneously.

## Overview

The Petersburg Walkable Watershed Concept Plan develops a shared vision and set of strategies to address flooding and improve quality of life for the Robert E. Lee (REL) neighborhood. This concept plan was developed in collaboration with the City of Petersburg, James River Association and the REL Neighborhood Watch Association.

The concept plan is based on a walkable watershed approach, which integrates the flow of water and people into a cohesive strategy to improve the overall health of a community and the surrounding watershed.

Through multiple community meetings, surveys, mapping and analysis and input from project partners, this plan identifies opportunities to:

- **Improve chronic flooding** in areas identified by residents.
- **Add on-street features** to reduce traffic speed, litter, and flooding.
- **Increase community connection** to nearby destination, parks and open space.
- **Engage and educate residents** to celebrate nearby waterways and natural resources.

Please visit: [www.walkablewatershed.com](http://www.walkablewatershed.com) or contact Darryl Walker, City of Petersburg at (804) 733-2355 or [dwalker@petersburg-va.org](mailto:dwalker@petersburg-va.org) for more information.

## Project Background

The City of Petersburg partnered with James River Association, Center for Watershed Protection and Skeo Solutions on a Walkable Watershed process in the Robert E. Lee Neighborhood. Funded by the National Fish and Wildlife Foundation, the project focused on training for City staff and community-based planning to identify opportunities to address stormwater using green infrastructure strategies and address related community quality of life goals.

## Community Assets and Challenges

The project team conducted resident surveys in late 2015-early 2016 to identify neighborhood assets and challenges. The project team shared results from the survey and initial existing condition analysis with residents during the REL Neighborhood Watch Association's month meeting on April 12. As part of that meeting, residents were asked to identify and prioritize community assets and challenges - those highlighted in **bold** represent top priorities for participants:

### Assets:

- Quiet residential neighborhood
- **REL Elementary School and youth who are active in the neighborhood**
- **Neighborhood churches and businesses**
- **Neighborhood Watch Association**
- Harrison and Poor Creeks
- Proximity to Appomattox River, Petersburg National Battlefield and other natural areas

### Challenges

- Few sidewalks
- Few play areas
- **Flooding in streets and yards**
- Littering on streets
- Few areas to walk and interact with nature or the creeks
- Perception and awareness of creeks
- **Public safety**
- **Speed of traffic**
- Few public gathering places
- **Home ownership**
- **Street lighting**
- Distance to nearest grocery store
- Few trash cans

## Existing Conditions Summary

Resident input and analysis shows there is a strong connection between existing stormwater infrastructure and where chronic flooding occurs in the neighborhood. The map on the following page identifies:

- Areas prone to flooding as experienced by residents
- Existing stormwater infrastructure and sidewalks
- Neighborhood destinations and primary routes to those destinations

Residents reported that regular flooding during and after storm events cause flooding on many streets in the REL neighborhood, shown in the photos that residents took on the following page. A combination of clogged or under sized storm inlets and lack of sidewalks makes walking difficult in these conditions.

By gaining a better understanding of location specific issues, stormwater infrastructure can be improved using a combination of traditional and green infrastructure or natural drainage strategies. Draft strategies were shared with the REL Neighborhood Watch during their April 12 meeting and based on their input, a refined concept plan was shared on June 14.

The Walkable Watershed Concept Plan on page 5 identifies opportunities to address stormwater management and flooding, improve walkability and access, and increase safety through traffic calming. A key next step will be to conduct a drainage study to better understand existing infrastructure capacity and evaluate the combination of traditional and green infrastructure strategies needed to address stormwater and flooding. The Concept Plan identifies opportunities to integrate walkability, safety, access, and amenities into these infrastructure improvements.



Residents discuss neighborhood assets and challenges.

# EXISTING CONDITIONS



## Existing Conditions

- Community Destinations
- Transit Stops
- Primary Routes
- Existing Sidewalks
- Storm Inlet
- Catch Basin
- Ditch or Concrete Channel
- Resident Reported Flooding



Photos taken by residents document the flooding that occurs during rain events. In the event of heavier rainfall, roads in the neighborhood can be hazardous to drive on due to the depth of stormwater flooding the streets. Especially when stormwater floods impervious areas, it can collect litter, debris and hazardous materials such as oil from roads. These hazardous materials, will eventually drain into storm inlets and ultimately reach the Chesapeake Bay and contribute to water pollution.

## Reduce Flooding through Natural Drainage and Complete Streets

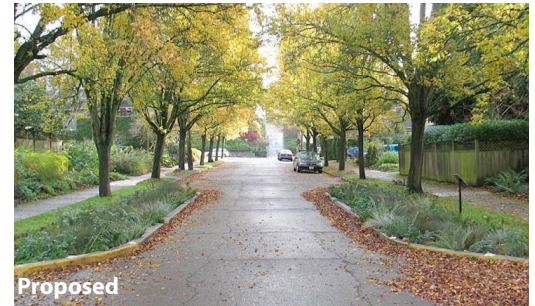
### Primary Routes

- A Slagle Avenue** - Add sidewalk to connect with new sidewalk. Narrow traffic lanes to help slow traffic. Integrate natural drainage strip between sidewalk and streets to absorb stormwater. Include on-street parking on one or both sides of street.
- B Courthouse Avenue** - Widen swale on east side of road. Clean and maintain storm drains. Consider upgrading drainage pipe at Courthouse and Appleton.



### Secondary Routes

- C Monument Avenue** - Consider installing a drainage swale on the west side of the street to allow stormwater to drain off the road and away from homes.
- D Richmond Avenue** - Add pedestrian safety amenities, such as sidewalks, or natural drainage strip where feasible.



Example of how curb extensions, street parking, and vegetation between sidewalk and street could be added along Slagle Avenue.



### Safe Crossings - Intersection Retrofit

Add natural drainage strategies like a vegetated traffic circle and/or bioretention curb extensions. Integrate bus stop and amenities such as trash cans. Add crosswalks to slow traffic at intersections.

### Swales

Consider installing grassy or planted swales along the edge of the road right of way to catch and hold stormwater during major rain events to reduce flooding. Consider pedestrians and explore adding sidewalks as part of street improvements.



Example of a planted swale during rain event



### Stormwater Infrastructure Improvements

Inspect, repair and maintain storm inlets. Consider updating infrastructure to accommodate possible increase in runoff to reduce flooding.

- E Boxwood Court** - Consider moving trash dumpster to reduce trash and litter entering Poor Creek.



With dense vegetation, absorbent soils, and underground storage capacity, rain gardens help treat stormwater and prevent flooding of homes and streets. Photo courtesy of CNT/RainReady.

### Planted Buffer Along Improved Swale

- F** Coordinate with National Battlefield (NPS) to install a swale or buffer to address flooding in backyards along Whitehill Drive.



### Rain Garden

- G** Consider installing rain garden off Hare Street to reduce on-street stormwater flooding backyards and alley.

## Integrate Public Safety and Enhance Connectivity

### Trail Connecting Pin Oak and Gibbons

- H** Improve route amenities such as overhead lighting and connect to existing trails to create neighborhood walking loop.

### Connect to Existing Trails

Improve walkability and access to community amenities by improving existing trails and connections, including to REL Elementary and National Battlefield access area. Consider planting trees along trails.



Existing entrance into Petersburg National Battlefield at Appleton Street.





## On-Street Opportunities

### Sidewalks and Natural Drainage

- Primary Route
- Secondary Route

### Safe Crossing

- Intersection Retrofit

### Natural Drainage Retrofit

- Swales

### Existing Infrastructure

- Stormwater Infrastructure Improvements

- A** Specific Recommendations

## Off-Street Opportunities

### Natural Drainage Retrofit

- Planted Buffer and Improved Swale
- Rain Garden

### Trails

- Connect to Existing Trails
- On-Street Route
- Trailhead Access

- Existing Sidewalks

- Existing Trails



**Grassy Swale Example**

Grassy swales along streets without sidewalks could address street flooding by providing holding space for stormwater during rain events -- swales are designed to drain after rain event to avoid standing water. Swales can also be designed for ease of maintenance and to minimize trash collection.

## A Hare & Slagle Green Intersection Retrofit

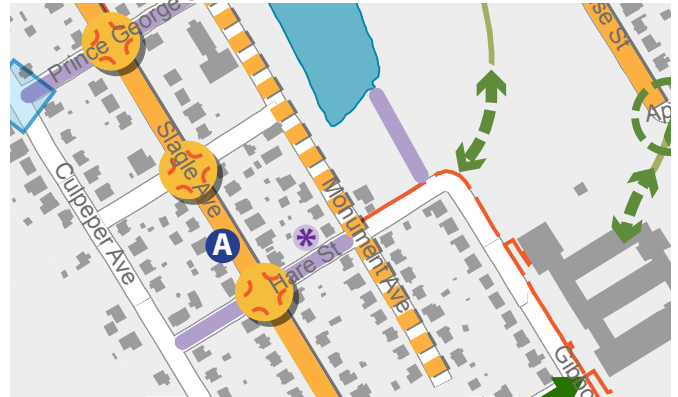
### Current Conditions

- Intersection floods regularly.
- Storm inlets regularly clogged with litter.
- No sidewalks, public trash cans or bus waiting areas.
- Cars regularly speed through intersection.

### Potential Opportunities

*Opportunities to reduce flooding, calm traffic and provide public amenities:*

- Add residential scale traffic circle with vegetation to slow traffic and collect stormwater to reduce flooding.
- Add sidewalks and public transportation waiting area to increase pedestrian safety.
- Include crosswalks at intersection of Slagle and Hare Streets.
- Add public trash can at all public transportation waiting areas to reduce neighborhood litter.



Example of a vegetated traffic circle in a residential neighborhood that slows traffic, collects stormwater and adds aesthetic value. A drainage study will identify whether there is adequate road width and right of way to accommodate a traffic circle.

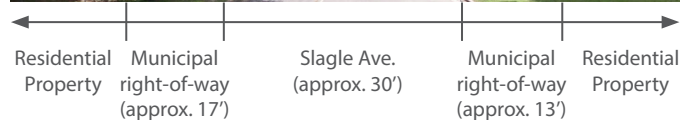
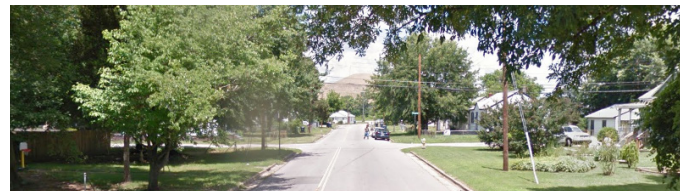
## Complete Street on Slagle and Courthouse

### Current Conditions

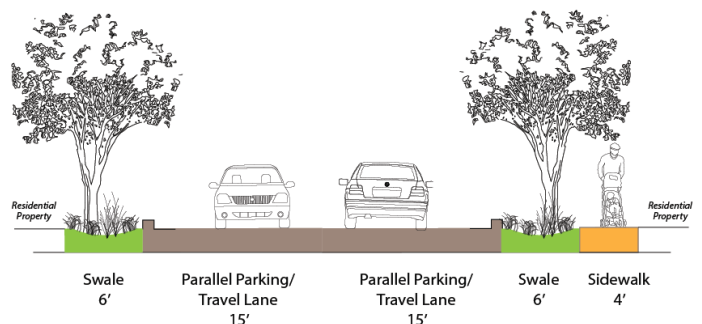
- Main roads lack sidewalks.
- Cars regularly speed on residential roads.
- Regular flooding makes walking, biking and driving unsafe after major storm events.
- Wide residential streets, parking on one or both sides and municipal right-of-way on both sides of street.

### Potential Opportunities

- Add sidewalks on one side of street, crosswalks at intersections, and include additional storm inlets where appropriate.
- Include vegetated bump-outs or swales in municipal right-of-way where appropriate to collect stormwater off-street and calm traffic. For example, with approximately 60' of public right-of-way on Slagle Avenue, there is potential to re-design main roadways to incorporate sidewalks and green infrastructure practices.



Existing Street Dimensions - Slagle Avenue



Example of how a sidewalk and stormwater swales can be incorporated within a portion of the right-of-way.

## F Planted Buffer and Improved Swale

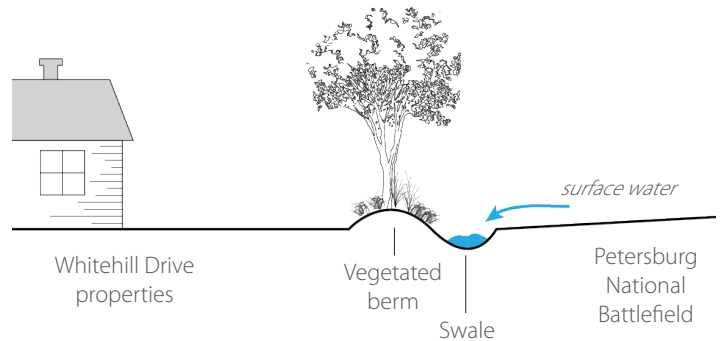
### Current Conditions

- Existing swale on Petersburg National Battlefield is undersized and filled in with tree roots.
- Residential backyards along swale regularly flood, sometimes up to homes.
- Existing stormwater pipe at Henrico Street for swale is undersized.
- Petersburg National Battlefield needs to maintain vegetative buffer for park aesthetics.

### Potential Opportunities

#### *Opportunities to reduce flooding and improve aesthetics:*

- Resize existing swale to increase capacity to hold and move water during storm events.
- Redesign swale to include a vegetated berm on the northern side to prevent flooding in residential backyards.
- Consider planting native evergreen water tolerant shrubs to provide a buffer between park and homes.



A planted buffer along an expanded swale will allow surface water draining from the Petersburg National Battlefield to be collected without flooding residential properties and maintain a visual buffer between residential neighborhood and the park.

## Potential Community Programs

### Adopt a Drain Program

Develop an 'Adopt a Drain' program, modeled from other programs around the country. Residents adopt a drain and help keep it clear of trash and debris and report any issues to the City. The program connects residents with their local utility staff. The neighborhood's ~70 drains could be adopted by resident volunteers. Tools could be provided including rakes, brooms, trash bags, safety vests and shovels could be requested via grants. Program could be expanded to include swales or other natural drainage features.



### Litter and Debris Reduction

Coordinate with community organizations on education and outreach on:

- promoting litter prevention and removal
- organizing community clean up days
- installing public trash cans and signs that celebrate Poor Creek, Harrison Creek and the Appomattox River.

### Public Art as Cue to Care/Education

Work with local artists to design storm drain art to illustrate that rainwater drains to local waterways. Engage residents in the design and identifying key locations for storm drain art and/or storm drain markers.



Photos: (top) residents can Adopt-a-Drain and place medallions on top to educate the community about where stormwater goes; (bottom) public art can be an educational tool to promote awareness and stewardship.

## Next Steps

Key next steps include securing funding for a drainage study to better understand infrastructure capacity and design solutions. The following principles for implementation can guide next steps for moving forward.

- **Build Partnerships** - Strengthen existing and develop new partnerships between federal, state and local governments and community organizations for implementation and stewardship.
- **Grow Community Stewardship** - Continue to grow and foster community stewardship through outreach, education and opportunities for community involvement.
- **Engage Youth** - Build on existing youth programs and initiatives to engage youth in environmental education opportunities. As projects move forward, invite youth to participate in the design process and in the designing and building of outdoor play and learning areas.
- **Seek Funding** - Develop a plan to seek funding, including a list of potential grants and associated deadlines. Assemble teams early to develop winning proposals. Continue to seek opportunities that cross programs and initiatives to leverage funding for projects.
- **Phase Projects Over Time** - While some recommendations may be implemented in the near term, some projects will need to be phased over time. Develop an action list to coordinate initiatives and projects among partners. Continue to refine ideas during the design process.
- **Celebrate Successes!** - Sustain momentum and support by celebrating successes along the way.

## Potential Partners and Funding Sources

The following organizations have been identified as potential partners and collaborators with the REL Neighborhood to address community goals and address stormwater concerns:

- City of Petersburg (Department of Parks & Leisure, Public Works, Department of Health)
- National Parks Conservation Association
- National Park Service
- Robert E Lee Elementary Parent Teacher Association
- Friends of the Lower Appomattox River
- Fort Lee - Corps Volunteer Coordinator
- Habitat for Humanity
- Project Home
- Petersburg Area Community Development Corporation
- Crater Planning District
- Cameron Foundation
- Faith & Hope Baptist Church
- WOW Camp
- Boy Scouts of America - Area troops
- Petersburg City Council - Ward 1 Councilperson

Potential Funding Sources	Deadlines and Funding
National Fish and Wildlife Foundation <i>Innovative Nutrient and Sediment Reduction Grant</i>	Up to \$750,000. The proposal submitted by James River Association in May 2016 for drainage study, coalition building, and adopt a drain pilot program was not awarded. Reapply in Spring 2017.
National Park Service <i>Park Project Planning</i>	As part of their annual budget planning, Petersburg National Battlefield can apply to NPS for funding for specific projects, this could include funds to address the swale project (see H on Concept Plan). A drainage study or further assessment of this area could inform the design of this drainage system.
City of Petersburg <i>Community Development Block Grant</i>	Up to \$600,000 is awarded to Petersburg each year from U.S. Housing and Urban Development. Deadline for proposals is the second Friday in January each year.

For more information about the project, please visit: [www.walkablewatershed.com](http://www.walkablewatershed.com) or contact Darryl Walker, City of Petersburg at (804) 733-2355 or [dwalker@petersburg-va.org](mailto:dwalker@petersburg-va.org).

## **No Adverse Impact**

The drainage improvement project will be designed to create no disruption in the storm system's capacity to manage flow, and improving the system will have a positive impact and decrease flooding in the areas where improvements are carried out. Thus, the activities of this project will impose no adverse impact upon the properties and will actually decrease flood vulnerabilities.

## **Ability to Provide Share of Cost**

The City has been working to address flooding and stormwater management for many years and has recently made significant progress in the Lakemont Neighborhood using key partnerships and grant funding assistance outside of CFPF. The City is a low-income geographic area, as defined in the CFPF Grant Manual, as an area where the median household income (\$44,890) is significantly less than 80% of the local median household income (\$80,615 in VA), according to the US Census Data in 2022<sup>1</sup>. Further, several areas in the City are designated as Qualified Opportunity Zones, as presented in the supporting documentation. Given these constraints, the City Manager has respectfully requested a waiver to match funds and that the cost of this project be covered in its entirety by the Fund.

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<sup>1</sup> <https://www.census.gov/quickfacts/fact/table/petersburgcityvirginia,VA/PST045222>

## **Benefit Cost Analysis**

As this project's total requested funding does not exceed \$2,000,000, a BCA is not required for this application.

## **Repetitive Loss and/or Severe Repetitive Loss Properties**

The City is working with DCR to obtain any repetitive loss and/or severe repetitive loss data for use in administering the requested funding application.



## Maintenance and Management Plan

January 2023 – January 2033

All proposed stormwater system upgrade projects will be maintained in accordance with the City's Virginia Stormwater Management Program (VSMP) which includes ongoing preventative maintenance of the storm drain system, including vacuuming inlet and manhole structures and jetting storm sewer pipes, as needed. Routine inspections of stormwater management facilities, and corrective maintenance, are also performed in accordance with the City's VSMP and Municipal Separate Storm Sewer System (MS4) Permit. The maintenance and management plan is funded by the City's Stormwater Utility fee. Maintenance is performed by the City's Department of Public Works- Street Operations Division.