

Consultant Services: Building a More Robust Floodplain Management Program

Background

The City of Charlottesville is a 10.2 square mile geographic area located in the 750 square mile Rivanna River watershed, one of the largest watersheds in Virginia, which drains to the James River, a major tributary to the Chesapeake Bay. The City has 35 miles of open waterways and 445 acres of Zone AE floodplain. Three substantial waterways, with mapped floodplains, surround the City of Charlottesville: Meadow Creek to the north, the Rivanna River to the east, and Moores Creek to the south. An inland tributary to Moores Creek, Rock Creek, is also within a mapped floodplain.

The responsibilities and leadership for addressing floodplain management and flood resilience are dispersed across a number of departments in City government. Charlottesville has experienced a number of recent staff changes as well as a structural reorganization relevant to these dispersed functions. In addition, the current, fragmented floodplain management approach focuses on the present; the City does not currently have a climate change-informed, future-forward program.

Taken together, these challenges are limiting Charlottesville's ability to fully activate and operationalize the Flood Resilience Plan completed in 2023, pursue and execute prioritized projects, and align program initiatives with other City programs, such as the Climate Adaptation and Resilience Planning effort.

Key roles and responsibilities for floodplain management and related programs are:

- **Neighborhood Development Services (NDS)** maintains the City's floodplain ordinance and National Flood Insurance Program (NFIP) flood maps, and coordinates floodplain permit review and approval. The ordinance and the maps are implemented as an overlay district within the City's Development Code. The NDS Director is the City's Floodplain Administrator and a NDS Senior Planner, a Certified Floodplain Manager (CFM), is the floodplain program manager. The Building Official is also part of NDS and is responsible for enforcing construction and elevation standards within flood zones. NDS also maintains the Comprehensive Plan and permitting for renovations and new construction.
- **Department of Utilities** administers the Water Resources Protection Program (WRPP) and is focused on management and maintenance of the stormwater conveyance system including the related capital improvement program, the Municipal Separate Storm Sewer System (MS4) permit and program, the stormwater utility, and local and regional water quality and stream health initiatives.
- **Department of Public Works (PW)** has several divisions that play a critical role in floodplain management. The Engineering Division provides design services, standards and regulations, and project administration to support the execution and oversight of infrastructure projects. They also provide engineering plan reviews of public and private development and redevelopment projects and administration of the Virginia Erosion and Stormwater Management Program (VESMP). The Capital Development and Facilities Maintenance Divisions conduct planning, design, construction,

repair, and maintenance for City-owned public buildings and schools. The Public Service Division is responsible for maintaining streets and sidewalks.

- **Department of Parks and Recreation** manages publicly owned lands in the riparian and floodplain zones.
- **Office of Emergency Management** includes flooding and floodplains in emergency preparedness and response activities. They also are the liaison to the Federal Emergency Management Administration (FEMA) and the Virginia Department of Emergency Management (VDEM) for technical assistance and funding.
- **Office of Sustainability (OS)** manages the City's climate program which is focused on both climate mitigation and climate adaptation and resilience. OS also collaborates closely with the WRPP.
- **Office of Community Solutions** coordinates the City's grants program.

Scope of Work

City government is seeking capacity building support from a consultant with cross-cutting competencies in floodplain management and climate resilience in order to meet these objectives:

- Build a more robust future-forward floodplain management program,
- Identify, prioritize, and implement projects and policies,
- Develop financial strategies to implement projects, and
- Address new and emerging flooding related challenges resulting from or exacerbated by climate change.

A variety of proposed activities to achieve these objectives are listed below:

1. Build a Robust Floodplain Management Program

- a) Establish the existing program baseline (existing roles, responsibilities, program components, tools and resources, related programs).
- b) Conduct a gap analysis on local roles and responsibilities relevant to floodplain management and recommend process changes to improve efficiency, quality, performance, and equity.
- c) Assist staff in administering the City's ongoing floodplain management program (reviewing floodplain permit submissions, reviewing FEMA Letters of Map Change, reviewing hydrologic and hydraulic engineering analyses, reviewing site plans for development within flood zones, reviewing and updating the City's floodplain permit application and online flood risk information).
- d) Work with City staff to streamline and optimize roles and responsibilities and build a coordinated, cross-functional floodplain management program.
- e) Conduct staff training on program changes and provide coaching, mentoring, or other help to staff to improve their knowledge or skills.
- f) Establish key performance indices and track implementation of the program changes and performance of the improved program.
- g) Document procedures for City staff to manage the robust floodplain management program upon completion of consultant services.

2. Identify, Prioritize, and Implement Projects and Policies

- a) Work with City staff to identify and analyze existing relevant policies, plans, and procedures for gaps, contradictions, or other issues. Develop solutions. Update, develop, and/or align policies, plans, and procedures to provide clarity and cohesion.
- b) Work with relevant City staff to update and implement the City's Floodplain Development Ordinance and establish alignment with the Zoning Ordinance, the Water Protection Ordinance, and other programs.
- c) Evaluate the level of participation and potential benefits of FEMA's community rating system program (there are less than 100 insurance policies active in the City).
- d) Provide professional analysis of local/regional floodplain risks.
- e) Align the approach with State Flood Protection Master Plan efforts.
- f) Update the Flood Resilience Plan based on the requirements from DCR in the 2024 Funding Manual for the Virginia Community Flood Preparedness Fund and the more robust floodplain management program, as necessary.
- g) Review and confirm project needs.
- h) Act as project manager for implementing projects.
- i) Establish need for surface water flow/height monitoring and local floodplain mapping. Plan and conduct community outreach efforts as data regarding flood vulnerability becomes available.

3. Establish Funding Strategies to Implement Flood Resilience Plan

- a) Align stormwater/floodplain CIP project scoping with project forecasting and prioritization (e.g., transportation projects). Reprioritize stormwater CIP projects as necessary based on funding opportunities.
- b) Update cost estimates, identify funding strategies, and establish resources necessary to accomplish the priorities listed in the City's Flood Resilience Plan Sections 6B through 6D.
- c) Identify funding and other resources necessary for a City-wide green infrastructure asset management program and for addressing the two priority watershed management areas: Rock Creek and Schenks Branch.
- d) Identify developed and undeveloped properties in the floodplain and investigate the feasibility of a program to prioritize potential buyouts. Pursue potential funding sources. Incorporate buyouts into multi-year CIP budgeting and coordinate with the City's Parks and Recreation Department.
- e) Identify funding and other resources necessary for additional projects identified under item 2.
- f) Identify and incorporate additional funding sources into multi-year budgets including, but not limited to, state and federal grants, capital improvement program participation, and private partnerships.

4. Address New and Emerging Flood Challenges Resulting from or Exacerbated by Climate Change

- a) Utilize the City's watershed models with climate change projections to establish floodplain implications. The Moore's creek watershed model is complete. The model for the Rivanna

River and Meadow Creek is underway with an expected completion by the end of 2025. The scope for a model of Rock Creek is in the works.

- b) Investigate and evaluate new policies, procedures, technologies, etc., for incorporation to enhance the program (e.g., expansion of current stream buffers, floodplain preservation).
- c) Pursue and/or strengthen regional partnerships with surrounding counties, municipalities, large landowners, Rivanna Water and Sewer Authority (RWSA), and Thomas Jefferson Planning District Commission (TJPDC).
- d) Work with partners on developing comprehensive floodplain conservation and restoration programs.
- e) Work with partners on implementing a flood early warning system and preparing comprehensive evacuation plans.