

3663 - CID510122_CityofManassas_CFPF-2 City of Manassas Flood Hazard Assessment & Mitigation Study for the Cabin Run and Buckhall Branch Watersheds

Application Details

Funding Opportunity:

3294-Virginia Community Flood Preparedness Fund - Study Grants - CY25 Round 6

Funding Opportunity Due Date: Dec 1, 2025 11:59 PM

Program Area: Virginia Community Flood Preparedness Fund

Status: Under Review

Stage: Final Application

Initial Submit Date: Nov 20, 2025 1:51 PM

Initially Submitted By: Ami Billman

Last Submit Date:

Last Submitted By:

Contact Information

Primary Contact Information

Active User*: Yes

Type: External User

Name*: Mrs. Ami Middle Name Billman
Salutation First Name Last Name

Title: Stormwater Program Adminsitrator

Email*: abillman@ci.manassas.va.us

Address*: 9027 Center Street

Manassas Virginia 20110
City State/Province Postal Code/Zip

Phone*: 703-257-8316 Ext.
Phone

###-###-####

Fax: ###-###-####

Comments:

Organization Information

Status*: Approved

Name*: City of Manassas

Organization Type*: City Government

Tax ID*: 54-6001411

Unique Entity Identifier (UEI)*: EUD6N1LLGKM5

Organization Website: https://www.manassasva.gov/engineering/all_about_stormwater/index.php

Address*: 9027 Center Street

Phone*: Manassas Virginia 20110-
City State/Province Postal Code/Zip
703-257-8316 Ext.
###-###-####

Fax: ###-###-####

Benefactor:

Vendor ID:

Comments:

VCFPF Applicant Information

Project Description

Name of Local Government*: City of Manassas

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

NFIP/DCR Community Identification Number (CID)*: 510122

If a state or federally recognized Indian tribe,

Name of Tribe:

Authorized Individual*: Ami Billman
First Name Last Name

Mailing Address*: 9027 Center Street
Address Line 1
Address Line 2

Manassas Virginia 20110
City State Zip Code

Telephone Number*: 703-257-8316

Cell Phone Number*: 571-229-6259
Email*: abillman@manassasva.gov

Is the contact person different than the authorized individual?

Contact Person*: No

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

Project Description*:

A study to assess flood hazards and flood risks for selected watersheds within the City and identify potential flood mitigation measures that could be implemented to reduce flood risks within the watersheds. This study will address both riverine and pluvial flooding, urban flooding, drainage issues, and identify measures for the mitigation of the flood hazards. The chosen study area is the Buckhall Branch and Cabin Run watersheds which is identified as a critical flood hazard location.

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

Census Block(s) Where Project will Occur*: C51683

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): 51153C0177D

Eligibility - Round 4

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

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

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*:

Yes

Yes - Eligible for consideration

No - Not eligible for consideration

N/A - Match not required

Scope of Work - Studies - 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*:

CID510122_CityofManassas_CFPF-2_ScopeOfWork_Narrative.pdf

Comments:

Project Scope of Work addresses the proposed activity, importance of activity, goals & objectives, work plan, and future evaluation related to the study to assess flood hazards and flood risks for Buckhall Branch and Cabin Run watersheds.

Budget Narrative**Budget Narrative Attachment*:**

CID510122_CityofManassas_CFPF-2_Budget_Narrative.pdf

Comments:

Project Budget Narrative provides a detailed budget related to the three-phase study assessing flood hazards and flood risks for Buckhall Branch and Cabin Run watersheds.

Scoring Criteria for Studies - Round 4

Scoring

Revising floodplain ordinances to maintain compliance with the NFIP or to incorporate higher standards that may reduce the risk of flood damage. This must include establishing processes for implementing the ordinance, including but not limited to, permitting, record retention, violations, and variances. This may include revising a floodplain ordinance when the community is getting new Flood Insurance Rate Maps (FIRMs), updating a floodplain ordinance to include floodplain setbacks or freeboard, or correcting issues identified in a Corrective Action Plan.

Revising Floodplain

Yes

Ordinances*:

Select

Creating tools or applications to identify, aggregate, or display information on flood risk or creating a crowd-sourced mapping platform that gathers data points about real-time flooding. This could include a locally or regionally based web-based mapping product that allows local residents to better understand their flood risk.

Mapping Platform*:

No

Select

Conducting hydrologic and hydraulic studies of floodplains. Applicants who create new maps must apply for a Letter of Map Revision or a Physical Map Revision through the Federal Emergency Management Agency (FEMA).

Hydrologic and Hydraulic Studies*: Yes
Select

Funding of studies of statewide and regional significance and proposals will be considered for the studies listed below - Up to 45 points

Studies and Data Collection of Statewide and Regional Significance Scoring:

Updating precipitation data and IDF information (rain intensity, duration, frequency estimates) including such data at a sub-state or regional scale on a periodic basis. (45)

Regional relative sea level rise projections for use in determining future impacts. (45)

Vulnerability analysis either statewide or regionally to state transportation, water supply, water treatment, impounding structures, or other significant and vital infrastructure from flooding. (45)

Flash flood studies and modeling in riverine regions of the state. (45)

Statewide or regional stream gauge monitoring to include expansion of existing gauge networks. (45)

New or updated delineations of areas of recurrent flooding, stormwater flooding, and storm surge vulnerability in coastal areas that include projections for future conditions based on sea level rise, more intense rainfall events, or other relevant flood risk factors. (45)

Regional flood studies in riverine communities that may include watershed scale evaluation, updated estimates of rainfall intensity, or other information. (45)

Regional hydrologic and hydraulic studies of floodplains. (45)

Studies of potential land use strategies that could be implemented by a local government to reduce or mitigate damage from coastal or riverine flooding. (40)

Other proposals that will significantly improve protection from flooding on a statewide or regional basis (35)

Studies and Data Collection of Statewide and Regional Significance*:

Regional flood studies in riverine communities that may include watershed scale evaluation, updated estimates of rainfall intensity, or other information

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*: Low Social Vulnerability

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

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*: Yes

Comments:

This is a study that will identify and prioritize future watershed capital improvement projects for the City. These projects would be evaluated and remediations chosen to obtain nutrient removal credit supporting the Chesapeake Bay TMDL goals.

Scope of Work Supporting Information - Studies

Scope of Work Supporting Information

Is the proposed study a new study or updates on a prior study?

New or Updated Study*: New Study

Describe the relationship of the study to the local government's needs for flood prevention and protection, equity, community improvement, identification of nature-based solutions or other priorities contained in this manual

Relationship of Study to Priorities Contained in this Manual*:

The City of Manassas is pleased to submit this 2025 Virginia Community Flood Preparedness Fund grant application to provide matching funds for the development of a Flood Hazard Assessment and Mitigation Study. Accordingly, this grant request is for the 'Study' category. This work is going to support the City's 2040 goal to protect, enhance, and restore the integrity of the City's water resources (Chapter 8 - Environmental Sustainability & Health web.pdf). It will investigate and assess current and future possible flood hazards within the Buckhall Branch and Cabin Run watersheds in the City of Manassas, and suggest possible mitigation plans to address identified flooding issues.

Describe the qualifications of the individuals or organizations charged with conducting the study or the elements of any request for proposal that define those qualifications

Qualifications of Individuals Conducting Study*:

-Jeff Cowan PE, has extensive experience as a Water Resources Engineer, including drainage design, stormwater management, and floodplain management. He is responsible for managing the planning and design of water resources projects, including stormwater management facilities, lakes and dams, drainage structures, channel improvements, and hydraulic structures. Jeff has been a consultant to local municipalities for the purpose of establishing and updating local stormwater and floodplain management criteria and policies. Mr. Cowan's particular expertise is in the design and rehabilitation of dams and stormwater management facilities. He was involved in the pilot flood hazard study for the Cockrell Branch watershed. BS - Civil Engineering, PE - VA License # 0402019977, 44 years

-Lora Baumgartner, PE, CFM; is a Water Resource Engineer, recently promoted to project manager, with experience in hydrologic and hydraulic modeling, floodplain studies, design and analysis of stormwater management and best management practice facilities, minor site plans, dam inspection, dam break analysis, dam retrofit design, and stream stabilization. She was involved in the pilot flood hazard study for the Cockrell Branch watershed. BS - Civil Engineering, PE - VA License # 0402062357; Certified Floodplain Manager; DEQ Combined SWM; DEQ Combined ECS, 9 years

-Karsten Zuidema, PE, CFM; is a Water Resources Engineer with a strong emphasis towards floodplain management and stormwater management. Since joining Dewberry in 2022, he has worked on multiple dam

break studies, FEMA and county floodplain studies, stormwater management facility designs, and other stormwater related projects. He was involved in the pilot flood hazard study for the Cockrell Branch watershed. His software skills include ArcGIS Pro, PondPack, Civil3D, HEC-HMS, 1-D and 2-D HEC-RAS, HY-8, Flowmaster, SITES, Excel VBA, and Python. MS - Civil Engineering, PE - VA License # 0402070210; Certified Floodplain Manager, 4 years

Describe the expected use of the study results in the context of the local resilience plan or, in the case of regional plans, how the study improves any regional approach

Expected use of Study Results*:

-The three-phase study is to assess flood hazards and flood risks for selected watersheds within the City and identify potential flood mitigation measures that could be implemented to reduce flood risks within the watersheds. This work will address both riverine and pluvial flooding, urban flooding, drainage issues, and identify possible measures for the mitigation of the flood hazards. The study area has been chosen as the Buckhall Branch and Cabin Run. A similar project (flood hazard assessment) to the south was completed for the City's Cockrell Branch watershed which served as a pilot program, the results informed the scope of future watershed flood hazard assessments. Accordingly, the work for the Buckhall Branch and Cabin Run Watersheds Flood Hazard Assessment will be similar to the pilot project, informed by lessons learned, utilizing a phased approach. The 2024 Round 5 CFPF grant was awarded to the City for a similar study of the Flat Branch Trib. A watershed (CFPF ID: 2687). In addition to the Buckhall Branch and Cabin Run watersheds, the City is applying for 2025 Round 6 CFPF grant funding for the Russia Branch watershed to the north. Although the watersheds selected for this grant application do not have FEMA Flood Hazard Areas, they are important for understanding the comprehensive flood hazards in the City by connecting two preceding studies: Cockrell Branch and Russia Branch. This study will improve the City's understanding of fluvial flooding with the inclusion of a simplified floodplain study for major drainage ways. The City desires to perform similar studies in the future for all the watersheds within the City.

-The floodplain mapping will be based on updated hydrologic and hydraulic analysis. With that, the storm water network will be investigated to identify any major issues contributing to flooding. After analyzing the reported and prospective flood hazards, conceptual flood mitigation plans will be developed for those locations subject to the greatest flood risks, allowing for the City and residents to identify sustainable solutions to mitigate repetitive flood incidents and to take actions that could reduce susceptibility to future flood risks. The intent of this study is to identify both sustainable and resilient measures that when implemented will reduce the impact of regular flood events, as well as losses from excessive future floods resulting from extreme storm.

If applicable, describe how the study may improve Virginia's flood protection and prevention abilities in a statewide context (type N/A if not applicable)

Statewide Improvements*:

N/A

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

Repetitive Loss and/or Severe

Repetitive Loss Properties*:

CID510122_CityofManassas_CFPF-2_Cabin_Buckhall_Repetative Loss Status.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 these structures in the project area

Residential and/or Commercial Structures*:

- The Buckhall Branch watershed starts from Fairview Ave in the west and ends downstream of Liberia Ave at the city/county line. The total area of the watershed is approximately 0.291 sq. miles. The approximate imperviousness of the total watershed is 50%. The watershed is primarily covered with suburban development (primarily single family detached residential) in the northern parts of the watershed and commercial areas in the

eastern parts of the watershed. These highly traveled areas lead to the road system being a critical structure for the residents and surrounding areas, including Wellington Road, Richmond Ave, and Liberia Ave. The watershed is comprised of 383 residential structures, a variety of single family and multi-use housing. In regard to commercial properties, there are 14 commercial structures.

- The Cabin Run watershed starts from Wellington Road in the north and ends downstream of Hastings Drive at the city/county line. The total area of the watershed is approximately 0.495 sq. miles. The approximate imperviousness of the total watershed is 45%. The watershed is primarily covered with suburban development (primarily single family detached residential) throughout the watershed. These highly traveled areas lead to the road system being a critical structure for the residents and surrounding areas, including Hastings Drive and Wellington Road. The watershed is comprised of 680 residential structures, a variety of single family and multi-use housing. In regard to commercial properties, there are 3 commercial structures plus one school, Metz Middle School.

- There is one park within the Buckhall Branch watershed, Oakenshaw Park and one park within the Cabin Run watershed area, Kinsley Mill Park.

- The area is recognized as low socially vulnerable by running the VFRIS (Virginia Flood Risk Information System) social vulnerability index.

- Per the 2016-2020 American Community Survey 5-year Estimate (Transportation Board), the Cabin Run and Buckhall Branch watersheds are in an Equity Emphasis Area, with a higher concentration of low-income, traditionally disadvantaged racial and ethnic population groups.

- The recently discontinued Equitable Transportation Community Explorer (ETCE) was used to address historical underinvestment in disadvantaged communities to those communities most affected by climate change, pollution, and environmental hazards. The tool indicated disadvantaged communities within the Cabin Run and Buckhall Branch watersheds.

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

Critical Facilities/Infrastructure*:

- The Oakenshaw Ponds, located in the Buckhall Branch watershed, are documented on the Oakenshaw Section III site plan dated 1986. These ponds were designed as in-line extended detention ponds to control primarily residential and roadway runoff from multiple inflows. Previous reports indicate that these ponds experience or contribute to occasional localized flooding. Although the Oakenshaw Ponds were developed to manage stormwater and reduce downstream flood impacts, some areas of the watershed upstream of the ponds are susceptible to both fluvial and pluvial flood hazards.

- The Owens Brooke Ponds, located in the Cabin Run watershed, are documented on the Owens Brooke Section I site plan dated 1983. These ponds were designed as in-line wet ponds to control primarily residential and roadway runoff from multiple inflows. Reports indicate severe stream erosion in the conveyance system downstream of Pond 2. Although the Owens Brooke Ponds were developed to manage stormwater and reduce downstream flood impacts, some areas of the watershed upstream of the ponds are susceptible to both fluvial and pluvial flood hazards.

- Metz Middle School in the Cabin Branch watershed is an intermediate school providing services to over 1100 students in grades seventh through eighth.

- The Buckhall Branch watershed is primarily covered with suburban development (primarily single family detached residential) in the northern parts of the watershed and commercial areas in the eastern parts of the watershed. The approximate imperviousness of the total watershed is 50%. These highly traveled areas lead to the road system being a critical structure for the residents and surrounding areas, including Wellington Road, Richmond Ave, and Liberia Ave. There is one park that is within the watershed, Oakenshaw Park.

- The Cabin Branch watershed is primarily covered with suburban development (primarily single family detached residential) throughout the watershed. The approximate imperviousness of the total watershed is 45%. These highly traveled areas lead to the road system being a critical structure for the residents and surrounding areas, including Hastings Drive and Wellington Road. There is one park that is within the watershed area, Kinsley Mill Park.

Budget

Budget Summary

Grant Matching Requirement*: Flood Prevention and Protection Studies - Fund 50%/Match 50%

Is a match waiver being requested?

Match Waiver Request No

Note: Only low-income communities are eligible for a match waiver
*:

Total Project Amount (Request + Match)*: \$198,374.50
**This amount should equal the sum of your request and match figures

REQUIRED Match Percentage Amount: \$99,187.25

BUDGET TOTALS

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

Match Percentage:

50.00%
Verify that your match percentage matches your required match percentage amount above.

Total Requested Fund Amount: \$99,187.25

Total Match Amount: \$99,187.25

TOTAL: \$198,374.50

Personnel

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

Fringe Benefits

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

Travel

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

Equipment

Description	Requested Fund Amount	Match Amount Match Source
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
Phase 1: Task 1 - Initial Data Acquisition and Review	\$3,692.13	\$3,692.13	Stormwater Fund
Phase 1: Task 2 - Detailed CCTV Report Evaluation	\$5,552.32	\$5,552.32	Stormwater Fund
Phase 1: Task 3 - Initial Field Visits	\$2,055.18	\$2,055.18	Stormwater Fund
Phase 1: Task 4 - Perform GIS Sump Analysis	\$1,085.31	\$1,085.31	Stormwater Fund
Phase 1: Task 5 - Perform Simplified Floodplain Study	\$8,184.79	\$8,184.79	Stormwater Fund
Phase 1: Task 6 - Generate List of Potential Flooding Locations	\$3,376.54	\$3,376.54	Stormwater Fund
Phase 1: Task 7 - Create GIS Base Map	\$2,119.31	\$2,119.31	Stormwater Fund
Phase 1: Task 8 - Prepare Draft Report	\$4,587.58	\$4,587.58	Stormwater Fund
Phase 1: Task 9 - Meetings and Coordination	\$3,869.17	\$3,869.17	Stormwater Fund
Phase 2: Task 1 - Field Survey and Follow-up Field Visits	\$4,515.77	\$4,515.77	Stormwater Fund
Phase 2: Task 2 - Simplified Hydrologic and Hydraulic (H&H) Analysis	\$7,966.69	\$7,966.69	Stormwater Fund
Phase 2: Task 3 - Site Plan Assessment	\$1,354.72	\$1,354.72	Stormwater Fund
Phase 2: Task 4 - Simplified Dam Break Inundation Zone Analysis	\$7,107.15	\$7,107.15	Stormwater Fund
Phase 2: Task 5 - Validation of Simplified Modeling Results	\$4,679.94	\$4,679.94	Stormwater Fund
Phase 2: Task 6 - Update and Finalize GIS Base Map	\$1,498.40	\$1,498.40	Stormwater Fund
	\$99,187.25	\$99,187.25	

Description	Requested Fund Amount	Match Amount Match Source
Phase 2: Task 7 - Generate List of Flood Hazard Remediation Concept Locations	\$2,021.82	\$2,021.82 Stormwater Fund
Phase 2: Task 8 - Update Draft Report	\$3,073.78	\$3,073.78 Stormwater Fund
Phase 2: Task 9 - Meetings and Coordination	\$3,869.17	\$3,869.17 Stormwater Fund
Phase 3: Task 1 - Development of Flood Hazard Remediation Concepts	\$20,952.03	\$20,952.03 Stormwater Fund
Phase 3: Task 2 - Preparation of Final Report	\$3,756.28	\$3,756.28 Stormwater Fund
Phase 3: Task 3 - Meetings and Coordination	\$3,869.17	\$3,869.17 Stormwater Fund
	\$99,187.25	\$99,187.25

Pre-Award and Startup Costs

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

Other Direct Costs

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

Supporting Documentation

Supporting Documentation

Named Attachment	Required Description
Detailed map of the project area(s) (Projects/Studies)	Detailed map of the Cabin Run and Buckhall Branch watersheds.
FIRMette of the project area(s) (Projects/Studies)	Cabin Run and Buckhall Branch FIRMette
Historic flood damage data and/or images (Projects/Studies)	Cabin Run and Buckhall Branch Historical Flood

Named**Attachment****Required Description**

A link to or a copy of the current floodplain ordinance

Floodplain Ordinance

Maintenance and management plan for project

A link to or a copy of the current hazard mitigation plan

City of Manassas Hazard Mitigation Plan: 2022 Northern Virginia Hazard Mitigation Plan, 2023 Management Plan, 2024 Damage Assessment Plan, 2025 Emergency Operations Plan

A link to or a copy of the current comprehensive plan

City of Manassas Comprehensive Plan
https://www.manassasva.gov/community_development/planning_and_zoning/comprehensive_plan

Social vulnerability index score(s) for the project area

Cabin Run and Buckhall Branch SVI

Authorization to request funding from the Fund from governing body or chief executive of the local government

Authorization by COM City Manager to pursue the funding opportunity and verification of ability by utilizing the Stormwater Fund.

Signed pledge agreement from each contributing organization

Maintenance Plan

Benefit-cost analysis must be submitted with project applications over \$2,000,000. in lieu of using the FEMA benefit-cost analysis benefits and value. The narrative must explicitly indicate the risk reduction benefits of a flood mitigation project and compare

Benefit Cost Analysis

Other Relevant Attachments

Cabin Run and Buckhall Branch Overall Plan

Letters of Support**Description****File Name****Type****Size****Upload Date**

No files attached.

