

3780 - Debris Flow Risk Analysis in Wise County

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 25, 2025 4:02 PM

Initially Submitted By: Jessica Swinney

Last Submit Date:

Last Submitted By:

Contact Information

Primary Contact Information

Active User*: Yes

Type: External User

Name*: Mrs. Jessica Swinney
Salutation First Name Last Name

Title:

Email*: gio@wisecounty.org

Address*: 206 E Main St

Wise Virginia 24293
City State/Province Postal Code/Zip

Phone*: 276-219-1393 Ext.

Phone

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

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

Comments:

Organization Information

Status*: Approved
Name*: County of Wise, VA
Organization Type*: Local Government
Tax ID*: 546001688
Unique Entity Identifier (UEI)*: 195
Organization Website:
Address*: 206 E Main St Rm 210
PO Box 570

Wise Virginia 24293-
City State/Province Postal Code/Zip

Phone*: 276-328-7110 Ext.
###-###-####

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

Benefactor:

Vendor ID:

Comments:

VCFPF Applicant Information

Project Description

Name of Local Government*: County of Wise

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

NFIP/DCR Community 510174

Identification Number (CID)*:

If a state or federally recognized Indian tribe,

Name of Tribe:

Authorized Individual*: Michael Hatfield
First Name Last Name

Mailing Address*: 206 E Main St
Address Line 1
PO Box 570
Address Line 2

Wise Virginia 24293
City State Zip Code

Telephone Number*: 276-328-2321

Cell Phone Number*: 276-298-5411

Email*: hatfield_m@wisecountyva.gov

Is the contact person different than the authorized individual?

Contact Person*: Yes

Contact: Jessica Swinney
First Name Last Name

206 E Main St

Address Line 1

PO Box 570

Address Line 2

Wise Virginia 24293

City State Zip Code

Telephone Number: 276-219-1393

Cell Phone Number: 276-219-1793

Email Address: swinney_j@wisecountyva.gov

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

Project Description*:

This is a new study that seeks to improve existing flood maps by incorporating flood risk due to debris blockage at stream features such as bridges, but other features and their impact may be analyzed as well such as sudden changes in stream profile or direction.

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*:

511959314002 511959314003 511959315003 511959307001 511959315004 511959313002 511959312002

511959310

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

Is Project Located in a Special Flood Hazard Area?*: Yes

**Flood Zone(s)
(if applicable):**

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

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*:

- Yes
- 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*: SOW Debris Flow Risk Analysis in Wise County.pdf

Comments:

Budget Narrative

Budget Narrative Attachment*: Budget Narrative Debris Flow Risk Analysis in Wise County.pdf

Comments:

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
Ordinances*:**

- No
- 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*: No 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*: Flash flood studies and modeling in riverine regions of the state

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

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

NEIP*: 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

Comments:

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*:

In the Flood Resilience Plan Roadmap for the Lenowisco PDC, areas for improvement in Wise County included a.) more details and regulations surrounding infrastructure installation for flood disasters, b.) use of nature-based solutions in flood control, c.) documenting natural resource vulnerability, d.) encouragement of green infrastructure and e.) conduct a risk assessment on socially vulnerable populations. This study will improve flood risk estimates which is the first step to address the above needs. It is expected that we will see additional areas subject to flood risk, and this data can be used in subsequent proposals for flood mitigation projects.

The 2021 LENOWISCO Hazard Mitigation Plan was created by the LENOWISCO Planning District Commission to assess the risk of natural hazards in the district and to identify priority mitigation actions. Throughout the LENOWISCO Hazard Mitigation Plan, flooding emerges as one of the most pressing natural hazards that they identify.

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*:

The Uncrewed Systems Lab at Virginia Tech (<https://usl.me.vt.edu>) has been involved in post-disaster data collection, modeling and analysis beginning with work in Malawi at the Dzaleka Refugee camp in 2020 [4], which has experienced increased flood risk as the camp grows beyond its original planned size. The USL then pivoted to work in Buchanan County with the Hurley flood of August, 2021 [5] and to Washington County with a response to Hurricane Helene. The lab supports graduate and undergraduate students in Mechanical/Electrical/Aerospace Engineering, Geography, and Computational Methods and Data Analysis - all fields that are well aligned with the required activities for this project.

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 Wise County Resilience Plan will be updated based on the outcomes of this study as new flood risks, vulnerabilities and opportunities will be identified that directly impact the plan. Virginia Tech will work with Wise County to ensure updates correctly reflect the new study results.

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*:

While this study is centered on Wise County, it is generally applicable to the topographical and geological features found in the Lenowisco and Mount Rogers Planning Districts. For this reason, the methods developed in this study can be applied throughout Southwest Virginia. The flooding that occurred in Damascus and Taylors Valley show the importance of this work and how flood risk estimates can be improved, with a lowering of flood risk possible through recommended infrastructure improvements.

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 Appendix C_item3.pdf

Repetitive Loss Properties*:

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 flood risk map for Appalachia, Virginia shows a large number of structures subject to elevated flood risk, with 40% of all properties at risk of flooding in the next 30 years (First Street Foundation). This high percentage does not reflect the increased risk due to bridges over the Powell River and Callahan Creek. Figure 6 shows the location of the Kilbourne Ave Bridge that is located over the Powell River in the center of town. The existing FEMA flood map shows that half of the community south of the bridge is unlikely to experience any flooding at all, even at a 0.2% chance. Blockages will likely increase those chances of flooding significantly.

Additionally, Andover to the north of Appalachia shows considerable flood risk along Callahan Creek, but there are also four bridges along the length of the settlement causing additional risk. Upstream, the community is surrounded by reclaimed mine land and mine spoils deposits which have been shown to elevate landslide risk. This is a particularly concerning area due to heavy industrialization which can result in hazardous waste movement downstream if flooding occurs.

Tacoma Area: Residential 355, Commercial 72 Town of Wise: Residential 196, Commercial 32 Town of Pound: Residential 65, Commercial 148

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

Critical Facilities/Infrastructure*:

Tel-Com Inc. Cellular tower Coeburn Mountain water tank and pump Wise Town Hall Lake Street Cellular Tower Pound Post Office Pound Fire Department Pound Town Hall

Budget

Budget Summary

Grant Matching Requirement*:

LOW INCOME - Flood Prevention and Protection Studies - Fund 90%/Match 10%
Is a match waiver being requested?

Match Waiver Request

No

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

*:

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

Total Project Amount (Request + \$79,510.00

Match)*: **This amount should equal the sum of your request and match figures

**REQUIRED Match Percentage
Amount:** \$7,951.00

BUDGET TOTALS

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

Match Percentage:

10.00%

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

Total Requested Fund Amount: \$71,559.00

Total Match Amount: \$7,951.00

TOTAL: \$79,510.00

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

Construction

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

Contracts

Description	Requested Fund Amount	Match Amount	Match Source
Consulting Contract	\$71,559.00	\$7,951.00	Consultant In-kind services
	\$71,559.00	\$7,951.00	

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	File Name	Type	Size	Upload Date
Detailed map of the project area(s) (Projects/Studies)	Detailed map of project area	Appendix C_item1.pdf	pdf	409 KB	11/25/2025 08:24 AM
FIRMette of the project area(s) (Projects/Studies)	FIRMette of Project Area	Appendix C_item2.pdf	pdf	2 MB	11/25/2025 08:26 AM
Historic flood damage data and/or images (Projects/Studies)	Historic Flood Evidence and Photos	Appendix C_item3.pdf	pdf	25 MB	11/25/2025 08:27 AM
A link to or a copy of the current floodplain ordinance	Links to Floodplain ordinances	Appendix C_item4.pdf	pdf	104 KB	11/25/2025 08:28 AM
Maintenance and management plan for project					
A link to or a copy of the current hazard mitigation plan	LENOWISCO Hazard Mitigation Plan Links	LENOWISCO Hazard Mitigation Plan Links.pdf	pdf	62 KB	11/25/2025 09:37 AM

Named Attachment	Required Description	File Name	Type	Size	Upload Date
A link to or a copy of the current comprehensive plan	Comprehensive Plan Links	Appendix C_item6.pdf	pdf	105 KB	11/25/2025 08:29 AM
Social vulnerability index score(s) for the project area	Social Vulnerability Index	Wise County Social Vulnerability Index Score.pdf	pdf	181 KB	11/25/2025 08:29 AM
Authorization to request funding from the Fund from governing body or chief executive of the local government	Wise County Authorization	Wise County Authorization Debris Flow Risk Analysis in Wise County.pdf	pdf	576 KB	11/25/2025 04:02 PM
Signed pledge agreement from each contributing organization	Virginia Tech Pledge Match	Virginia Tech Pledge Match.pdf	pdf	321 KB	11/25/2025 09:43 AM
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					

Letters of Support

Description	File Name	Type	Size	Upload Date
LENOWISCO Support Letter CFPF Round 6 Wise Co LOS Signed DM.pdf	pdf	153 KB	11/25/2025 01:24 PM	