B. Scope of Work

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# Executive Summary

Fairfax County is applying for grant assistance under the Virginia Department of Conservation and Recreation (DCR) Community Flood Preparedness Fund (CFPF) Round 5 ‘Building Capacity and Planning’ category to fund a Department of Public Works and Environmental Services (DPWES), Stormwater Planning Division’s (SWPD) Engineer IV staff position, under the general supervision of the Planning Section Chief in SWPD. The position will serve as a senior engineer responsible for leading and coordinating flood risk reduction efforts and other initiatives within the Stormwater Planning Division and leading the County’s neighborhood stormwater improvement program.

DCR approved the County’s Resilience Plan on January 10, 2022*.*The County has integrated flood mitigation and resilience goals across areas of the local government, with flood resilience being a priority that is addressed holistically through watershed and countywide comprehensive planning. The County has established requirements for development controls in the floodplain through zoning and the local floodplain ordinance. To address recent repetitive floodings, the County is in the process of developing a repetitive loss area analysis report.

The proposed position will help meet the County’s flood risk reduction goals.

## Project location

The position incumbent will support projects throughout the County.

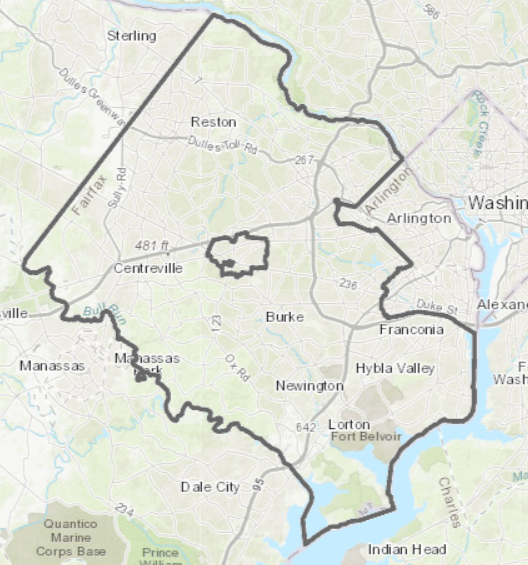


Figure 1: Project Area

## Specific Problem

The DPWES SWPD is dedicated to enhancing and safeguarding the County’s natural environment and infrastructure from the impacts of flooding and stormwater runoff. The neighborhood stormwater improvement program, which has seen significant growth in recent years requires a senior engineer to lead and coordinate flood risk reduction initiatives, plan new initiatives, and support implementation of ongoing projects. There are 570 known issues of structural flooding that cannot be addressed for another 70 years unless the County hires additional staff position to support stormwater management towards flood risk reduction efforts. The new position will work on the Flood Risk Reduction Plan and address multiple County initiatives such as One Fairfax, Resilient Fairfax, and Strategic Plan. For the flood risk reduction effort, the position incumbent will document existing flood risk reduction measures, plan new initiatives, and implement ongoing projects. Figure 2 shows the impact of a recent storm event at two locations in Fairfax County. projects focused on flood risk reduction measures.

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Figure 2: Flooding during a recent storm event

## Factors that contribute to the identified problem

Within the County’s 30 designated watersheds (Figure 3), flooding is experienced in minor floodplains (drainage area greater than 70 acres but less than 360 acres) and major floodplains (drainage area equal to or greater than 360 acres). The County has approximately 840 miles of streams that drain areas of 70 acres or more. Floodplains include all areas designated as such by the Federal Emergency Management Agency (FEMA), the United States Geological Survey, or Fairfax County.

In addition to impacts in floodplains, there are several sump areas and overland drainage issues throughout the County. Figure 4 illustrates a portion of a 70-acre drainage streamline and a sump area within the Difficult Run watershed.

The County is currently developing a flood risk reduction policy and a repetitive loss area analysis report to initiate new programs and implement flood mitigation projects, which require a senior engineer to coordinate and lead these efforts.

A map of a land with different colored areas

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Figure 3: Fairfax County 30 watersheds and 70-acre drainage lines

Map

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Figure 4: Sump area and 70-ac drainage area within Difficult Run watershed

## Activity Need

To effectively manage the floodplain and drainage issues throughout the County, it is necessary to hire an individual capable of handling complex and technically challenging projects. This person will ensure effective project coordination and communication with resident groups, private property owners, senior county staff, elected and appointed officials, county, state, and federal agencies, and utility companies.

The key responsibilities of the position incumbent will include identifying strategies to reduce flood risk, which may involve initiating new programs and implementing flood mitigation projects.

Specific proposed programs that this position will support include:

1. **Future grant programs.** In addition to grants for voluntary acquisition of properties subjected to repetitive loss, this position will support grant applications that focus on erosion prevention and control for channels and swales threatening private or common interest properties, and areaway protection and disconnect from sanitary sewers to prevent flooding.
2. **Easement program.**  This position will identify where the County should obtain additional storm drainage easements and assume maintenance responsibility.
3. **Targeted Community Outreach to Vulnerable Communities**. The position will also support **i**ncreased outreach and updated materials on the availability of programs and targeted outreach for vulnerable communities susceptible to flooding.

Specific tasks related to flood mitigation projects may include:

* Project management
* Engineering design
* Performing and reviewing hydrologic engineering computations
* Developing scopes of work
* Negotiating contracts
* Analyzing and assessing existing and proposed design solutions
* Evaluating project benefits, schedules, budgets, and construction cost estimates

By fulfilling these responsibilities, the position will play a crucial role in supporting the County’s flood risk reduction and mitigation efforts.