



Residential Drainage Improvement Program

Presenters:

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September 19, 2025



Background

Problem:

- § Drainage and erosion issues in 100+ neighborhoods

Solution:

- § Prioritize drainage and erosion projects
- § Design and construct solutions for problems
- § County to own, operate, and maintain in perpetuity

Neighborhood Assessment and Prioritization Project

- **Charles County hired Biohabitats in 2022**
- **Assessed and prioritized based on the following criteria:**
 - § **Drainage systems characteristics**
 - § **Severity**
 - § **Equity**
 - § **Dual Benefits**

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.

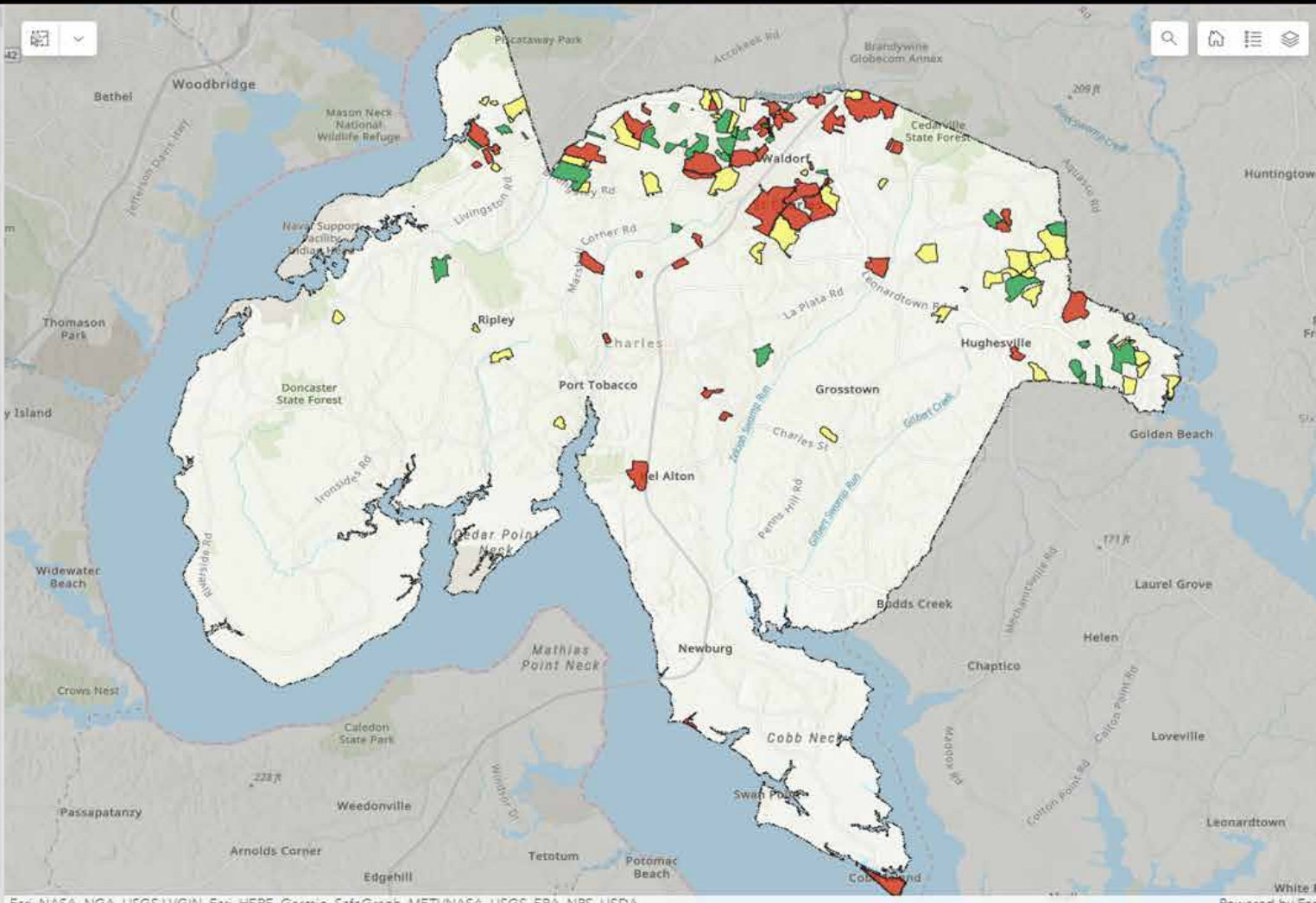
Huntington			
Category	Score	Max Score	Classification
1	40	40	Drainage System: Failed
2	23	30	
3	20	20	High Social Vulnerability
4	10	10	
Total	93	100	

Prioritization: High

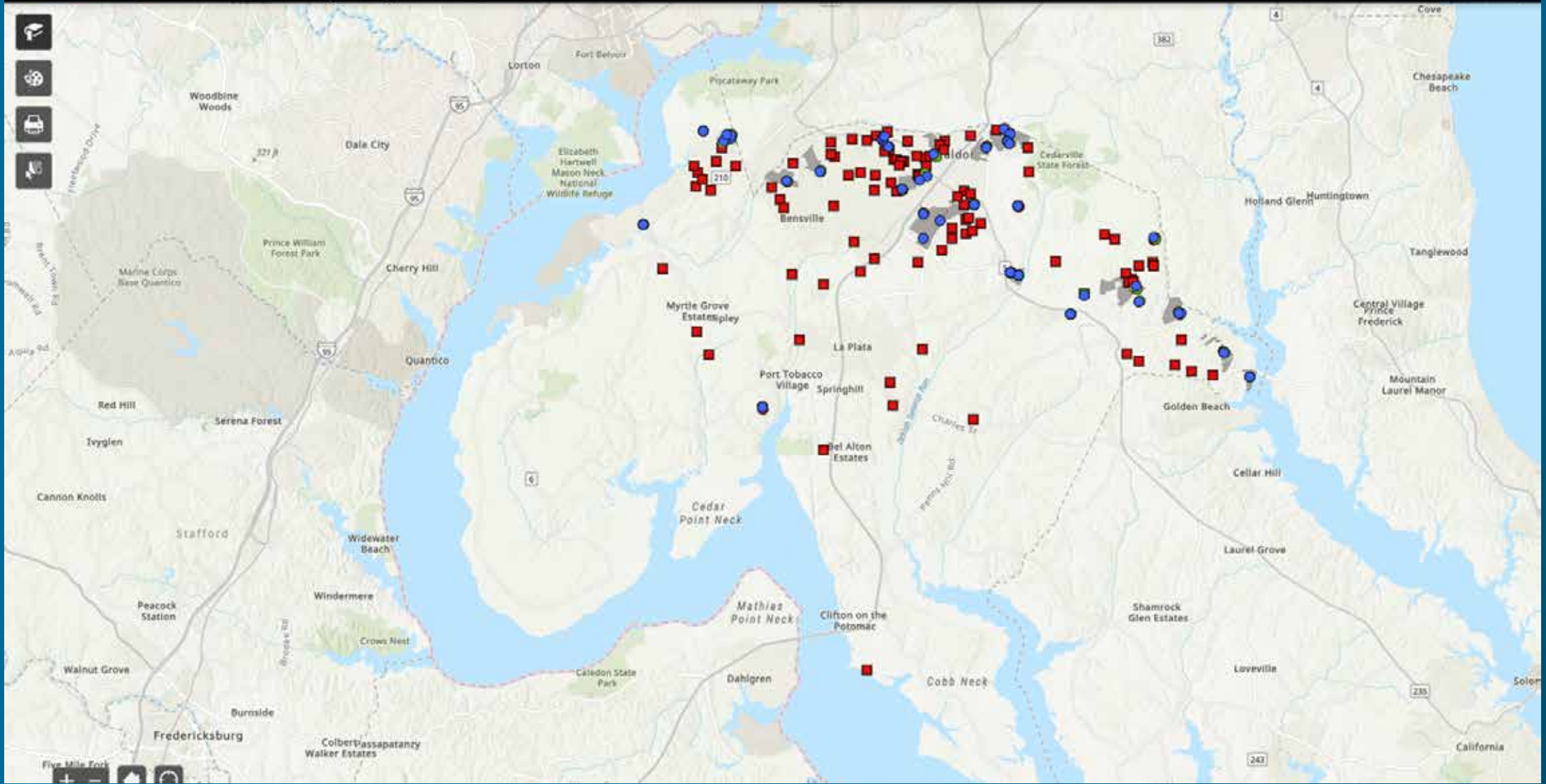
Green Meadows			
Category	Score	Max Score	Classification
1	35	40	Drainage System: Failed
2	22	30	
3	15	20	Medium to High Social Vulnerability
4	10	10	
Total	82	100	

Prioritization: High

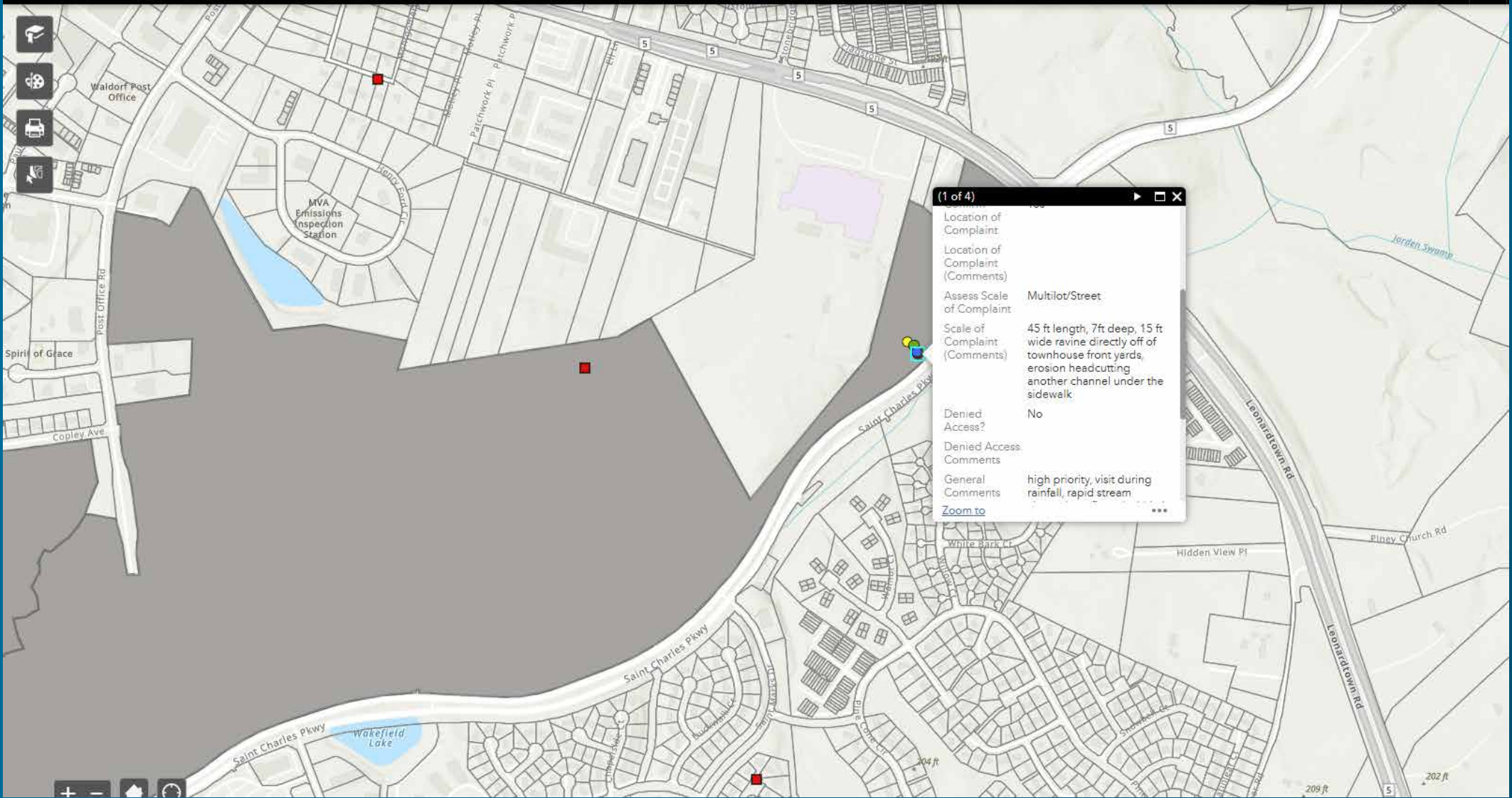
Zekiah Valley			
Category	Score	Max Score	Classification
1	31	40	Drainage System: Failed
2	25	30	
3	15	20	Medium to High Social Vulnerability
4	10	10	
Total	81	100	



Neighborhood Prioritization Dashboard



Detailed Prioritization Dashboard



Detailed Prioritization Dashboard

Cost and Funding

- **Approximately 51% of Charles County's American Rescue Plan Act (ARPA) funds will be used for this effort: \$16.2 million**
- **Total Spent on design to date = \$5.3 million (\$118,371 per project average)**
 - **46 projects in design to date**
 - **Costs for projects in design include:**
 - § **Design**
 - § **Contingency Items**
 - § **Construction Management**

ARPA Funding Deadlines

- **\$10 million transfer to EMS**
- **Remaining \$6.2 million encumbrance**
 - **Encumbrance deadline – December 31, 2024**
 - **Spending deadline – December 31, 2026**
 - **Confusion on what is considered spent funding**

Current Program Status

- 46 of 109 projects currently in the design process
- 44 project designs managed by the Infrastructure Management Division (PGM)
- 2 project designs being managed by Capital Services Division (DPW)
 - NPDES projects
- 21 of 46 currently in the County's review process
- 7 of 46 projects have been approved and permitted
 - § Green Meadows, Pinefield Phase II, Chapel Point Woods, Southview, Capital Estates, Wexford, White Oak

Permitted Project Status

Project Currently Under Construction

- **Green Meadows**
- **Chapel Point Woods**
- **Capital Estates**

Next Construction RFP

- **Southview**
- **Wexford**
- **White Oak**

Pinefield Phase II Drainage Improvements

- **Design approved**
- **Currently waiting on testing pitting to determine utility conflicts**
- **Proceeding with Temi Drive project area**

Project Award and Review Efficiency

- **Project Design Contract Type**
 - § **Task Organization Engineering Services Contract 20-21**
- § **Construction Contract Type**
 - § **Task Organizations Construction Contract**
 - § **\$150k to \$300k maximum threshold increase**
 - § **Obtain 3 bids for \$150k to \$300k range**
 - § **> \$300k – formal procurement process**

Project Award and Review Efficiency Cont.

- **Charles County Residential Drainage Improvement Program SOP**
- **Efficient Review Process**
 - § **Obtain Development Services Permit (DSP) for maintenance projects**
 - § **Expedited review through Infrastructure Management Division**
 - § **Worked with SCD to develop expedited review process**

Community Engagement

- **Consultations with owners of all affected properties**
 - § **Temporary and permanent impacts**
- **Explanation of program and design and construction process**
- **Input provided by property owners to help develop solutions**
- **Property owners informed of easements needed**
 - § **Temporary Construction Easements**
 - § **Perpetual Easements**
 - § **County vs. Property Owner Responsibilities**

Problems and Delays

Huntington

- **Larger flooding issue than previously known**
- **Box culvert will be needed to handle 100-yr flood waters**
- **An additional stream restoration project will be included to obtain NPDES credits**

Easements

- **Reluctant property owners**
- **Federal guidelines**

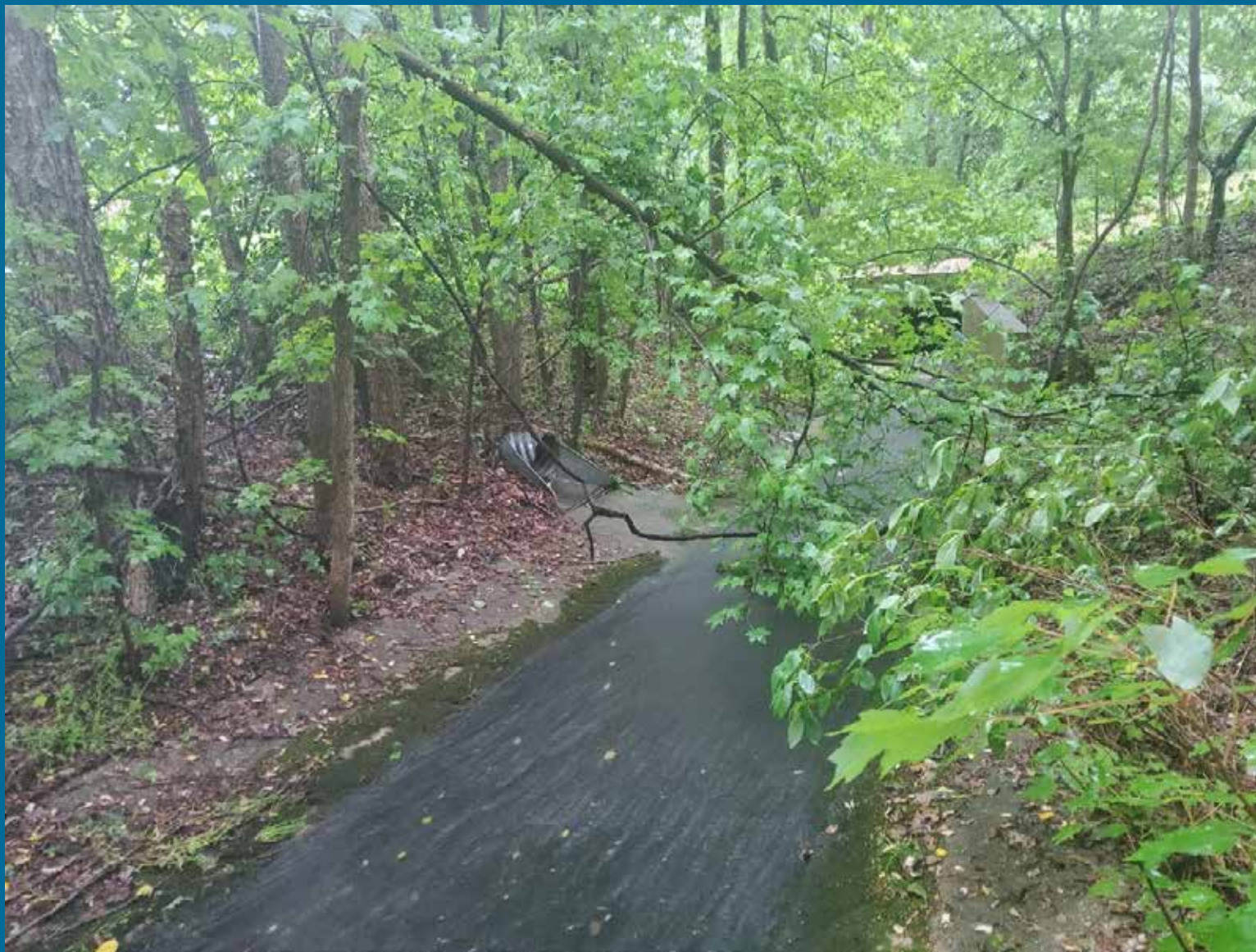


Successes

- **Pinefield Sinkhole Repair**
- **Kudos from MWCOG - WRC, MDE, and DNR**



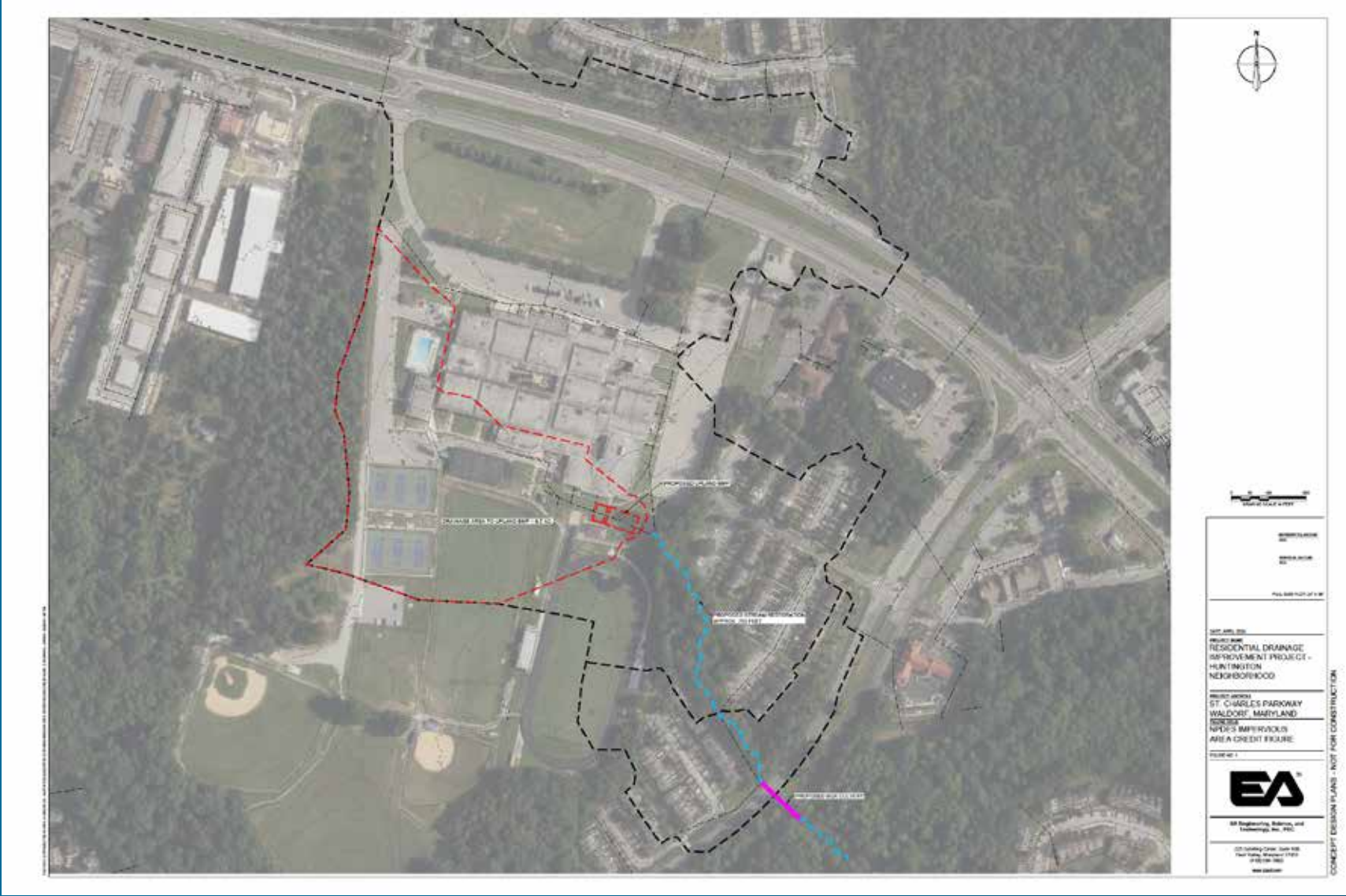
Huntington Sinkhole



Upstream from Huntington Sinkhole

Huntington Difficulties

- **100 Year WSEL and overtopping St. Charles Boulevard**
- **Need for box culvert to convey existing flow**
- **Significant cost increase**
- **Use of Watershed Funds**
- **Upstream Stream Restoration and NPDES credits**



Huntington Concept



Chapel Point Drainage and Erosion



Chapel Point Drainage and Erosion



Chapel Point Drainage and Erosion



Chapel Point Drainage and Erosion



Chapel Point Drainage and Erosion



Aug 4, 2025 3:09:47 PM
9055 Balsam Run
Bel Alton
Charles County
Maryland

Chapel Point Drainage and Erosion



Chapel Point Drainage and Erosion



Green Meadows Drainage Improvements



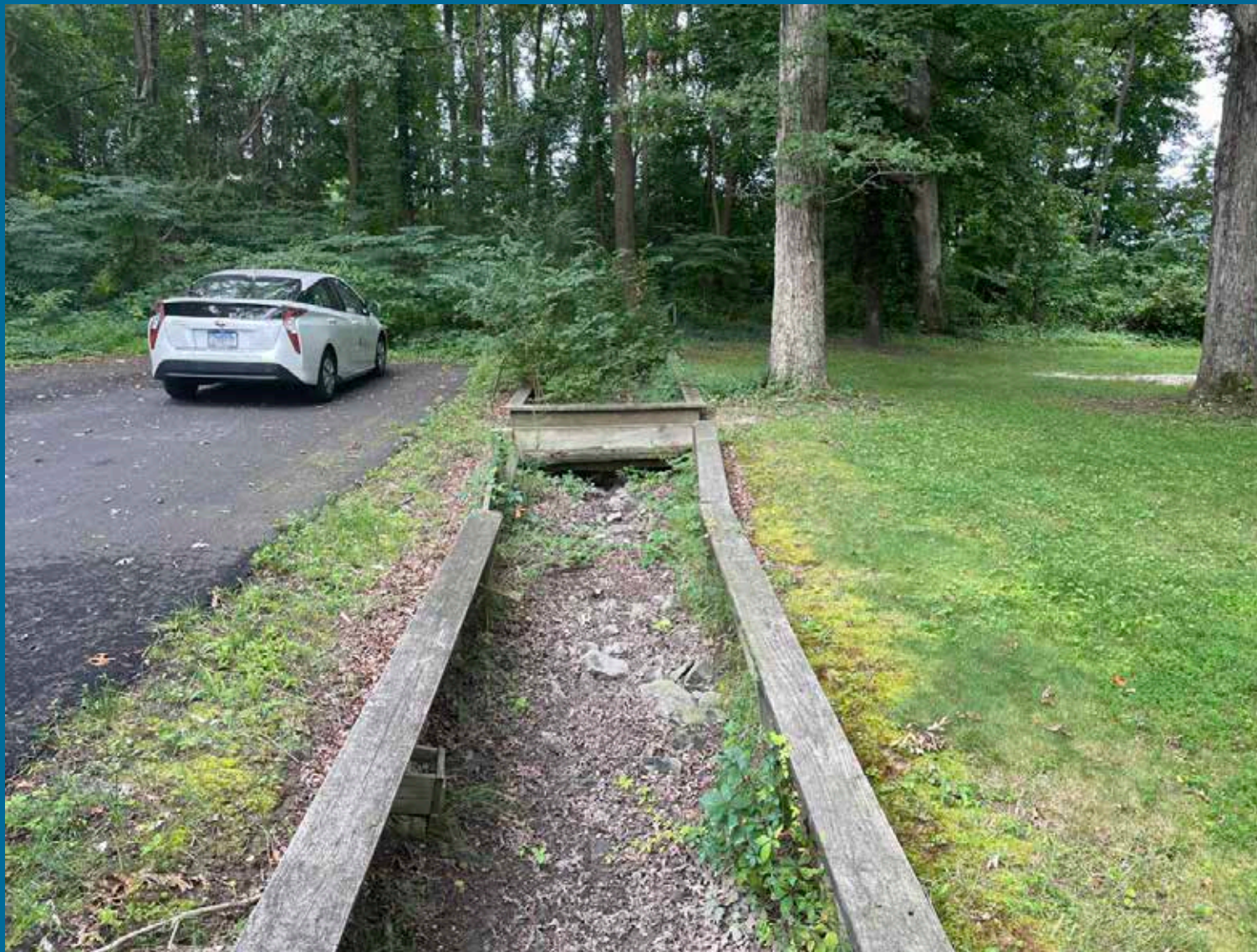
Green Meadows Drainage Improvements



Green Meadows Drainage Improvements



Green Meadows Drainage Improvements



Capital Estates Drainage Improvements



Capital Estates Drainage Improvements



Capital Estates Drainage Improvements

Lessons Learned



Start earlier



**Engage community
and property owners
early in design
process**



**Utilize the subject
matter experts in other
County departments to
create more efficiency**



**Be creative and
innovative**

Questions?



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