



City of Alexandria Flood Resilience Plan Community Meeting #2

Charles Houston Recreation Center

April 16, 2026

7:00 – 8:15 PM





Welcome

▶ Introductions

▶ Q&A

- Live audience
- Online audience, type question in the Q&A on Zoom

▶ Housekeeping

- Exits
- Restrooms



Agenda

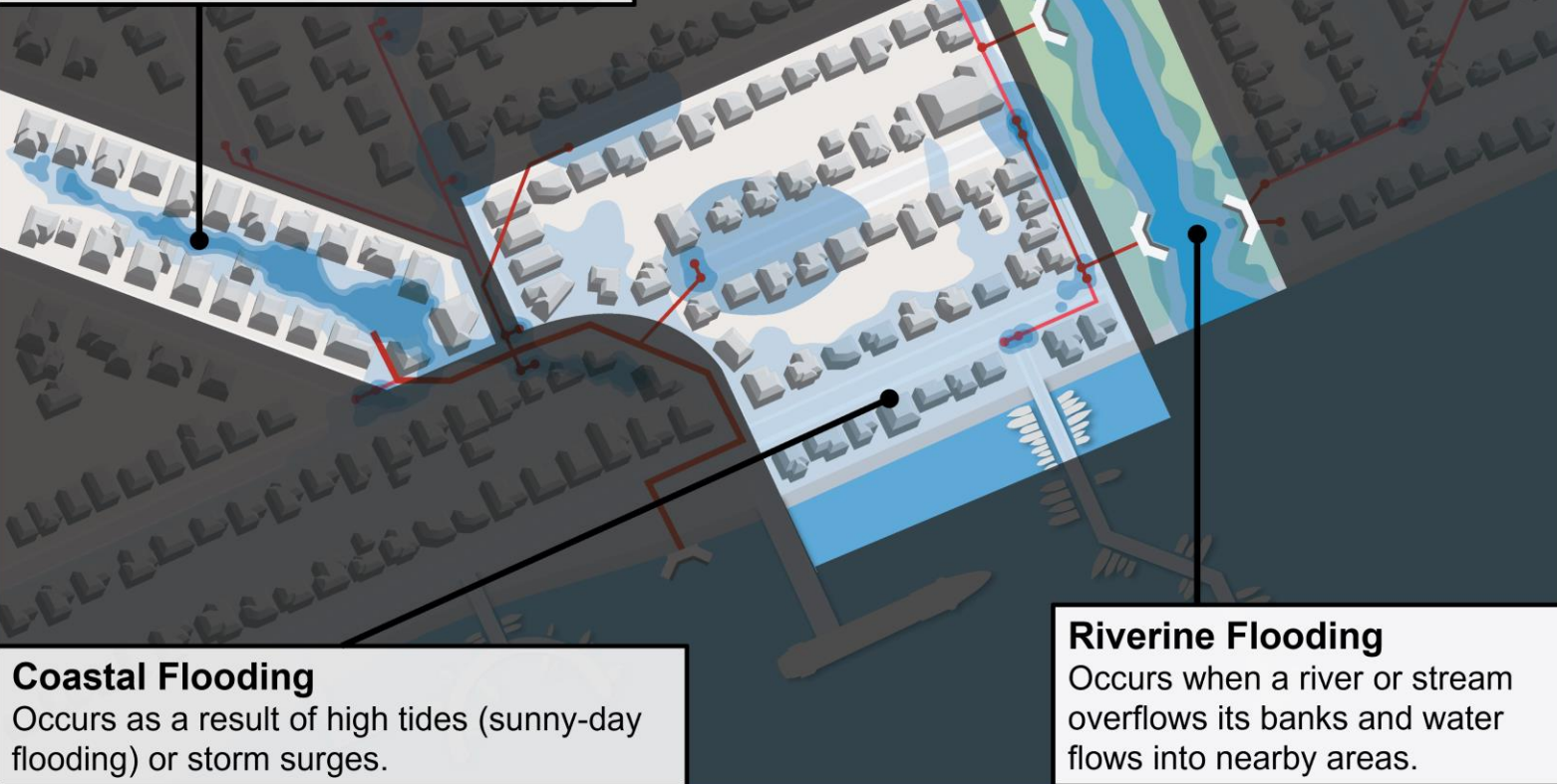
- ▶ Welcome and introductions
- ▶ Flooding in Alexandria
- ▶ What Alexandria is doing to address flooding
- ▶ Flood Resilience Plan purpose and goals
- ▶ Status of the Flood Resilience Plan
 - ▶ Flood modeling and assessing flood vulnerability
 - ▶ Public outreach
 - ▶ Draft implementation strategies
- ▶ Next steps towards plan adoption
- ▶ Q&A



What Types of Flooding Occur in Alexandria?

- ▶ Urban flooding
 - ▶ Flash flooding
 - ▶ Basement backups
- ▶ Riverine flooding
- ▶ Coastal flooding (Potomac River)
 - ▶ High tides
 - ▶ Storm surges

Urban or Local Drainage Flooding
Occurs when heavy rainfall overwhelms the stormwater sewer network.



Coastal Flooding
Occurs as a result of high tides (sunny-day flooding) or storm surges.

Riverine Flooding
Occurs when a river or stream overflows its banks and water flows into nearby areas.

Legend



Building



Storm Drainage



Road



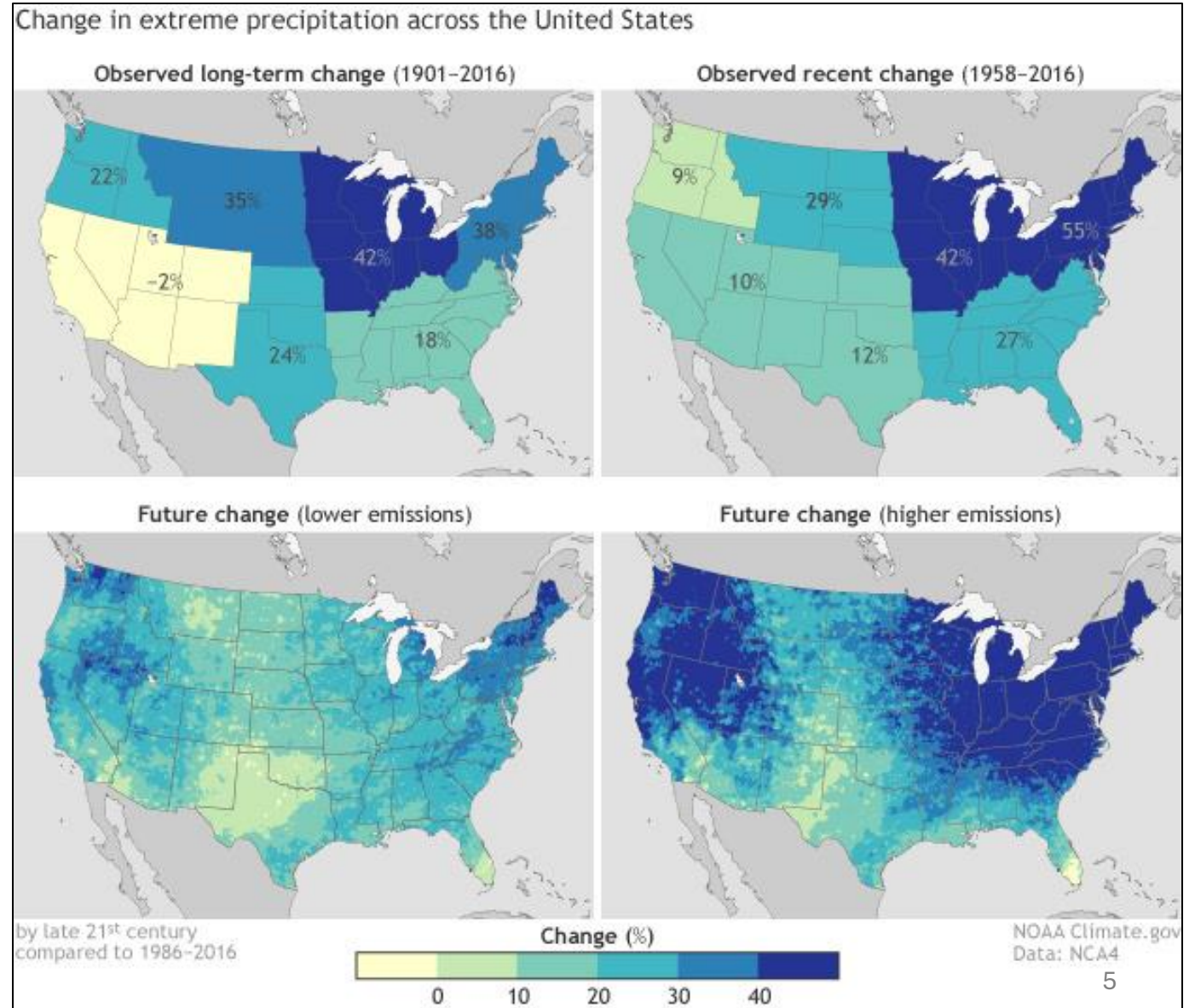
Area of Flooding





Flooding is Becoming More Frequent and Severe

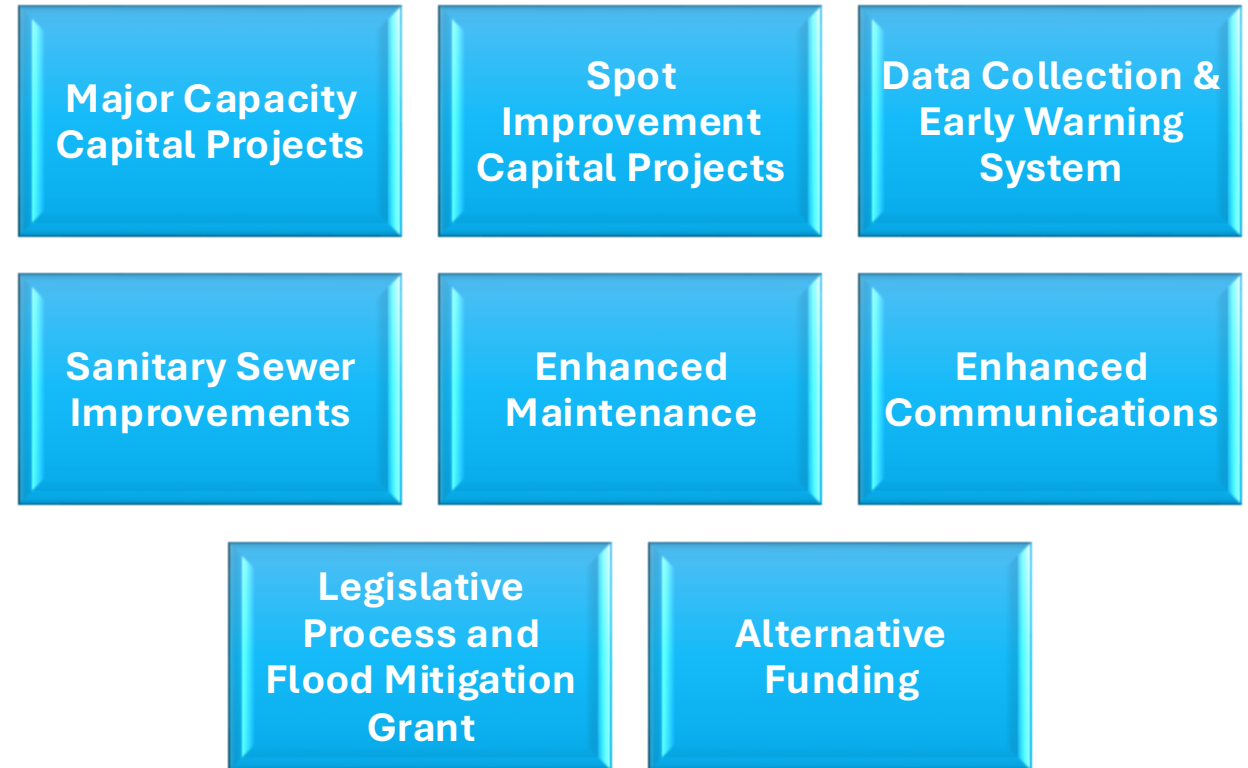
- ▶ More frequent and intense rainfall events
- ▶ Warmer air holds more moisture which leads to heavier rainfall





Flood Action Alexandria

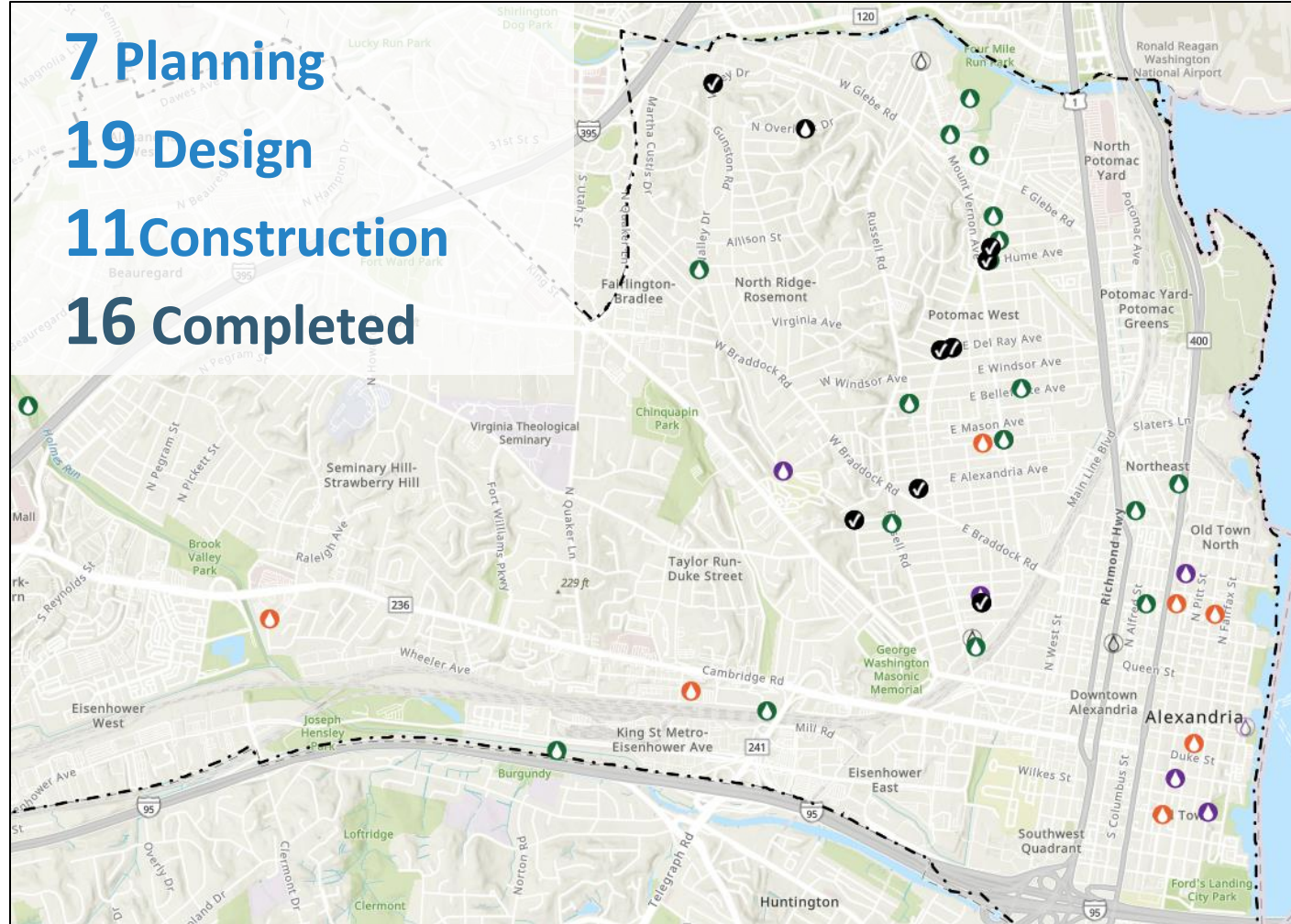
- ▶ Launched in 2021
- ▶ Comprehensive initiative to address flooding





Flood Action Alexandria Progress

7 Planning
19 Design
11 Construction
16 Completed



- ▶ Ongoing maintenance of sewer system and stream channels
- ▶ Early warning and emergency response
- ▶ Flood Mitigation Grant Program
- ▶ Alex311 reporting
- ▶ Stormwater Utility & Flood Mitigation Advisory Committee

We are learning more so we can develop a comprehensive Flood Resilience Plan



Flood Resilience Plan Purpose and Goals

- ▶ The Flood Resilience Plan (FRP) will provide a roadmap for the City to reduce current & future flood risk by:
 - ▶ Identifying flood hazards in areas not previously studied
 - ▶ Identifying priority areas and future flood mitigation projects
 - ▶ Developing comprehensive strategies to reduce flood risk
 - Flood mitigation projects
 - Flood preparedness and response
 - Policies, programs and ordinances
 - Public outreach



Resilience is...
"the capability to anticipate, prepare for, respond to, and recover from major hazards while minimizing social, economic, and environmental impacts."



Additional Goals of the FRP



Satisfy Virginia DCR's Community Flood Preparedness Fund (CFPF) requirements to remain eligible to apply for grants



Coordinate with the FEMA Community Rating System (CRS) to reduce flood insurance premiums



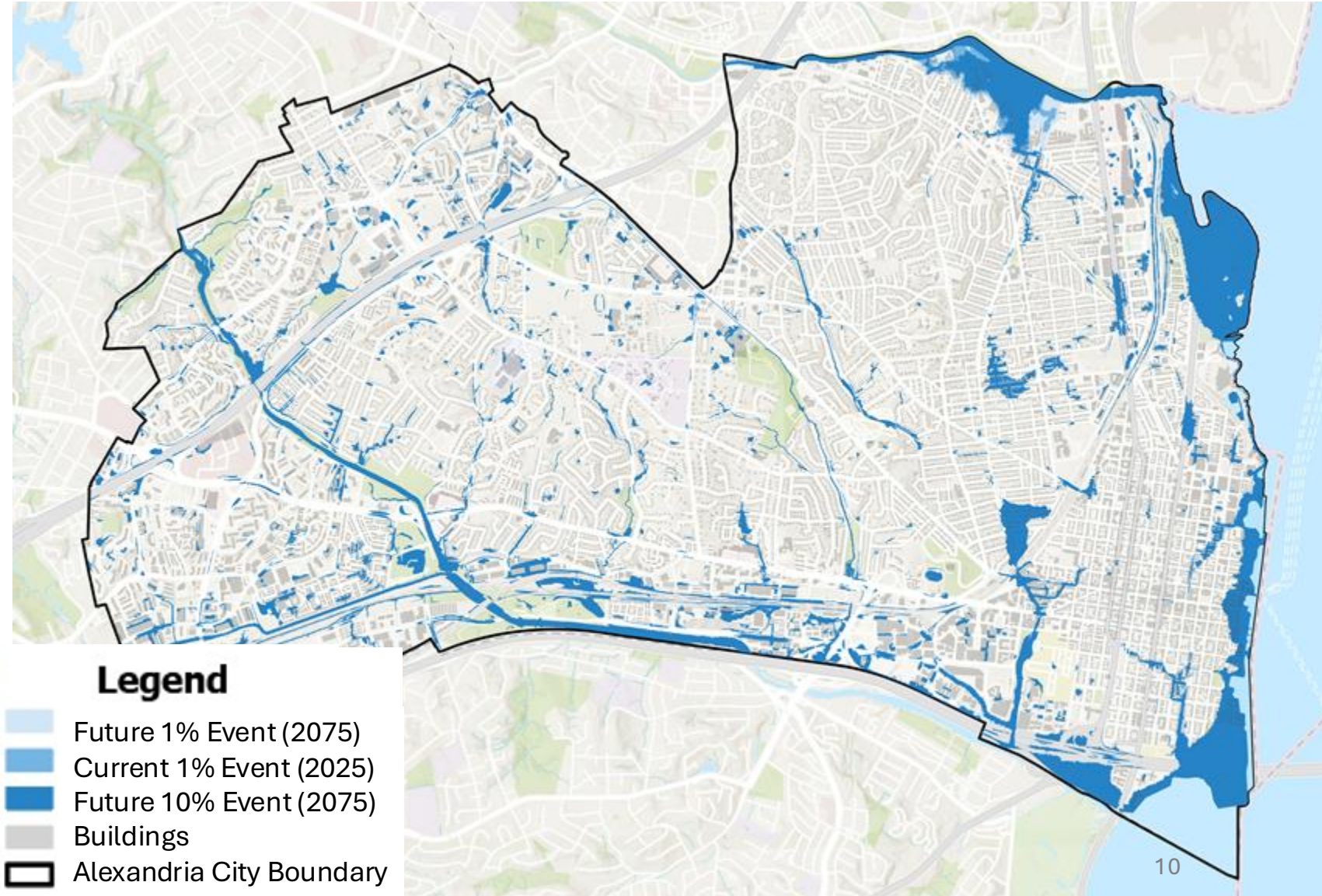
Honor commitments in the City's Energy and Climate Change Action Plan





City-wide Screening-level Flood Modeling

- ▶ Flood modeling assesses the extent and scale of flooding
- ▶ Generated maps that show where flooding might occur under three different rainfall scenarios





Watershed-based Flood Vulnerability Assessment

▶ Purpose

- ▶ Assess flood risk and vulnerability to identify gaps and priorities for future flood mitigation projects
- ▶ Identify important assets & sensitive areas that may be exposed to flooding

▶ Process

- ▶ Used geospatial tools to overlay the community features with flood maps to quantify flood exposure for each feature
- ▶ Calculated a total flood exposure score for each feature and combined them into a single Vulnerability Score for each watershed

Community features that may be exposed to flooding include...



Critical Facilities: Hospitals, Schools, Government Facilities, Utilities, Etc.



Single Family & Multi-family Residential Buildings



Non-Residential Buildings



Transportation: Road, Rail & Bus Routes



Historic Districts

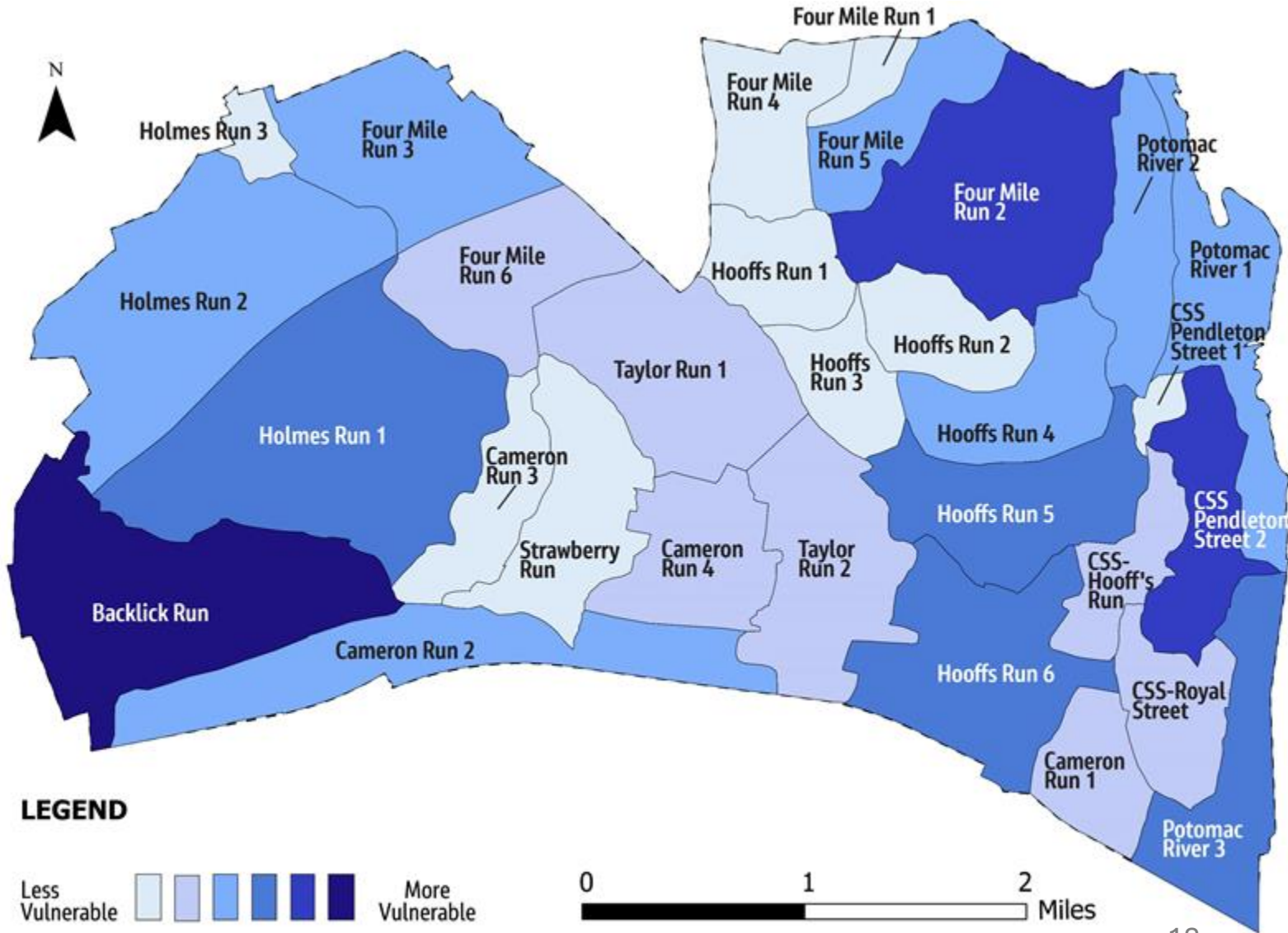


Socially Vulnerable Communities



Vulnerability Assessment Results

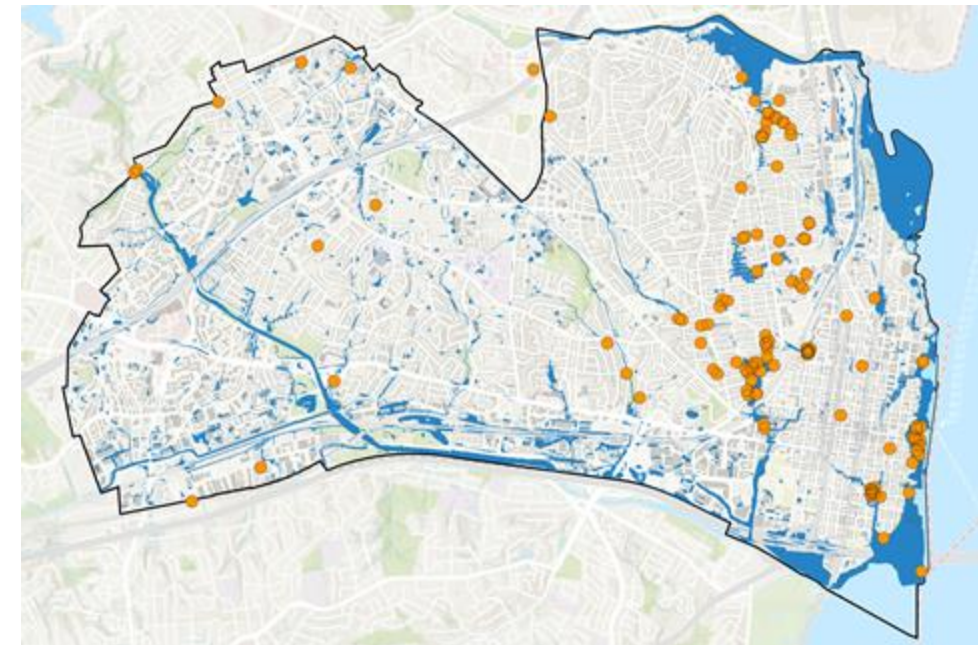
► Confirms that watersheds where the City has focused recent efforts (Potomac River, Four Mile Run, and Hooffs Run) are more vulnerable





Outreach Activities

- ▶ Six community events last summer to share information and gather input. Engaged with about 400 individual participants
- ▶ Online survey received 149 responses
- ▶ Community meeting in November 2025 attended by ~30 participants (in-person and online)
- ▶ Two Stormwater Utility and Flood Mitigation Advisory Committee meetings to share updates





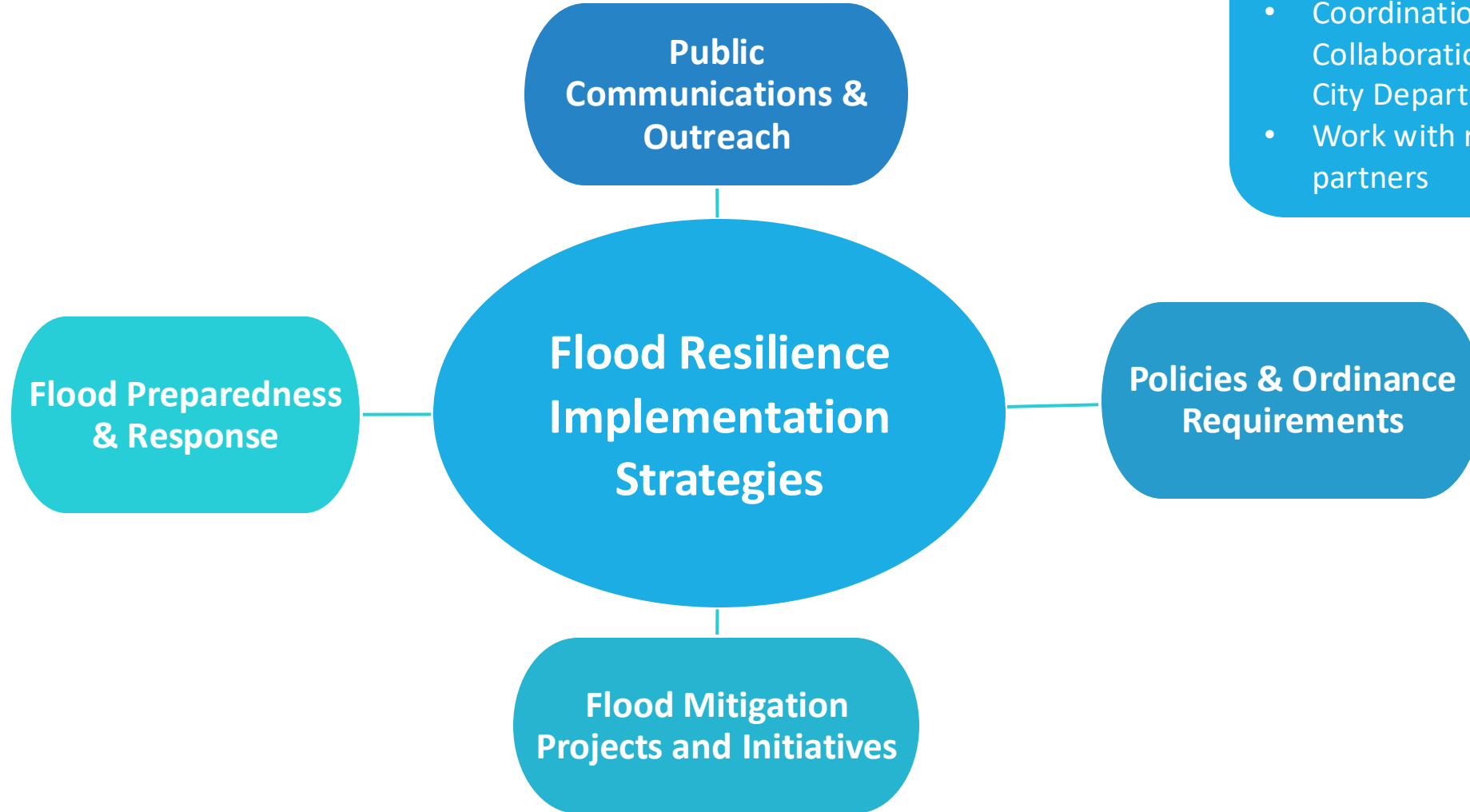
How Community Input Informs the Plan

- ▶ Validates modeled flood-risk areas and identifies gaps for further study.
- ▶ Informs and justifies flood resilience implementation strategies
- ▶ Helps the project team understand community concerns and flood impacts including costs of flood damage and mitigation efforts
- ▶ Informs future outreach and education recommendations and initiatives





A Holistic Approach to Resilience



- Other Considerations**
- Funding & Financing
 - Coordination & Collaboration among City Departments
 - Work with regional partners



Potential Implementation Strategies



▶ Communications & Outreach

- ▶ Develop public-facing flood extent viewer
- ▶ Expand and enhance public outreach materials distribution
- ▶ Target outreach to disadvantaged and vulnerable communities



▶ Policies & Ordinance Requirements

- ▶ Increase the first-floor elevation of structures in regulated floodplain to protect buildings from flooding
- ▶ Create new Flood Prone Area Overlay map and explore requiring the first-floor elevation of new buildings to have a protection factor
- ▶ Update stormwater management ordinances to increase detention requirements to reduce stormwater runoff
- ▶ Identify opportunities to increase coordination with internal and external project partners



Potential Implementation Strategies

▶ Flood mitigation projects and initiatives



▶ Continue implementation of large capacity and spot improvement capital flood mitigation infrastructure projects



▶ Perform additional flood validation and evaluations in modeled flood prone areas without currently identified projects



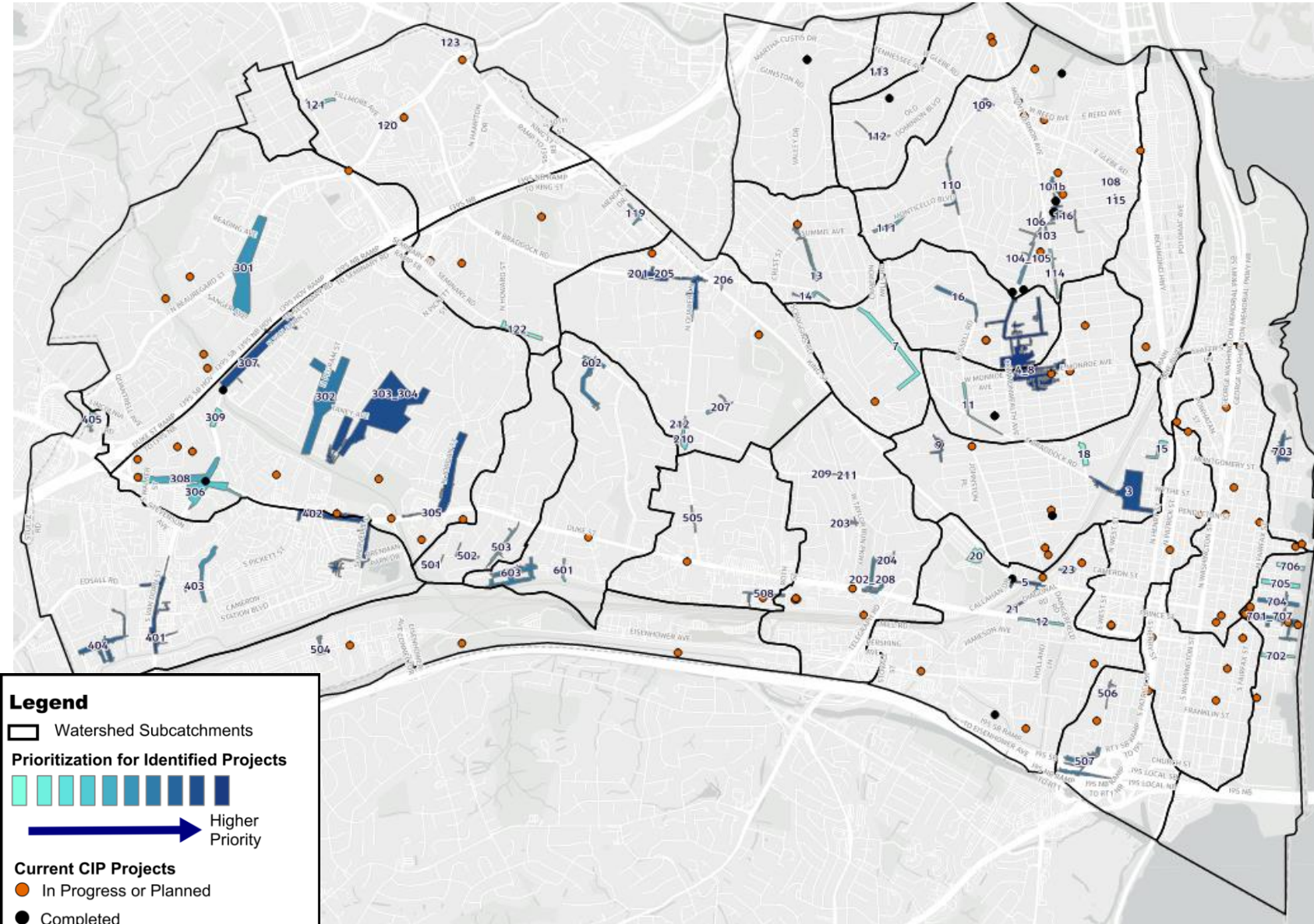
▶ Expand incentives for property owners to implement flood mitigation

▶ Evaluate need and implement flood protection of at-risk public critical facilities, as applicable



Future Flood Mitigation Project Areas

- ▶ Evaluated known problem areas for future large capacity projects (beyond current CIP)
- ▶ Prioritized potential projects based on flood vulnerability

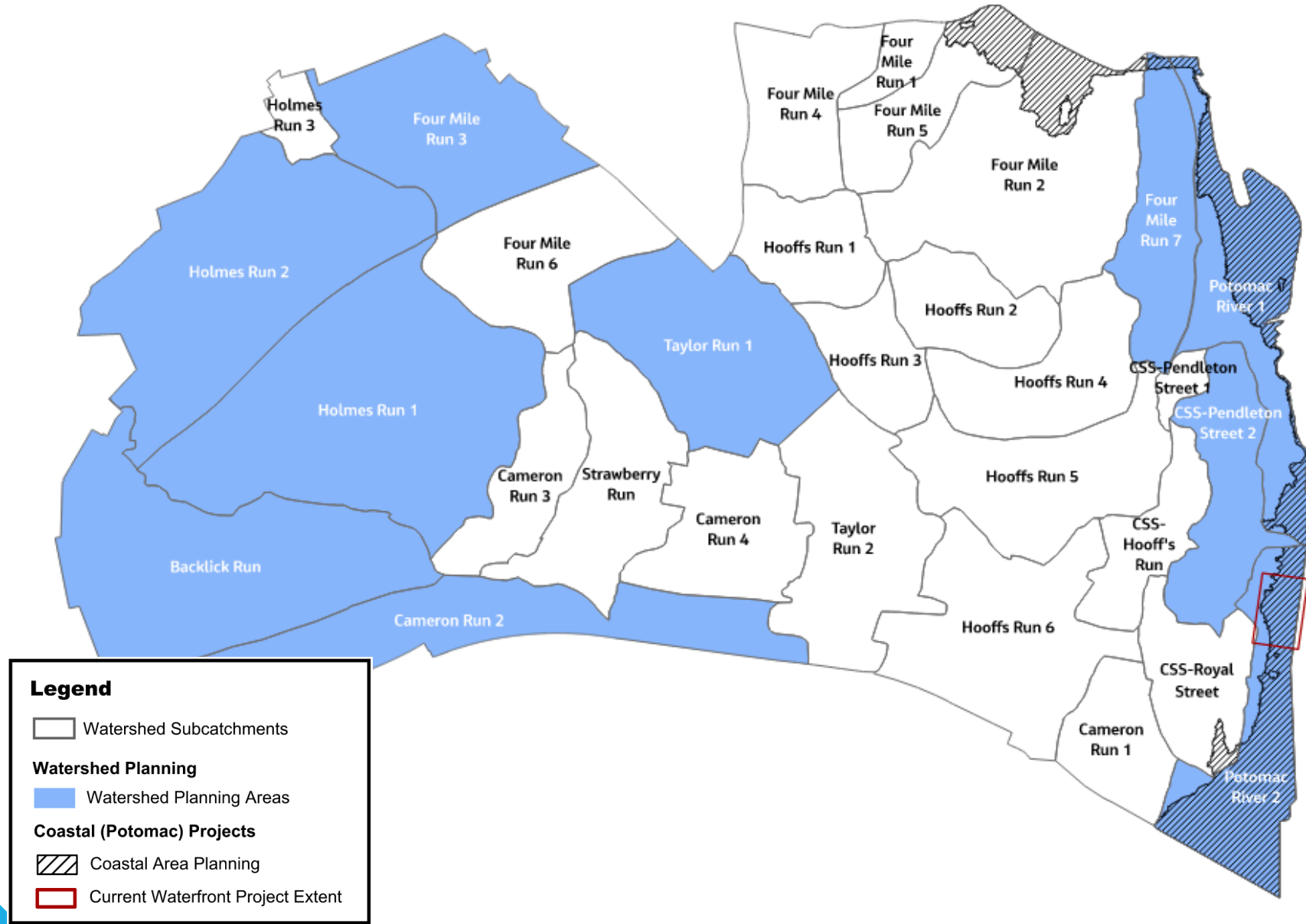


Future CIP Projects



Potential Watershed Planning Priorities

- ▶ Watershed Planning
 - ▶ Model validation and refinement
 - ▶ Post-mitigation assessment modeling
 - ▶ New project identification
- ▶ Coastal Area Planning
 - ▶ Areas outside of current waterfront project





Potential Implementation Strategies



▶ Flood Preparedness & Response

▶ Expand hazard alert system by employing reverse 911 to reach more people



▶ Update Flood Response Plan to address interior flooding and align with FRP

▶ Expand flood monitoring



▶ Develop refined predictive models to generate warnings based on flood monitoring



What's Next? Finalizing the Plan

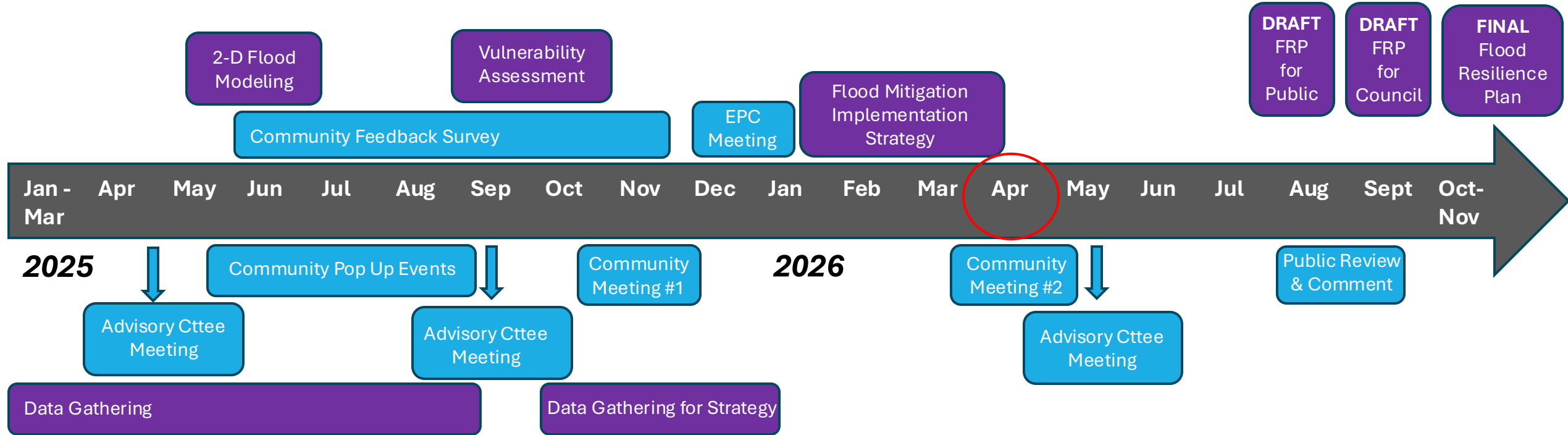
- ▶ Refine draft implementation strategies
- ▶ Draft Flood Resilience Plan for public comment – August 2026
- ▶ City Council Draft – September 2026
- ▶ City Council Final Approved Plan – October/November 2026





FRP Project Timeline

Legend
 Purple – Project Team
 Blue – Community Input Opportunity





Ways to connect

- ▶ Contact us
 - ▶ Ami Cobb, P.E. – Ami.Cobb@alexandriava.gov
 - ▶ Alex Haptemariam, P.E., CFM – Alex.Haptemariam@alexandriava.gov
- ▶ Visit our website for future updates about the project
 - ▶ Alexandriava.gov/flood-action/flood-resilience-plan
- ▶ Sign up to receive the Flood Action Alexandria newsletter
 - ▶ Alexandriava.gov/eNews



Q&A





Thank You!

Thank You



This project received funding from the Virginia Community Flood Preparedness Fund Grant Program through the Virginia Department of Conservation and Recreation (DCR), via CFPF-24-04-38.