Amendment to Application for Acquisition of Flood-Prone Properties through the Community Flood Preparedness Fund

HENRICO COUNTY, VIRGINIA

October 29, 2021

Amended Application

Introduction

This document is intended to amend and supplement the original application that Henrico County submitted to DCR on September 3, 2021, to develop an acquisition program for flood-prone structures. Henrico County is submitting this amendment in response to a site visit on October 7, 2021, with DCR and the Secretary of Natural Resources Office, in which the original application and potential changes were discussed. This document only includes sections of the Scope of Work Narrative and Budget Narrative that have changes proposed. All other required sections of the application, as outlined in the CFPF Grant Manual for Round 1, can be found in the original application.

Scope of Work Narrative

Project Description

Phase 1

Phase 1 of this project is intended to develop a voluntary acquisition program for flood-prone properties, including outreach and education opportunities within the identified neighborhood in Lakeside. Phase 1 will be divided into three tasks:

- Task 1 – Voluntary Flood Acquisition Program Development
- Task 2 – Web-Based Tool Development
- Task 3 – Education and Outreach

Task 1 will include program design and research, prioritizing properties for acquisition, conducting a county level cost analysis, analysis of available funding mechanisms, potential incentives for program participants, such as rent-back options or relocation costs, and considering mitigation options other than acquisitions, such as elevations, demolition/reconstruction, floodproofing of utilities, etc. During this Task, a literature review and data collection will be completed of similar successful voluntary acquisition programs around the nation to identify lessons learned. The County will also development a stakeholder group to provide input on prioritization, with a focus on social vulnerability, logical greenspace creation, and other community planning goals. Additionally, the Flood Risk Score developed by Virginia Tech for the County will be evaluated and updated as needed to incorporate into the prioritization method.

Task 2 will include developing a web-based application to support the voluntary acquisition program. This will involve a web-application that provides both external- and internal-facing services. The external aspect of this application will provide information on the program, allow residents to request assistance, and collect key attributes for further evaluation. The internal aspect may be comprised of a protected interface that aggregates required data and facilitates County evaluation of properties. This will not be the only way for county residents to learn about or participate in the voluntary acquisition program, but it will provide an opportunity for interested residents to begin providing information and help inform the program county-wide.

Task 3 will focus on education and outreach around the voluntary acquisition program by piloting a mix of shorter- and longer-term outreach and communication strategies to engage and educate stakeholders and the public in the voluntary acquisition program. Because the initial pilot will only include a few properties, the outreach strategy will leverage longer-term outreach and communication strategies to help balance community expectations while using shorter-term, more focused efforts to support program participation. Successful outreach strategies identified in the pilot can be leveraged and enhanced to launch a sustained, annual county-wide marketing and outreach program to support communicating flood risk and risk-informed

resilience and adaptation efforts more broadly. These tactics will also be designed to align with future actions outlined in the Henrico County Resilience Plan, including:

- Continuing to pursue joining the CRS program and be a component of the future implementation of a Program for Public Information (PPI) to increase flood-related outreach in the County
- Continuing coordination efforts related to floodplain management, dam safety, and hazard mitigation with other local and regional agencies, such as Emergency Management, Fire, Police, Recreation and Parks, Planning, Community Revitalization, PlanRVA, etc.

Task 3 will involve developing a Communication and Outreach Strategy, as well as conducting community meetings, online outreach and engagement, targeted outreach, direct mailers, and developing outreach materials. The County will also pilot a Community Flood Resilience Visioning and Education Workshop. This will involve a pre-flood resilience visioning webinar to raise awareness of the program, followed by a workshop piloted in the Lakeside neighborhood to develop a vision statement to articulate their flood resilience goals, clarify actions needed to achieve those goals, and provide greater context for the voluntary acquisition program. This will then be followed by a Community Flood Resilience Academy, to pilot an online educational program for external stakeholders and the public, such as outdoor enthusiasts, teachers, and real estate professionals, to learn more about flood risk, resilience, and climate adaptation in the County to develop a dynamic network of ambassadors and advocates to help support the voluntary acquisition program. Additionally, a County Flood Resilience Training will be piloted with County agencies and officials to provide an overview of flood-related initiatives, including the voluntary acquisition program, foundational concepts for flood resilience, and its relevance to other agencies and County objectives to ensure there is both internal and external support for the program.

Phase 2

After the voluntary acquisition program and outreach/education initiatives have been developed and implemented, Henrico County will move to Phase 2 of this project. Phase 2 will involve acquiring properties on a pilot basis in the Lakeside neighborhood by working with willing property owners to purchase prioritized properties utilizing the deliverables from Phase 1. Henrico County will utilize CFPF funding for voluntary acquisitions only and will not utilize eminent domain with this funding. During this phase, the County will begin strategizing and designing the new uses for the acquired properties, including determining which nature-based solutions are feasible and best suited to the site, what permanent protection options available, as well as if other benefits can be achieved in the area, such as extending a nearby county park, implementing a trail, etc. This will also involve

Phase 3

After properties have been acquired, Henrico County will move to Phase 3 of the project. Phase 3 will involve demolishing the structures, removing or modifying any existing infrastructure as needed, and constructing the nature-based solutions and any other project components.

Approach, Milestones, and Deliverables

Henrico County will utilize its annual drainage contract for consultant support for this project. The current annual drainage contract includes A. Morton Thomas and Associates (AMT) and Timmons Group. However, beginning on December 1, 2021, a new annual drainage contract will become effective, which will include AMT (with Stantec and Wood), Wetland Studies and Solutions, Inc. (with Atkins), RK&K, and Dewberry. Henrico County intends to utilize Dewberry to assist with this program, as they have extensive experience working with other communities such as Charlotte-Mecklenburg County, North Carolina, and Virginia Beach to develop voluntary acquisition programs. This project will be a multi-year effort. Because funding is only being pursued for Phase 1 with this application, only Phase 1 activities are described below.

Milestones for Phase 1

Tasks 1-3 will be conducted throughout the three-year period of performance for this grant. Although the activities will be somewhat staggered throughout the three years, there will likely be overlap between all three tasks during all three years to properly develop and implement the voluntary acquisition program. Below is a list of the separate tasks and subtasks, as well as a summary of the anticipated timeline for when these tasks will be completed.

Year one will begin with Task 1 – Voluntary Flood Acquisition Program Development. It is anticipated that Task 1 will be completed by the end of Year 2, because the deliverables from this Task will be necessary to complete Tasks 2 and 3.

- Task 1 – Voluntary Flood Acquisition Program Development
    - Subtask 1.1: Program Design and Research
        - Subtask 1.1.1: Kick-Off and Brainstorming Session
        - Subtask 1.1.2: Literature Review and Data Collection
    - Subtask 1.2: Prioritization of Properties
        - Subtask 1.2.1: Develop a Stakeholder Group
        - Subtask 1.2.2 Evaluate Virginia Tech (VT) Risk Score
        - Subtask 1.2.3: Analysis of Highest Risk and Highest Likely Benefit to Cost Ratios
        - Subtask 1.2.4: Synchronize Voluntary Acquisition Strategy with Other Planning Objectives
        - Subtask 1.2.5: Tools for Property Owners
    - Subtask 1.3: County Level Cost Analysis
        - Subtask 1.3.1: Analysis of Voluntary Acquisition, Revenue and Maintenance Costs, Versus Infrastructure Maintenance, Response and Recovery Savings
        - Subtask 1.3.2: Analysis of Potential Revenue from Open Space
    - Subtask 1.4: Funding Mechanisms
        - Subtask 1.4.1: Analysis of Available Grants and Local Funding Options
        - Subtask 1.4.2: Brainstorming Session on Funding
    - Subtask 1.5: Incentives
        - Subtask 1.5.1: Examine Incentives to Accept Properties from Voluntary Acquisition
        - Subtask 1.5.2: Examine Incentives to Relocate within the Henrico County
    - Subtask 1.6: Options other than Voluntary Acquisition
        - Subtask 1.6.1: Discussion of Options and Program Design Recommendations

Task 2 – Web-Based Tools Development will begin near the end of year one or into year two. It is anticipated that this Task will be completed by the end of year two or at the beginning of year three because these tools will be important aspects of the outreach and education activities in Task 3.

- Task 2 – Web-Based Tools Development
    - Subtask 2.1: Functional Design Requirements
    - Subtask 2.2: Application Design
    - Subtask 2.3: Application Development

Task 3 – Education and Outreach will mostly take place in year three but work on this task may begin as early as year one, as there will be overlap in stakeholder engagement and strategy sessions with the program design and development activities in Task 1.

- Task 3 – Education and Outreach
    - Subtask 3.1: Communication and Outreach Strategy
    - Subtask 3.2: Community Meetings

- Subtask 3.2.1: Community Project Kickoff
- Subtask 3.2.2: Community Program Launch
  - o Subtask 3.3: Online Outreach and Engagement
  - o Subtask 3.4: Targeted Outreach
  - o Subtask 3.5: Direct Mail Pilot and Outreach Materials
    - Subtask 3.5.1: Direct Mail Pilot
    - Subtask 3.5.2: Outreach Material Development
  - o Subtask 3.6: Community Flood Resilience Visioning and Education Pilot
    - Subtask 3.6.1 Pre-Flood Resilience Visioning Webinar
    - Subtask 3.6.2: Community Flood Resilience Visioning Workshop Pilot
    - Subtask 3.6.3: Pilot Community Flood Resilience Academy
    - Subtask 3.6.4: Pilot County Flood Resilience Training

The grant will be closed out at the end of year three.

Deliverables for Phase 1

- Plan that clearly outlines the final voluntary acquisition program, including a property prioritization process, and information on the program that can be made available to the public through the County website, meetings, external events/stakeholders, etc.
- Web-based tools to support the voluntary acquisition program.
- Outreach and education materials for stakeholders interested in the voluntary acquisition program, including documentation on outreach and training that was conducted, such as sign in sheets from community meetings and workshops.

Budget Narrative

Project Cost and Requested Funds

This project includes three major expenses: developing the acquisition program, developing web-based tools to implement the program, and developing and implementing outreach and education related to flood acquisitions.

Cost Estimate

Project Total	$ 482,000.00
Task 1 Subtotal	*$ 131,000.00*
Task 2 Subtotal	*$ 180,000.00*
Task 3 Subtotal	*$ 171,000.00*
CFPF Share	**$ 433,800.00**
Local Share	**$ 48,200.00**
This is based on a local match of 10% for Planning and Capacity Building in low-income geographic areas, as outlined in the CFPF Grant Manual for Round 1.	

Task 1: Voluntary Flood Acquisition Program Development		
Subtask		Total
1.1	Program Design and Research	$ 13,000.00
1.2	Prioritization of Projects	$ 58,000.00
1.3	County Level Cost Analysis	$ 16,000.00
1.4	Funding Mechanisms	$ 15,000.00

1.5	Incentives	$	12,000.00
1.6	Mitigation options other than Voluntary Acquisition	$	12,000.00
ODCs	Travel Expenses	$	5,000.00
	Task 1 Total	**$**	**131,000.00**

Task 2: Web-Based Tools Development			
Subtask		Total	
2.1	Functional Design Requirements	$	15,000.00
2.2	Application Design	$	20,000.00
2.3	Application Development	$	145,000.00
	Task 2 Total	**$**	**180,000.00**

Task 3: Education and Outreach			
Subtask		Total	
3.1	Communication and Outreach Strategy	$	14,000.00
3.2	Community Meetings	$	38,000.00
3.3	Online Outreach and Engagement	$	16,000.00
3.4	Targeted Outreach	$	24,000.00
3.5	Direct Mail Pilot and Outreach Materials	$	11,000.00
3.6	Community Flood Resilience Visioning and Education Pilot	$	62,000.00
ODCs	Travel Expenses and Workshop Materials	$	6,000.00
	Task 3 Total	**$**	**171,000.00**

Cash Funds Available

Henrico County has budgeted $1,500,000.00 over the next three years for land acquisitions for flood mitigation. This will be used to cover the local share, as well as the up-front project costs. See Attachment 7 in the original application submission for more information. The complete approved budget is available on the Henrico County [website here](#).

Dewberry

DATE:	October 19, 2021
TO:	Kristin Owen, AICP, CFM, Floodplain & Dam Safety Manager
	Henrico County, VA
FROM:	Scott Choquette, Brian Batten, Jennifer Pepson-Elwood & Hannah Gill, Dewberry
SUBJECT:	Planning Level Cost Estimate for Phase I Voluntary Flood Acquisition Program

As discussed on our October 12, 2021 Teams meeting this memorandum outlines the steps necessary to stand up a voluntary flood prone property acquisition program. It is our understanding that Henrico County will focus on program development during year one, education and outreach in year two and implementation in year three. This memo addresses years one and two only, or Phase I of the envisioned program.

The purpose of this memo is not to provide a detailed scope of work but rather an outline and discussion of the envisioned tasks. We have broken the workflow down into three primary tasks:

- **Task 1 – Voluntary Flood Acquisition Program Development**
- **Task 2 – Web-Based Tool Development**
- **Task 3 – Education and Outreach**

Task 1 – Voluntary Flood Acquisition Program Development

The following provides an outline of services to develop strategies and framework to support a voluntary acquisition program for Henrico County. It is based primarily on our previous work for Virginia Beach and on our conversation on October 12, 2021.

The following sub-tasks are anticipated for task one program development:

- **Subtask 1.1: Program Design and Research**

- **Subtask 1.2: Prioritization of Properties**

- **Subtask 1.3: County Level Cost Analysis**

- **Subtask 1.4: Funding Mechanisms**

- **Subtask 1.5: Incentives**

- **Subtask 1.6: Options other than Voluntary Acquisition**

Subtask 1.1: Program Design and Research
During this task, Dewberry will assist Henrico County with conceptual development of a voluntary acquisition program that meets the needs of the County and its stakeholders.

Subtask 1.1.1: Kick-Off and Brainstorming Session
A kick-off meeting will be held to review project scope, refine the work plan, schedule, and to brainstorm the desired outcomes of a voluntary acquisition program. Meeting Notes capturing decision points and refined work plan will be provided after the meeting.

Assumptions:
- The County will invite and encourage participation of all key stakeholders.
- Travel for the Project Manager, Senior Hazard Mitigation Professional is included in the planning level cost estimate Additional staff will participate via teleconference/WebEx.

Subtask 1.1.2: Literature Review and Data Collection
After the kickoff meeting and brainstorming session, Dewberry will complete a literature review of similar successful voluntary acquisition programs around the nation. This effort may also include select telephone interviews with staff from those programs. We will use the Charlotte / Mecklenburg Floodplain Buyout Program as the primary model for the overall effort but will review other programs to see if they offer improvements or other aspects that may align with the County's objectives. Much of this work has been completed as part of our VA Beach study. The literature review will briefly update that work and examine any new success stories since it was written.

Upon completion of literature review and selective interviews, Dewberry will compile a memo outlining key findings and approaches consistent with the program that the County envisions and prepare a presentation. The presentation will provide key findings, provide suggestions for the framework, and solicit suggestions and feedback. Such feedback will be used to inform the other subtasks.

Assumptions:
- The County will invite and encourage participation of all key stakeholders to a presentation and discussion of findings meeting.
- Travel for the Project Manager and Resilience Planner will be required. The Senior Hazard Mitigation Professional will participate via teleconference/WebEx.

Subtask 1.2: Prioritization of Properties
Prioritization of properties for voluntary acquisition is typically driven by benefit cost ratio, but must also consider a variety of factors, as discussed below.

Subtask 1.2.1: Develop a Stakeholder Group
Dewberry will assist the County in identifying a stakeholder group to participate in the prioritization process. The group will include the non-profit housing industry, the Real Estate Department, Planning and other County departments and external stakeholders. The group will be convened to receive input on prioritization, with a focus on social vulnerability, logical greenspace creation and other community planning goals.

Assumptions:
- The County will invite and encourage participation of all key stakeholders to a presentation and discussion of findings meeting.
- Travel for the Project Manager and Resilience Planner will be required. The Senior Hazard Mitigation Professional will participate via teleconference/WebEx.

Subsection 1.2.2 Evaluate Virginia Tech (VT) Risk Score
Dewberry will evaluate the Risk Score created by VT along with those identified in Subtask 1.1.2. Recommendations will be made on improvement of the risk score to incorporate feedback received from stakeholders and consistent with automating the ranking process with tools to be developed in Task 2. The automation process will allow for updating of different ranking parameters (e.g. flood depths) that may change the ranking as time passes. The process will be designed along the desire to acquire properties in an order that maximizes the creation of greenspace.

Subtask 1.2.3: Analysis of Highest Risk and Highest Likely Benefit to Cost Ratios
Dewberry will intersect available building footprints with available digital elevation models to gather approximate ground elevations at the 1,200 floodplain properties currently identified as potential participants. Based on tax assessment and building department data, we will make informed assumptions regarding building and foundation type to approximate first floor elevations. Limited field verification will be performed to confirm assumptions. Dept-damage functions from the FEMA BCA module will be applied for the buildings. This analysis will reveal which neighborhoods should generally return higher BCA ratios. This portion of the study will also consider potential benefits not allowed by FEMA Hazard Mitigation Assistance (HMA) programs that may be considered by a County-funded voluntary acquisition program, such as re-use of the land.

Assumptions:
- A minimum of one day of field work for two staff will be included to verify assumptions regarding building and foundation type.

Subtask 1.2.4: Synchronize Voluntary Acquisition Strategy with Other Planning Objectives
Although BCA is a good economic screening tool for prioritization, Dewberry will also perform a regulatory/policy review and interviews with the County leaders to consider consistency of BCA prioritized areas with other goals and objectives. Other preferences, such as acquiring properties adjacent to others with a high BCA in order to create larger tracts, stormwater storage areas or areas with Capital Improvement Program (CIP) projects, will be reviewed as part of this task.

Subtask 1.2.3: Tools for Property Owners
As the program will be voluntary, prioritization will need to focus on areas with interest in participation. Dewberry will complete a survey instrument for use by the County to gauge initial interest. Additionally, we will develop a conceptual design for a web-based platform for property owners to enter certain information about their buildings in order to screen eligibility for interested parties, similar to the tool used by Charlotte Mecklenburg in North Carolina. This conceptual design will form the basis of developing the tools under Task 2. A second meeting of the stakeholder group will be required at this stage.

Assumptions:
- The County will invite and encourage participation of all key stakeholders.
- Travel for the Project Manager, Senior Hazard Mitigation Professional is included in the planning level cost estimate Additional staff will participate via teleconference/WebEx.

Subtask 1.3: County Level Cost Analysis
Aside from benefit cost review, true costs and benefits associated with a floodplain voluntary acquisition program to the County will need clarity in order to make the case for funding and to build community buy-in to the program.

Subtask 1.3.1: Analysis of Voluntary Acquisition, Revenue and Maintenance Costs, Versus Infrastructure Maintenance, Response and Recovery Savings
FEMA has conducted numerous losses avoided studies to consider federal financial impacts of voluntary acquisitions. Measures of municipal financial impacts include additional considerations. The University of North Carolina (UNC) Policy Collaboratory published a paper in 2018, entitled *Are Floodplain Buyouts a Smart Investment for Local Governments?*
The paper takes into consideration the following simple equation:

Net fiscal impact ($) = avoided future infrastructure costs (annualized) + avoided emergency response and recovery costs (annualized) - net tax revenue loss - buyout site maintenance costs

Avoided infrastructure costs assume remaining infrastructure in voluntary acquisition areas is abandoned and no longer need routine operations, maintenance or repairs, which will not always be true. Many local response and recovery costs are reimbursable through FEMA's Public Assistance (PA) program. Tax revenue losses are typically treated as the simple subtractions of a building's current and anticipated future assessment from the tax role. We will study scenarios within Henrico County to add clarity to real costs and benefits using a process similar to that followed in our Virginia Beach project.

Subtask 1.3.2: Analysis of Potential Revenue from Open Space
Although there have been studies that evaluate the impacts of proximity to open space (parks, greenways, etc.) on adjacent property value, we have been unable to find any specifically targeted toward impacts on properties adjacent to acquired floodplain lands. It makes sense that property abutting well-kept open space would increase in value. Quantifying the increase would need to be done over time on a case-by-case basis. Our work will look at a limited number of comparable sales of real estate, where the buildings are similar in size, condition, desirability, etc. but where one abuts open space and the other does not. Based on these comparisons we will apply a conservative, planning level estimate of increased value to evaluate its balancing influence against revenue lost from acquired homes. Ideally, displaced home or business owners would relocate within the County, filling existing building stock or through new construction. Incentives for doing so are included in Subtask 1.5.

Subtask 1.4: Funding Mechanisms
The greatest challenge of a voluntary acquisition program is replacing lost tax revenue with limitations on the future use of acquired properties. FEMA Hazard Mitigation Program and the United States Department of Housing and Urban Development (HUD) Community Development Block Grant Disaster Recovery (CDBG-DR) programs are the two primary sources of voluntary acquisition funding. Both severely restrict future use of the acquired properties. This subtask will evaluate all alternatives.

Subtask 1.4.1: Analysis of Available Grants and Local Funding Options
The subtask will evaluate the pros and cons of federally funded voluntary acquisitions versus a local funding program. We will evaluate the following options:

- FEMA Hazard Mitigation Assistance Programs
- HUD CDBG-DR/MIT Programs
- VA Community Flood Protection Fund
- Stormwater Utility Fees
- Special Service District Fees
- Drainage Bonds
- Public/Private Partnerships
- CIP Appropriations

Dewberry will also evaluate ways to minimize voluntary acquisition and maintenance costs, including but not limited to, the following:

- Emergency voluntary acquisition funds where contractual arrangements with property owners to allow them to stay in the building until the next event and flood insurance claim funds are provided to offset the cost of voluntary acquisition
- Future sale or leasing of locally funded acquired open space for flood resilient uses by deed restriction
- Acquire, mitigate and flip strategies
- Acquire, raze, sell for redevelopment with more resilient compliant home that will add to tax roll
- Maintenance agreements

Assumptions:

- Tactics to minimize acquisition costs outlined above may not all be desirable to the County. Which approaches to evaluate will be discussed with the stakeholder group at the time of analysis.

Subtask 1.4.2: Brainstorming Session on Funding
Upon completions of the draft funding portion of the study, Dewberry will request that the County convene a meeting of the stakeholders to discuss its content and brainstorm any recommended revisions.

Assumptions:
- Funding mechanisms will significantly affect financial impacts of the strategy and will require debate and buy-in of elected and administrative officials.
- This session will occur via WebEx or another online platform.

Subtask 1.5: Incentives
This task is to examine strategies for both incentivizing participation in a voluntary acquisition program and to stay or relocate within Henrico County, in order to preserve tax revenue.

Subtask 1.5.1: Examine Incentives to Accept Properties from Voluntary Acquisition
Voluntary Acquisition of prioritized properties are most effective and financially viable when done in clusters. Acquiring contiguous properties helps to create more valuable open space and potentially results in savings on infrastructure maintenance and response. For this subtask, we will complete the following:

- Evaluate the feasibility of market value "plus" offers as a form of down payment assistance
- Evaluate Grant / Loan combinations to assist with relocation expenses and down payments on new homes
- Evaluate rent back options
- Others as identified during Task 1

Subtask 1.5.2: Examine Incentives to Relocate within the Henrico County
Key to the success of a voluntary acquisition program is for acquired property owners to remain in Henrico County and buy from existing building stock or build new. This subtask will evaluate incentives for staying, including, but not limited to the following:

- Market value "plus" offers with contractual binders to buy in the Henrico County and stay for a fixed period of time
- Low interest loans and down payment assistance with contractual binders to buy in Henrico County and stay for a fixed period of time
- Fixed period tax incentives to buy and stay
- Others as identified during Subtask 1.1.

Assumptions:
- County staff and stakeholders will be active participants in the selection of appropriate incentives for analysis.
- A review meeting will be conducted via teleconference/WebEx.

Subtask 1.6: Options other than Voluntary Acquisition
This task will examine alternative solutions for rolling out a program to assist property owners to understand and consider resilience options when voluntary acquisition is not a feasible option.

Subtask 1.6.1: Discussion of Options and Program Design Recommendations
Dewberry will provide options to consider for providing resilience audit and counseling services to Henrico County residents and business owners. Considerations will include:

- Elevation
- Demolition/rebuild
- Filling below grade and adding flood vents (wet floodproofing)
- Elevating utilities
- Dry floodproofing
- Structural flood protection
- Sewer backwater prevention valve installation
- Emergency preparedness plans

Dewberry will use the Center for New York City Neighborhoods' model for home resilience audits and counseling, which looks first at resilience/mitigation actions that provide the most protection on a tiered scale, and those that have the best results for lowering flood insurance premiums. We will recommend modifications to the model to account for differences in building stock. We will also discuss conceptual web-based applications for residents and business owners to access and learn about resilience alternatives, and for the County to capture and store audit data, should it choose to proceed with a similar program.

Assumptions:
- The County will determine level of detail and need for this Task prior to its inception.
- Travel for the Project Manager and Resilience Planner will be required.
- The Senior Hazard Mitigation Professional will participate via teleconference/WebEx

Planning Level Cost Estimate for Task 1

Task 1: Voluntary Flood Acquisition Program Development		Totals:
	Subtask	**Totals:**
1.1	Program Design and Research	$ 13,000.00
1.2	Prioritization of Properties	$ 58,000.00
1.3	County Level Cost Analysis	$ 16,000.00
1.4	Funding Mechanisms	$ 15,000.00
1.5	Incentives	$ 12,000.00
1.6	Options other than Voluntary Acquisition	$ 12,000.00
ODCs	Travel Expenses	$ 5,000.00
Total		$ 131,000.00

Task 2 – Web-Based Tools Development

Henrico County has requested assistance in developing a web-based application to support the Voluntary Acquisition Program. We envision a web-application that provides both external- and internal-facing services. The external aspect of this application will provide information on the program, allow residents to request assistance, and collect key attributes for further evaluation. The internal aspect may be comprised of a protected interface that aggregates required data and facilitates County evaluation of properties. The subtasks below will provide for the collaborative identification of functional design of this web application, as well as application development.

Subtask 2.1: Functional Design Requirements
Dewberry will collaborate with Henrico County to define the functional design requirements of the website, such services may include:

- Compiling functional requirements for the web application, including:
    - Kick-off meeting to discuss and brainstorm on site functionality, desired inputs, and outputs;
    - Consulting the collaborative Dewberry and County team members on application needs;
    - Understanding the desired broad inputs and outputs for both the internal and external aspects of the application;
    - Consultation with County information technology staff to understand hosting/data service capabilities and constraints. This will ensure the application developed by Dewberry can be easily transitioned to the County's servers;
    - Developing an understanding of the workflow process, data requirements, and sources used for evaluation and prioritization of properties;
    - Assessment of task automation to reduce level of effort by County staff for property risk scoring and evaluation for voluntary acquisition; and
    - Reviewing required County datasets and sources, determining open or closed access, update/maintenance frequency, accessibility and personally identifiable information constraints that may affect application design and implementation.

Subtask 2.2: Application Design

- Development of a functional application design, including:
    - Draft functional design for County review;
    - Facilitated discussion of the functional design with County staff to identify additional needs, gaps, or challenges to implementation; and
    - Revised functional design for review and approval.

Subtask 2.3: Application Development

- Development of the functional application, potentially including:
    - External Site:
        - Webpage providing information on program objectives and processes
        - Applicant Page, allowing interested individuals to directly apply for participation in the program.
            - Applicant form, collecting relevant information on the applicant and property for consideration in the program. Potential fields include personal and address information, home and property information, and flooding history and related information.
    - Internal Site:
        - Design and develop database for holding property attributes
            - Develop database design and relationships

- Ingest information from application form on external site into protected internal environment
- Data connection and import modules to automate collection of information from County and/or other data services
- Aggregate other existing data
  - Data analysis routine for supporting flood risk factor
  - Data aggregation back to the database for property evaluation
  - Data import of AAL or BCA estimates
- Field Data Collection
  - Create a data entry form to capture field data
  - Data import module to transfer field data into database
  - Printable template for viewing data in database
- Prioritization Module
  - Prioritization of properties based on evaluation metrics
  - Data visualization based on prioritization
  - Export of prioritized data for further evaluation
  - Notes attribution to record external evaluation factors
  - Ability to append documents to records, as needed

Planning Level Cost Estimate for Task 2

Dewberry notes that there is significant uncertainty in Task 2 that can be refined through further conversations with the County. Some contingency has been added to the subtasks to reflect this uncertainty.

Task 2: Web-Based Tools Development		
Subtask		**Totals:**
2.1	Functional Design Requirements	$ 15,000.00
2.2	Application Design	$ 20,000.00
2.3	Application Development	$ 145,000.00
Total		$ 180,000.00

Task 3 – Education and outreach

Dewberry will support Henrico County during this task by piloting a mix of shorter and longer-term outreach and communication strategies to engage and educate stakeholders and the public in the voluntary acquisition program. Since the initial pilot will only include a few properties, the outreach strategy will leverage longer-term outreach and communication strategies to help balance community expectations while using shorter-term, more focused efforts to support program participation.

Successful outreach strategies identified in the pilot can be leveraged and enhanced to launch a sustained, annual county-wide marketing and outreach program to support communicating flood risk and risk-informed resilience and adaptation efforts more broadly. These tactics will also be designed to align with future actions outlined in the Henrico County Resilience Plan, including:
- Continue to pursue joining the CRS program and be a component of the future implementation of a Program for Public Information (PPI) to increase flood-related outreach in the County

- Continue coordination efforts related to floodplain management, dam safety, and hazard mitigation with other local and regional agencies, such as Emergency Management, Fire, Police, Recreation, and Parks, Planning, Community Revitalization, PlanRVA, etc.)

Outreach and engagement efforts for the voluntary acquisition program may include the following activities:
- Subtask 3.1: Communication and Outreach Strategy
- Subtask 3.2: Community Meetings
- Subtask 3.3: Online Outreach and Engagement
- Subtask 3.4: Targeted Outreach
- Subtask 3.5: Direct Mail Pilot and Outreach Materials
- Subtask 3.6: Community Flood Resilience Visioning and Education Pilot

Subtask 3.1: Communication and Outreach Strategy

Dewberry will develop a strategy for engaging key stakeholders and the public, including the most vulnerable and disadvantaged communities, during program development, launch, and administration to organize priorities and develop an outreach program that reflects the Henrico County stakeholders. To the extent needed, the outreach strategy will be customized to reflect uniqueness of the neighborhoods such as the pilot Lakeside neighborhood. To outline the outreach activities to promote robust stakeholder and public engagement, Henrico County and Dewberry will work together to create an outreach strategy, which Dewberry will document in memorandum format. The Outreach Strategy will include but is not limited to community meetings, online engagement, and targeted stakeholder outreach.

Other outreach strategies can be discussed with Henrico County, including:
- Leveraging County events, such as Flood Awareness Week, to provide information about the Voluntary Acquisition Program and raise flood risk awareness
- Attending in-person community events such as the Lakeside Farmer's market
- Exploring short-term placemaking activities, such as pop-up parks, temporary art installations, or community activities around Upham Brook and Spring Park to help demonstrate the benefits of increased recreational areas and open space

Assumptions:
- The results from the survey conducted in Subtask 1.2.3 help inform the Communication and Outreach Strategy.
- In-person event planning and budgets would need to be developed as additional tasks in coordination with the County.
- The Stakeholder Group convened in Subtask 1.2.1 will be reconvened and potentially expanded to provide feedback on the strategy and proposed outreach activities.
  - Example stakeholders could include:
  - Henrico Economic Development Authority
  - Capital Region Workforce Partnership
  - Community Revitalization
  - Henrico Emergency Management and Workplace Safety
  - Henrico County Historical Society
  - Henrico County Virginia Chamber of Commerce
  - Asian & Latino Solidarity Alliance of Central Virginia
  - FEMA Region 3
  - American Planning Association Virginia Chapter
  - Virginia Silver Jackets

Subtask 3.2: Community Meetings

Community meetings will be conducted through both in-person (if public healthcare circumstances permit) and virtual meeting formats. Meetings will be held during project initiation and for the program launch. Each meeting will encourage active audience participation and engagement. Dewberry will provide logistical support to secure meeting spaces and prepare the meeting space, workshop notifications, collateral materials, post-workshop summaries and recordings, and other activities necessary to conduct successful outreach. Dewberry will also manage all calendar invitations and meeting mechanics.

To drive attendance and participation in workshops, residents must receive meeting information and notification such as meeting dates, times, and platforms. We will develop materials such as a press release, blog post, and talking points to support Henrico County in sharing the meeting notification through online channels and local media outlets. Workshop notifications and announcements will solicit widespread participation across diverse audiences, such as older adults, non-drivers, and traditionally underserved communities. Ideas to support greater public participation will also be shared with Henrico County.

Subtask 3.2.1: Community Project Kickoff
A set of kickoff meetings will be held, potentially using a hybrid (in-person and virtual format) both, to introduce the public to the program, define project parameters and goals, inform the community of opportunities and constraints with the voluntary acquisition program, and collect local experiences and lessons learned from recent extreme climate events, and solicit opinions from the public to shape locations for a deeper look.

Subtask 3.2.2: Community Program Launch
A set of meetings will be held to introduce and launch the program and present the voluntary acquisition program to the public, highlight the public involvement and communication process, and how it supported the plan development. This meeting will provide an overview of the program, opportunities for participation and collect further input from participants on the proposed path forward.

Assumptions:
- The County will invite and encourage the participation of all key stakeholders.
- Travel for the Senior Hazard Mitigation Professional and Resilience Planner is included in the planning level cost estimate. Additional staff will participate via teleconference/WebEx.
- $1,200 has been reserved for workshop supplies, including foam boards, large note pads, writing utensils, printing, and meeting provisions. Remaining supplies will be provided to the Henrico County at the conclusion of the events.

Subtask 3.3: Online Outreach and Engagement

Online outreach and engagement activities will be coordinated with the County's public relations staff to leverage owned platforms such as Henrico County Television and media already utilized, such as Instagram, Nextdoor, SoundCloud, Twitter, and YouTube. Other news media, such as RVA News, and paid media, such as radio and social media placements, may also be explored. Messaging and outreach activities will be coordinated to reinforce positive messaging and create more effective short-term messaging while helping grow support for the acquisition program and other resilience efforts. Additionally, messaging and outreach will be designed to support CRS credits and program participation efforts.

Dewberry will support Henrico County in developing content to drive traffic to the voluntary acquisition program webpage throughout the project lifecycle to encourage stakeholders to return to the webpages to stay up to date on progress and learn about upcoming events, including webinars. We will also ensure that meeting agendas and recordings are available.

Additional online resources could include:
- A project overview video to answer frequently asked questions
- A story map featuring program details

Assumptions:
- The County will help leverage existing web pages and social media accounts to support program content developed.
- Paid media planning and budget would need to be developed in coordination with the County.
- Henrico County Public Relations will help support development of social graphics.

Subtask 3.4: Targeted Outreach

Supplementing community-wide outreach events and online engagement, the Outreach Strategy will include targeted outreach to further facilitate involvement and ensure participation for disadvantaged populations.

Targeted outreach activities could include:
- Developing an Outreach Kit for stakeholders to share information with their networks and engage them in County flood resilience efforts. For example, the Outreach Kit could include information and activities targeted to educators, faith leaders, and community groups and include activities such as social media campaigns, for example, stakeholders posting photos of green infrastructure or content to support a Twitter Chat. The kit could also include information to help teachers integrate flood preparedness into lesson plans and conduct demonstrations.
- Developing a toolkit to help property owners learn about relocation assistance available in the County and short-term rental options if moving immediately out of the property is not an option.
- Conducting a targeted email marketing campaign to connect with stakeholders and raise awareness.

Assumptions:
- Dewberry will leverage existing County outreach materials, distribution lists, and contacts to support any stakeholder email outreach efforts.
- Henrico County Public Relations will help support graphic design elements.

Subtask 3.5: Direct Mail Pilot and Outreach Materials

Dewberry will coordinate with Henrico County to pilot a direct mail effort in the Lakeside neighborhood consisting of two targeted mailings and work with County Public Relations to develop content and designs for outreach materials, such as postcards, flyers, and infographics, which can be shared online digitally or printed and distributed.

Subtask 3.5.1: Direct Mail Pilot

Dewberry will plan and pilot a small-scale, direct mail pilot in the Lakeside neighborhood to promote the Voluntary Acquisition Program. The pilot will consist of two mailings over a several-month period in coordination with other planned outreach activities.

Assumptions:
- Dewberry will leverage County graphics and Public Relations to create print ready resources for the County to send to their printer and mailing house.
- Henrico County will be able to provide a mailing distribution list.
- Henrico County Public Relations will provide graphic design support.

<u>Subtask 3.5.2: Outreach Material Development</u>

Dewberry will coordinate with Henrico County Public Relations to develop and design outreach materials, including but not limited to a postcard, flyer, and an infographic to support in-person outreach, direct mail efforts, and digital sharing.

<u>Assumptions:</u>
- Outreach materials will support community meetings, direct mail, training, and online engagement.

Subtask 3.6: Community Flood Resilience Visioning and Education Pilot

In addition to conducting community outreach and engagement for the Voluntary Acquisition Program Dewberry can also pilot flood resilience visioning workshops and education activities to support longer term engagement across flood risk and resilience programs and initiatives.

<u>Subtask 3.3.1 Pre-Flood Resilience Visioning Webinar</u>
Dewberry will develop and hold a recorded webinar to raise awareness about the voluntary acquisition program, broader county objectives related to flood resilience, introduce the flood resilience vision statement and establish expectations for the Visioning Workshop meetings. The outcome of the webinar will be an improved quality of participation in the Workshop.

<u>Assumptions:</u>
- The webinar will be scheduled for a duration of no longer than 1.5 hours.
- Henrico County will share presentation roles with Dewberry for the webinars.
- Dewberry will have two (2) staff on the webinar, one staff member to present and a second staff member to record key feedback and questions and answers.
- Henrico County may provide a virtual meeting platform. Dewberry can provide WebEx or Teams virtual meeting platforms at the County's direction.

<u>Subtask 3.3.2: Community Flood Resilience Visioning Workshop Pilot</u>
Dewberry will pilot a Community Flood Resilience Visioning Workshop to develop a vision statement for the community of Lakeside. The vision statement will help the community articulate their flood resilience goals and clarify the actions needed to achieve them. The vision statement will help support community buy-in for the voluntary acquisition program and provide greater context. The vision statement can also help shape future flood resilience efforts in the community.

<u>Assumptions:</u>
- The County will invite and encourage the participation of all key stakeholders.
- Travel for the Project Manager, Senior Hazard Mitigation Professional, and Resilience Planner is included in the planning level cost estimate. Additional staff will participate via teleconference/WebEx.

<u>Subtask 3.3.3: Pilot Community Flood Resilience Academy</u>
Dewberry will pilot an online educational program for external stakeholders and the public, such as outdoor enthusiasts, teachers, and real estate professionals to learn more about flood risk, resilience, and climate adaptation in the County to develop a dynamic network of ambassadors and advocates for the acquisition program. Learners who can complete the program will amplify flood risk awareness efforts and serve as trusted resources and leaders for the acquisition program. This program will be informed by examples such as My Henrico Academy and the Prince William County Water Academy.

Assumptions:
- The Webinars will be no longer than 1 hour each.
- Henrico County will share presentation roles with Dewberry for the Webinars.
- Dewberry will have two (2) staff on the webinar, one staff member to present, and a second staff member to record key feedback and questions and answers.
- Henrico County may provide the virtual meeting platform. Dewberry can provide WebEx or Teams virtual meeting platforms at the Commonwealth's direction.

Subtask 3.3.4: Pilot County Flood Resilience Training
Dewberry will leverage the Henrico Training Center to pilot a Flood Resilience Training for County Agencies and Officials to provide an overview of flood-related initiatives, including the Voluntary Acquisition Program, foundational concepts for flood resilience and its relevance to other agencies and County objectives. Dewberry will explore opportunities to incentivize participation through Continuing Education Credit (CEC) for Certified Floodplain Manager (CFM) and Certification Maintenance (CM) for American Institute of Certified Planners (AICP).

Assumptions:
- The pilot Training will be approximately 2 hours.
- Henrico County will have, at minimum, one staff member attend to assist in the delivery of the presentation at the beginning of the training and share presentation roles with Dewberry.
- Dewberry will have two (2) staff available during the training, one staff member to present and a second staff member to record key feedback and questions and answers and provide setup assistance.
- Travel for the Senior Hazard Mitigation Professional and Resilience Planner is included in the planning level cost estimate. Additional staff will participate via teleconference/WebEx.
- Training will follow current health and safety guidelines, and if possible, take place in person.
- $400 has been reserved for workshop supplies, including foam boards, large note pads, writing utensils, printing and meeting provisions. Remaining supplies will be provided to the Henrico County at the conclusion of the events.

Planning Level Cost Estimate for Task 3

Task 3: Education and Outreach		
Subtask		**Totals:**
3.1	Communication and Outreach Strategy	$ 14,000.00
3.2	Community Meetings	$ 38,000.00
3.3	Online Outreach and Engagement	$ 16,000.00
3.4	Targeted Outreach	$ 24,000.00
3.5	Direct Mail Pilot and Outreach Materials	$ 11,000.00
3.6	Community Flood Resilience Visioning and Education Pilot	$ 62,000.00
ODCs	Travel Expenses and Workshop Materials	$ 6,000.00
Total		$ 171,000.00

DEWBERRY ENGINEERS INC.
SCHEDULE OF HOURLY RATES
October 8, 2021

TITLE	HOURLY RATE
Engineer I	$110.00
Engineer II	$120.00
Engineer III	$135.00
Engineer IV	$150.00
Engineer V	$170.00
Engineer VI	$200.00
Engineer VII	$215.00
Engineer VIII	$230.00
Engineer IX	$250.00
Environmental/Other Professional I	$95.00
Environmental/Other Professional II	$115.00
Environmental/Other Professional III	$135.00
Environmental/Other Professional IV	$155.00
Environmental/Other Professional V	$170.00
Environmental/Other Professional VI	$185.00
Environmental/Other Professional VII	$200.00
Designer I	$100.00
Designer II	$120.00
Designer III	$140.00
CADD Technician I	$75.00
CADD Technician II	$92.00
CADD Technician III	$110.00
Admin Professional I	$70.00
Admin Professional II	$90.00
Admin Professional III	$110.00
Surveyor I	$60.00
Surveyor II	$75.00
Surveyor III	$90.00
Surveyor IV	$105.00
Surveyor V	$115.00
Surveyor VI	$130.00
Surveyor VII	$150.00
1 Person Survey Field Crew	$130.00
2 Person Survey Field Crew	$160.00
3 Person Survey Field Crew	$200.00
2 Person Survey Field Crew with Laser Scanner	$210.00
Subconsultants	Cost + 5%

Dewberry

Henrico County | Budget Narrative | Overall Budget Summary

Planning Project: Acquisition of Flood-Prone Properties Program Development

Budget Item	Cost	% of Total
Salaries	$ -	0%
Fringe Benefits	$ -	0%
Travel	$ -	0%
Equipment	$ -	0%
Supplies	$ -	0%
Construction	$ -	0%
Contractual	$ 482,000.00	100%
Other Direct Costs	$ -	0%
Total Project Cost	**$ 482,000.00**	
CFPF Match	$ 433,800.00	90%
Local Match	$ 48,200.00	10%

Henrico County | Budget Narrative | Contractual Budget Breakdown

Planning Project: Acquisition of Flood-Prone Properties Program Development

Contractual Project Total	**$482,000.00**
Task 1 Subtotal	*$131,000.00*
Task 2 Subtotal	*$180,000.00*
Task 3 Subtotal	*$171,000.00*
CFPF Share	**$433,800.00**
Local Share	**$48,200.00**

This is based on a local match of 10% for Planning and Capacity Building in low-income geographic areas, as outlined in the CFPF Grant Manual for Round 1.

Task 1: Voluntary Flood Acquisition Program Development	
Subtask	Total
Program Design and Research	$13,000.00
Prioritization of Projects	$58,000.00
County Level Cost Analysis	$16,000.00
Funding Mechanisms	$15,000.00
Incentives	$12,000.00
Mitigation options other than Voluntary Acquisition	$12,000.00
Travel Expenses	$5,000.00
Task 1 Total	**$131,000.00**

Task 2: Web-Based Tools Development	
Subtask	Total
Functional Design Requirements	$15,000.00
Application Design	$20,000.00
Application Development	$145,000.00
Task 2 Total	**$180,000.00**

Task 3: Education and Outreach	
Subtask	Total
Communication and Outreach Strategy	$14,000.00
Community Meetings	$38,000.00
Online Outreach and Engagement	$16,000.00
Targeted Outreach	$24,000.00
Direct Mail Pilot and Outreach Materials	$11,000.00
Community Flood Resilience Visioning and Education Pilot	$62,000.00
Travel Expenses and Workshop Materials	$6,000.00
Task 3 Total	**$171,000.00**