

Residential Stormwater Drainage Improvement Program - Charles County, MD



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Charles County Government

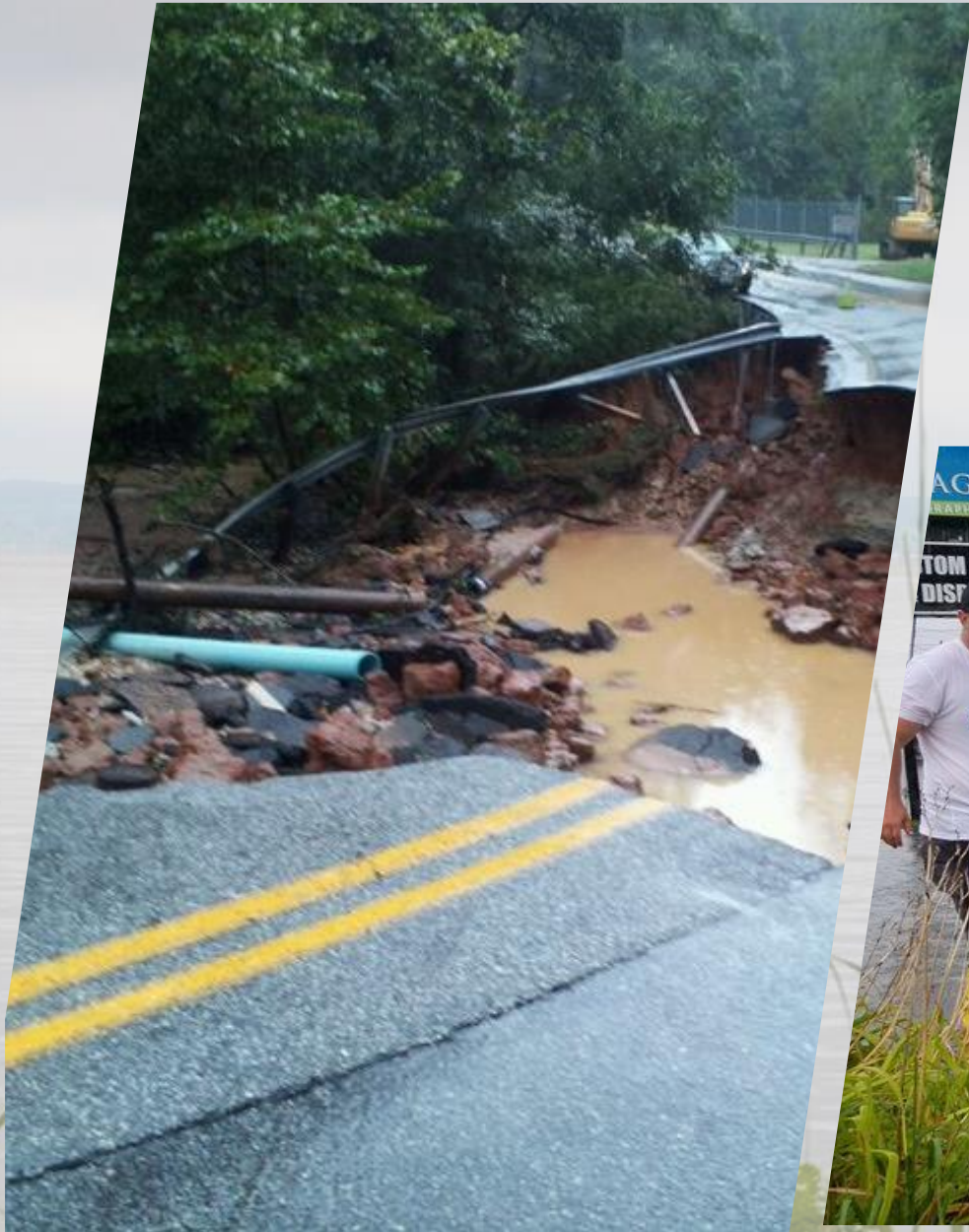
Location and Context



Climate Hazards



- Extreme Weather Events
- Extreme Temperatures (Heat)
- Nuisance Flooding
- Urban Flooding
- Sea Level Rise



Residential Stormwater Drainage Improvement Program



- The Problem - Drainage Issues in 100+ Neighborhoods



Residential Stormwater Drainage Improvement Program



- **The Solution**

- **Charles County will offer/resolve to take over responsibility for repair/maintenance of these stormwater drainage systems in perpetuity.**
- **Property owners will be required to donate the necessary easements for repair and maintenance.**
- **Charles County Government partnered with the Charles County Resilience Authority to conduct a project to assess and prioritize neighborhoods.**

Residential Stormwater Drainage Improvement Program



- **Neighborhood Assessment and Prioritization Project**

- **The Charles County Resilience Authority hired Biohabitats in 2022.**

- **Neighborhoods were assessed and prioritized based on the following criteria:**

- **Drainage System Characterization**
- **Severity and Feasibility**
- **Equity**
- **Dual Benefits**

Neighborhood Prioritization Dashboard



Charles County Residential Stormwater Drainage Improvement Program

Prioritization Category
None

Select Neighborhood
None

Category 1: Drainage System Characterization

The Drainage System Characterization score considers the age of the system, its ability to convey predicted or anticipated storm flows (capacity), physical condition, and risk to adjacent vital infrastructure. The factors were evaluated through a mixture of desktop analysis and field assessment. The final categorizations were assigned based on score.

Category 2: Severity and Feasibility

Category 2 considers the severity of the initiating drainage complaint in addition to feasibility of implementing a solution. Severity was assessed based on field observations and professional judgement. If the situation would be made worse or threatened additional property or infrastructure by not taking action, the severity was considered high. The ability to address the drainage or flooding issue (or feasibility) included physical parameters such as available space, slope, and soil type.

Category 3: Equity

This category consisted solely of equity based on the neighborhood or parcel's 2020 Social Vulnerability Index (SVI) score. The score is computed based on US census data and looks at the communities ability to adapt to changes. More information can be found online using the SVI Fact sheet.

Category 4: Dual Benefits

Category 4 characterized the opportunities for additional project benefits such as ability to provide water quality treatment towards the County's Municipal Separate Storm Sewer System (MS4) permit requirements or to protect existing public infrastructure.

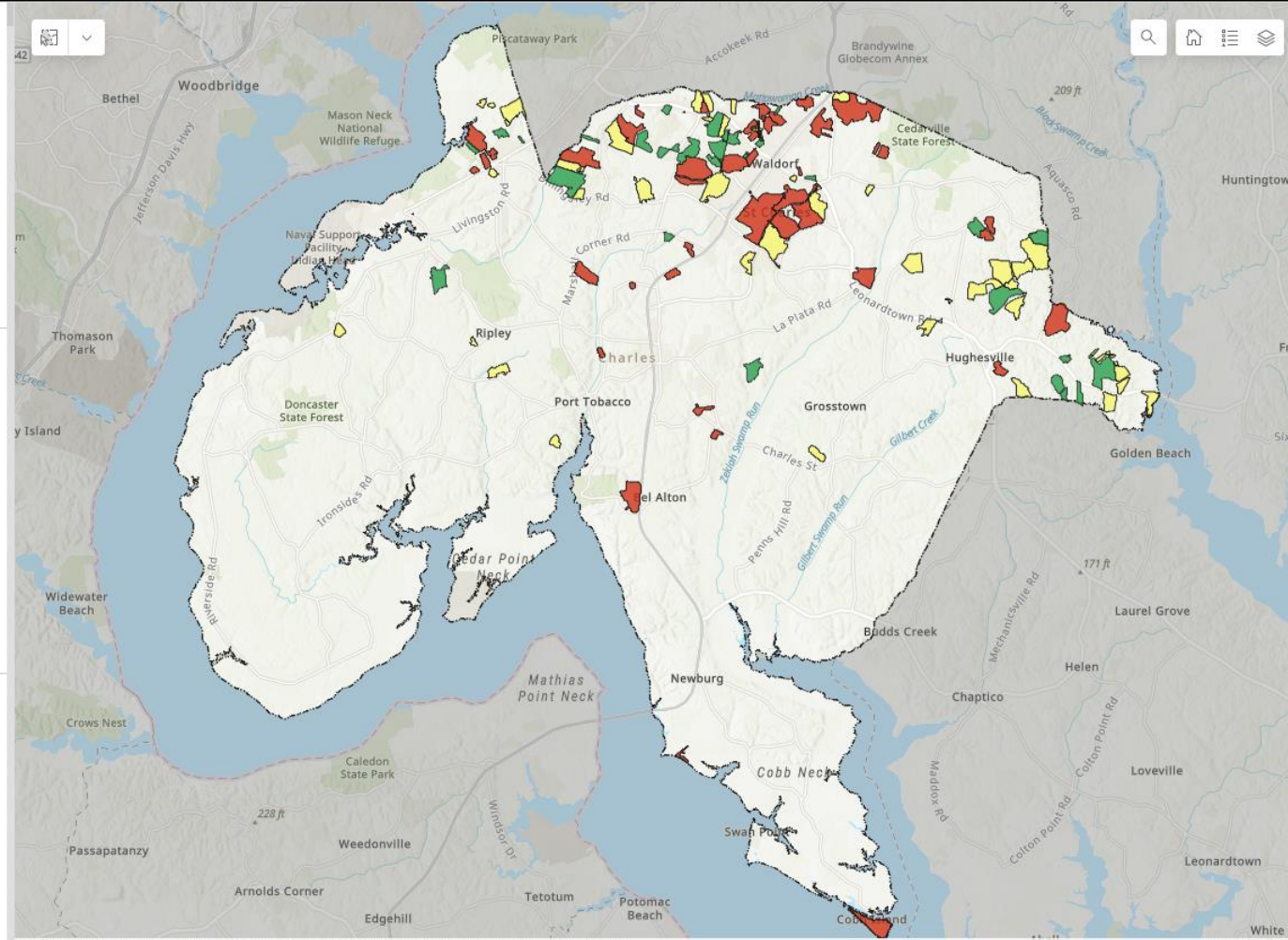
Huntington			
Category	Score	Max Score	Classification
1	40	40	Drainage System: Failed
2	23	30	High Social Vulnerability
3	20	20	
4	10	10	
Total	93	100	

Prioritization: High

Green Meadows			
Category	Score	Max Score	Classification
1	35	40	Drainage System: Failed
2	22	30	Medium to High Social Vulnerability
3	15	20	
4	10	10	
Total	82	100	

Prioritization: High

Zekiah Valley			
Category	Score	Max Score	Classification
1	31	40	Drainage System: Failed
2	25	30	Medium to High Social Vulnerability
3	15	20	
4	10	10	
Total	81	100	



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Residential Stormwater Drainage Improvement Program



- **Cost and Funding**

- **Total cost unknown at this time**
- **Approximately 51% of Charles County's American Rescue Plan Act (ARPA) Funds will be used for this effort: \$16.2 million**
- **ARPA funds will also be used for:**
 - **Rural Broadband Initiative**
 - **Public Safety and Public Health**
 - **Grants to Support Local Businesses and Non-Profits**
- **The Resilience Authority will seek out grants and other funding sources to further fund this effort.**
 - **Chesapeake Bay Trust funding was recently awarded for green infrastructure and stormwater management design for Waldorf neighborhood.**

Residential Stormwater Drainage Improvement Program



• Current Program Status

- **24 out of 109 projects currently in the design process**
- **13 out of 24 currently in the County's review process**
- **1 project has an approved permit**
 - **Pinefield Phase II plans approved in 2019; this was prior to the creation of the prioritization list and RDIP**
- **Design for 22 out of 24 projects being managed by the Infrastructure Management Division**
- **Design for 2 out of 24 projects being managed by Capital Services**
- **Total design cost for 23 out of 24 projects is \$2.7 million**
 - **Average project design cost is \$118,900**
- **Construction planned to begin in October to November timeframe**
- **ARPA funding deadlines**
 - **Full encumbrance – Dec. 31, 2024**
 - **All funds spent – Dec. 31, 2026**

Residential Stormwater Drainage Improvement Program



- **Project Design Contracting Vehicle**
 - Charles County Task Organization Engineering Services Contracts
- **Charles County Residential Drainage Improvement Program SOP**
 - Developed between multiple County departments
 - Community Engagement
- **Project Easements**
 - County to obtain public easements over all improvements
 - Letter of Intent/Agreement
 - Federal Guidelines
- **Construction Services Procurement**
 - Task Organization Construction Contract
 - \$150,000 Threshold

Residential Stormwater Drainage Improvement Program



- **Preliminary Lessons Learned**
 - **Start Earlier!!!**
 - **Easement Acquisition**
 - **Property Owner Input / Community Involvement**
 - **Site Visits and More Site Visits**

Contact Information



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