

# Making it Rain: Maximizing Stormwater Benefits to your Community



19<sup>th</sup> Annual SESWA Regional Stormwater Seminar  
April 19, 2024



Where are the stormwater funding dollars coming from?



Funding: it's not just for water quality anymore!



It's all about the benefits!



Let's talk project specifics

# Presentation Highlights

Traditional Programs

ARPA Mitigation Programs

Niche Programs  
Programs to watch

FEMA  
BRIC

CWSRF

National Fish  
& Wildlife  
Foundation

Golden  
LEAF

USDA –  
Emergency  
Watershed  
Protection

FEMA  
HMGP

NCDEQ-  
DWI LASII

Local  
ARPA

NC Emergency  
Management  
Division

SCOR –  
ASIP

Corps Water  
Infrastructure  
Financing  
Program

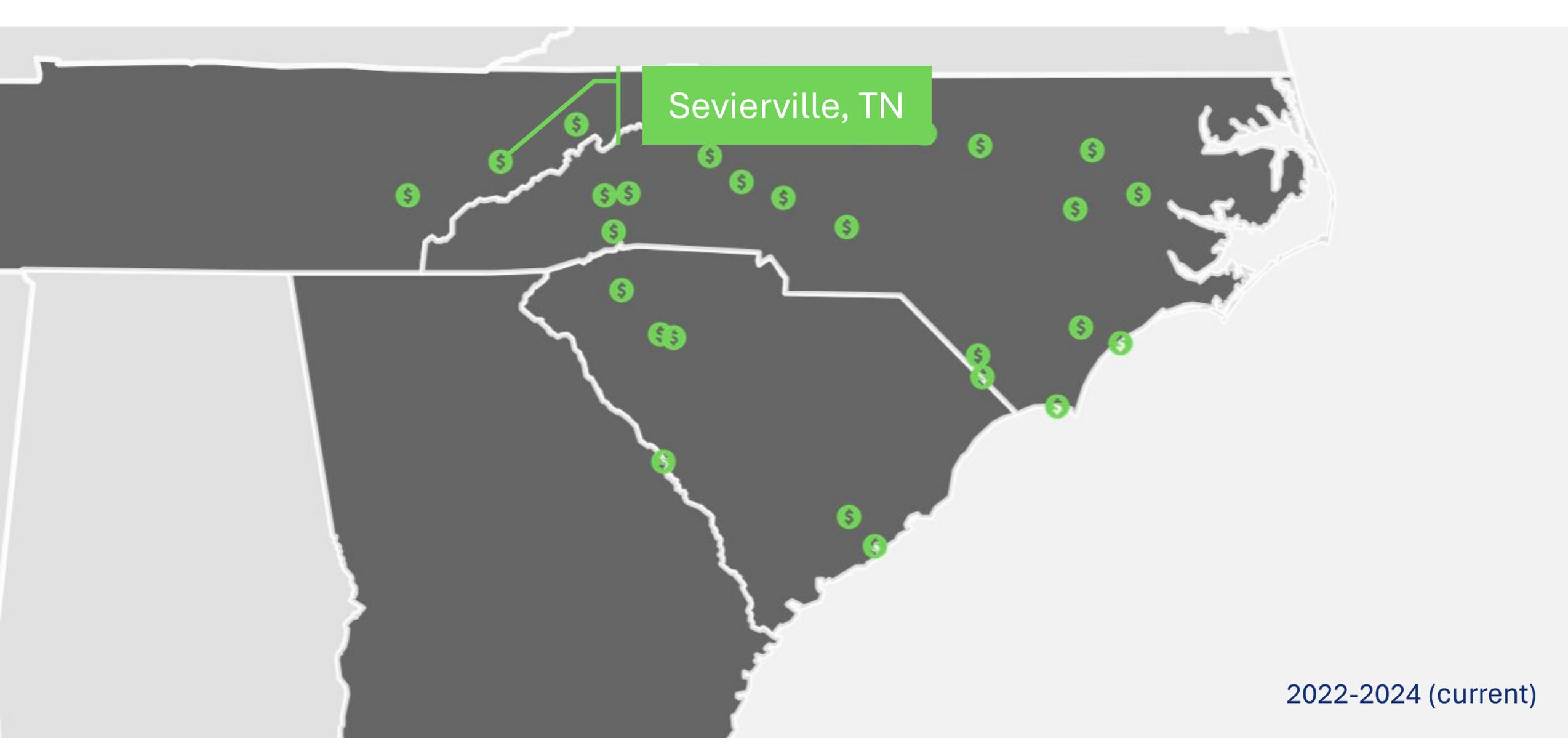
TDEC  
ARPA

EPA Section  
319 Grant



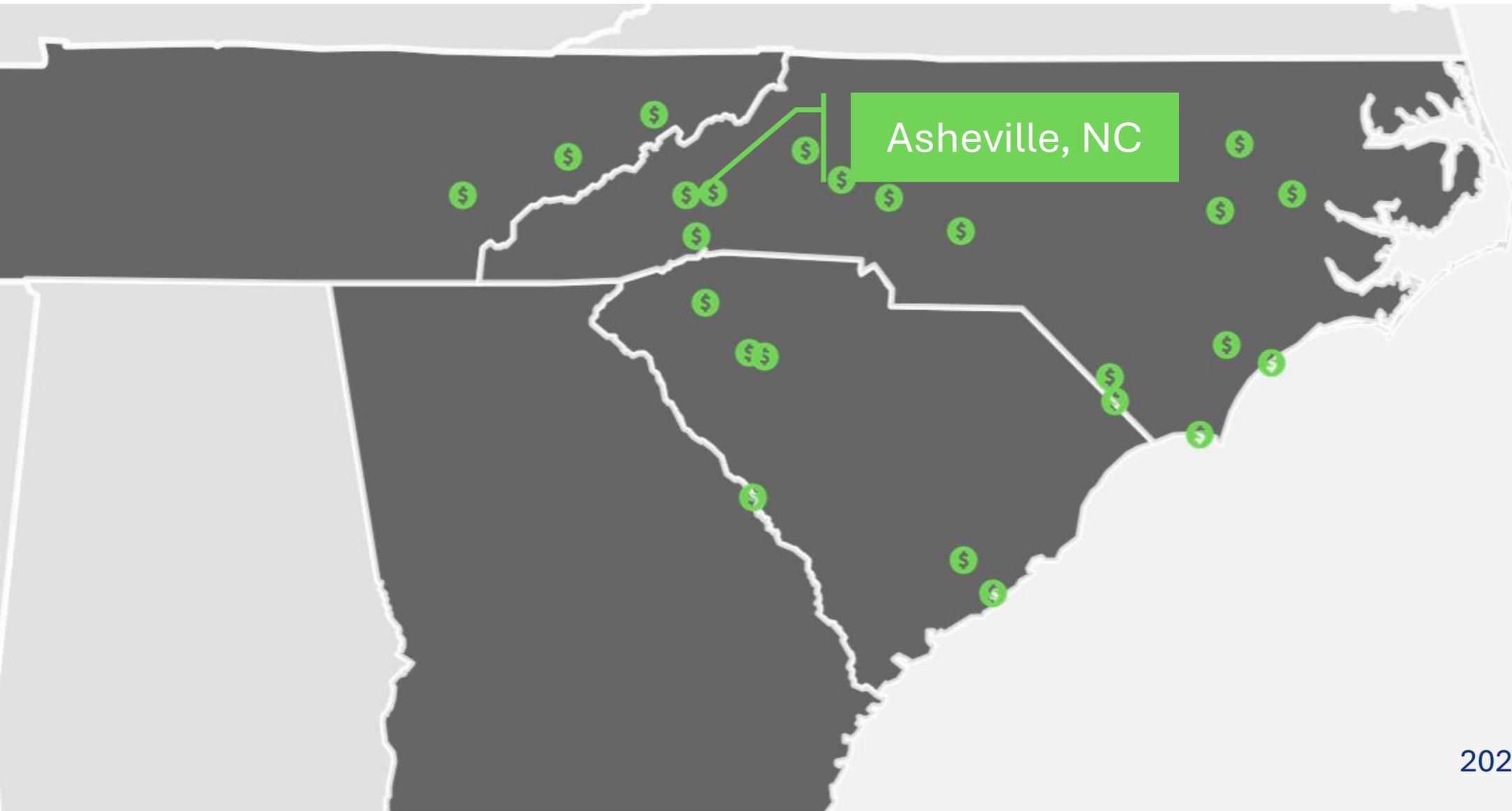
Sweetwater, TN

2022-2024 (current)

A map of Tennessee is shown in dark gray against a light gray background. Numerous green circular markers with a white dollar sign (\$) are scattered across the state, representing various locations. A green callout box with the text "Sevierville, TN" is positioned in the upper central part of the map, with a thin green line pointing to a specific marker in the northern region of the state.

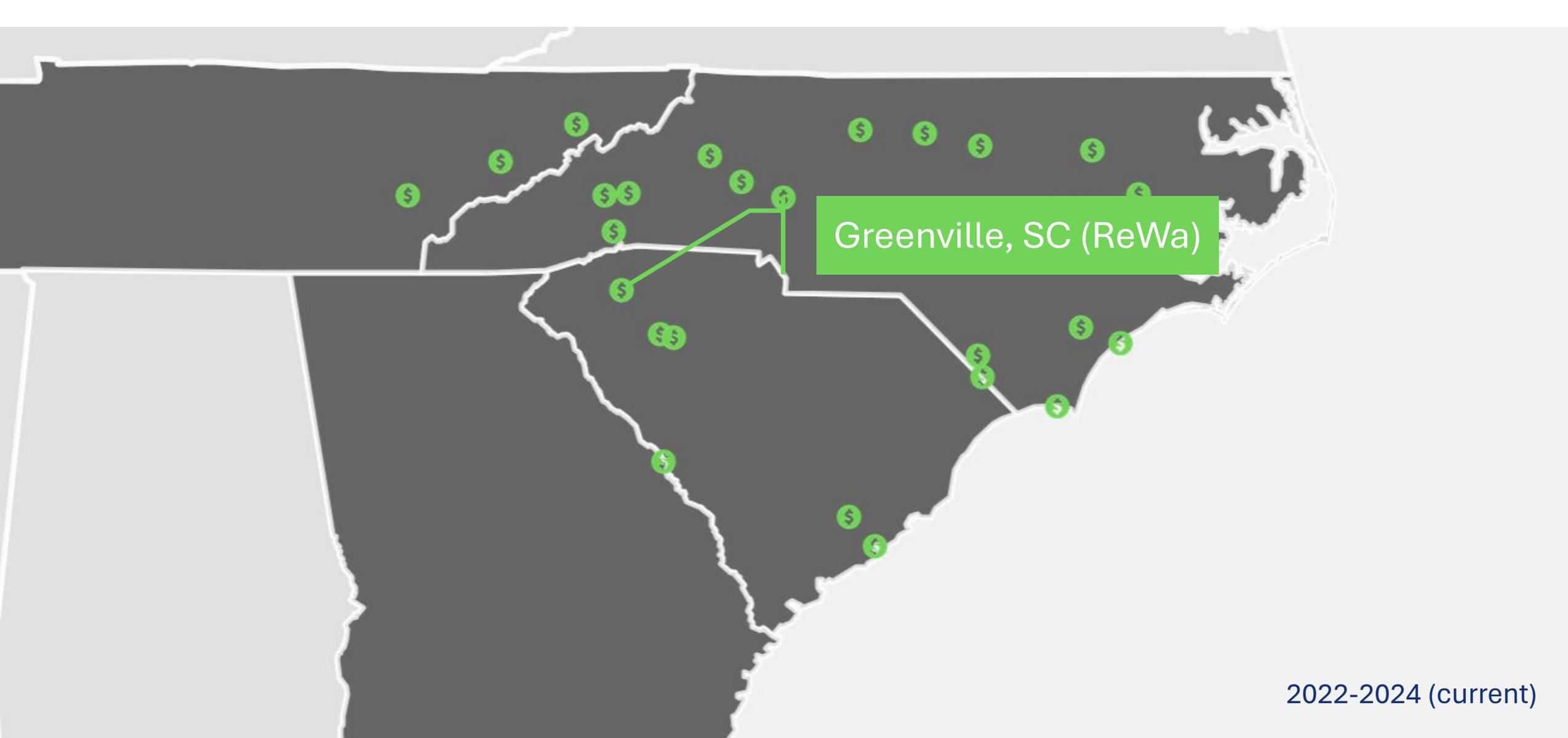
Sevierville, TN

2022-2024 (current)



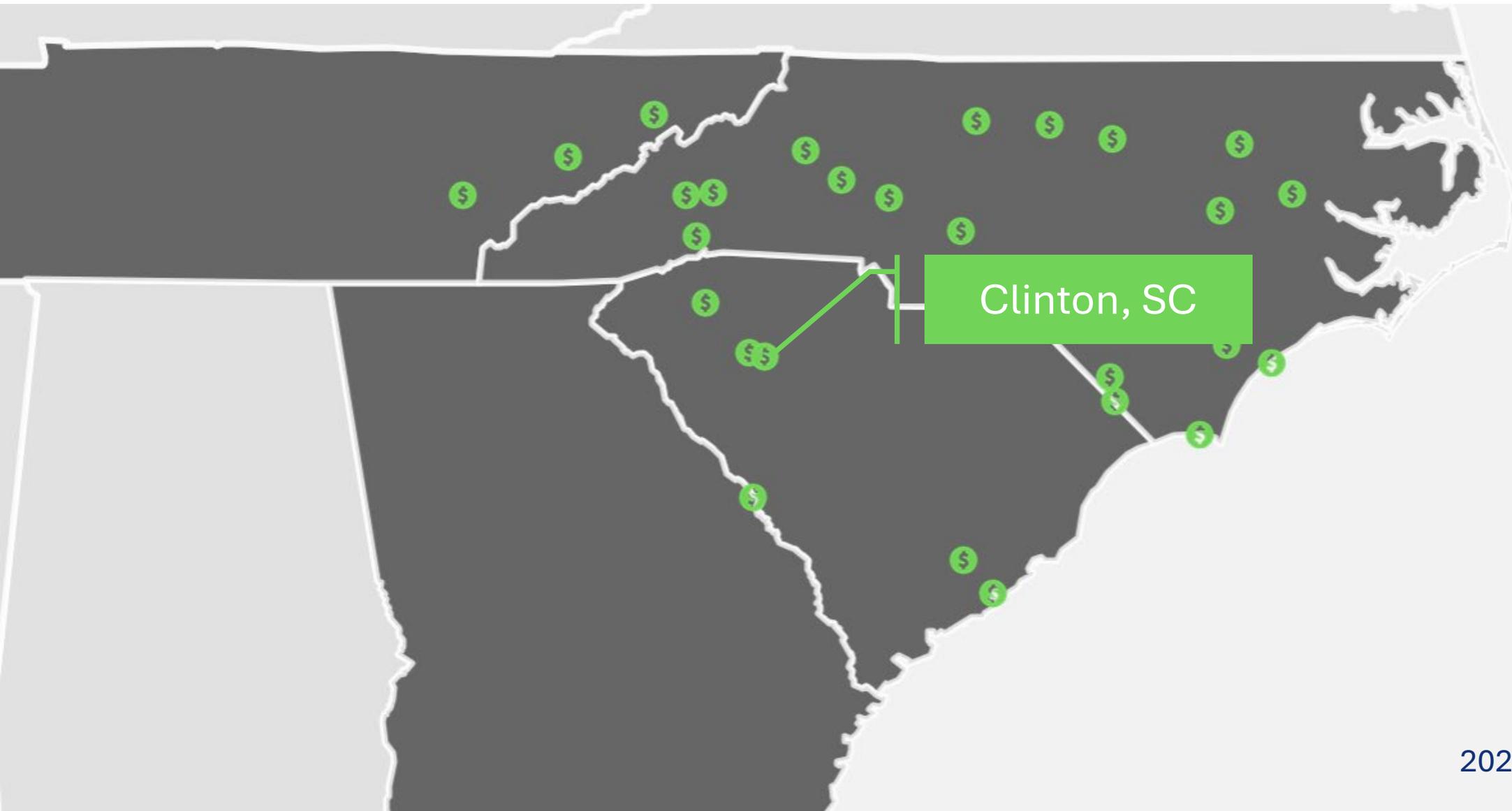
Asheville, NC

2022-2024 (current)



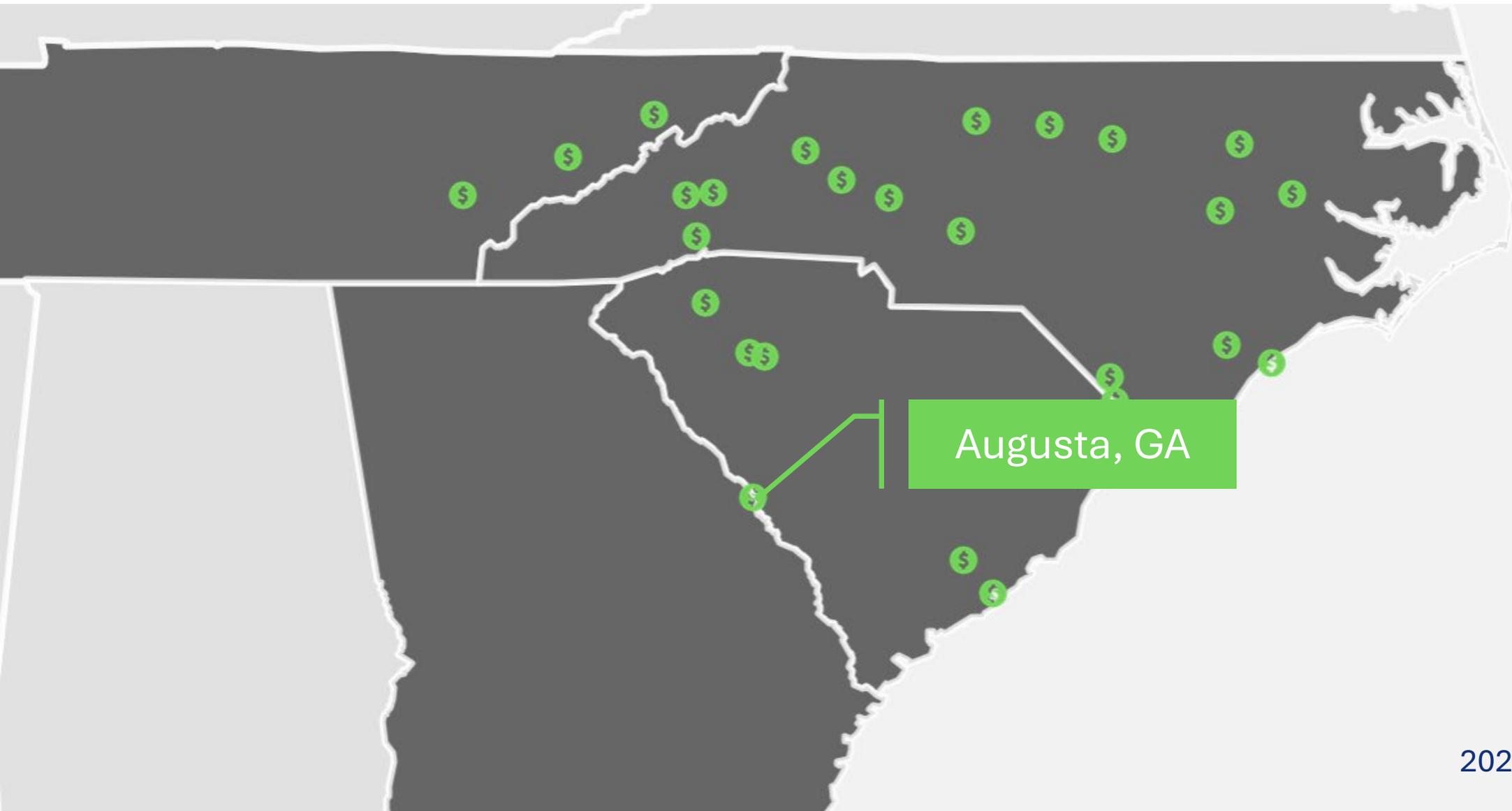
Greenville, SC (ReWa)

2022-2024 (current)



Clinton, SC

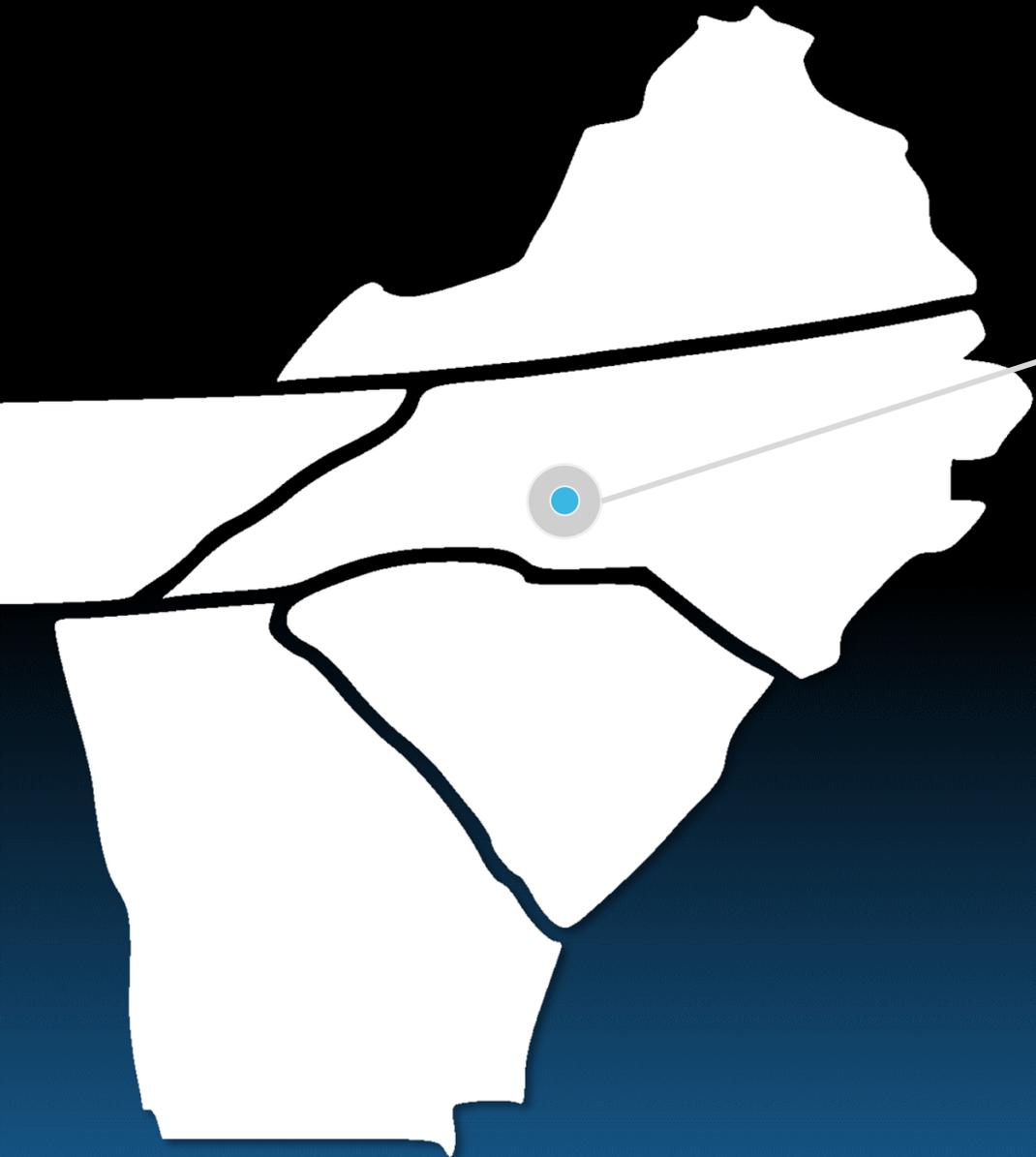
2022-2024 (current)



2022-2024 (current)

# Multi-Layer Benefits





# Mooresville, NC

Center Avenue

Stormwater Improvements









Flood  
Reduction



Funding



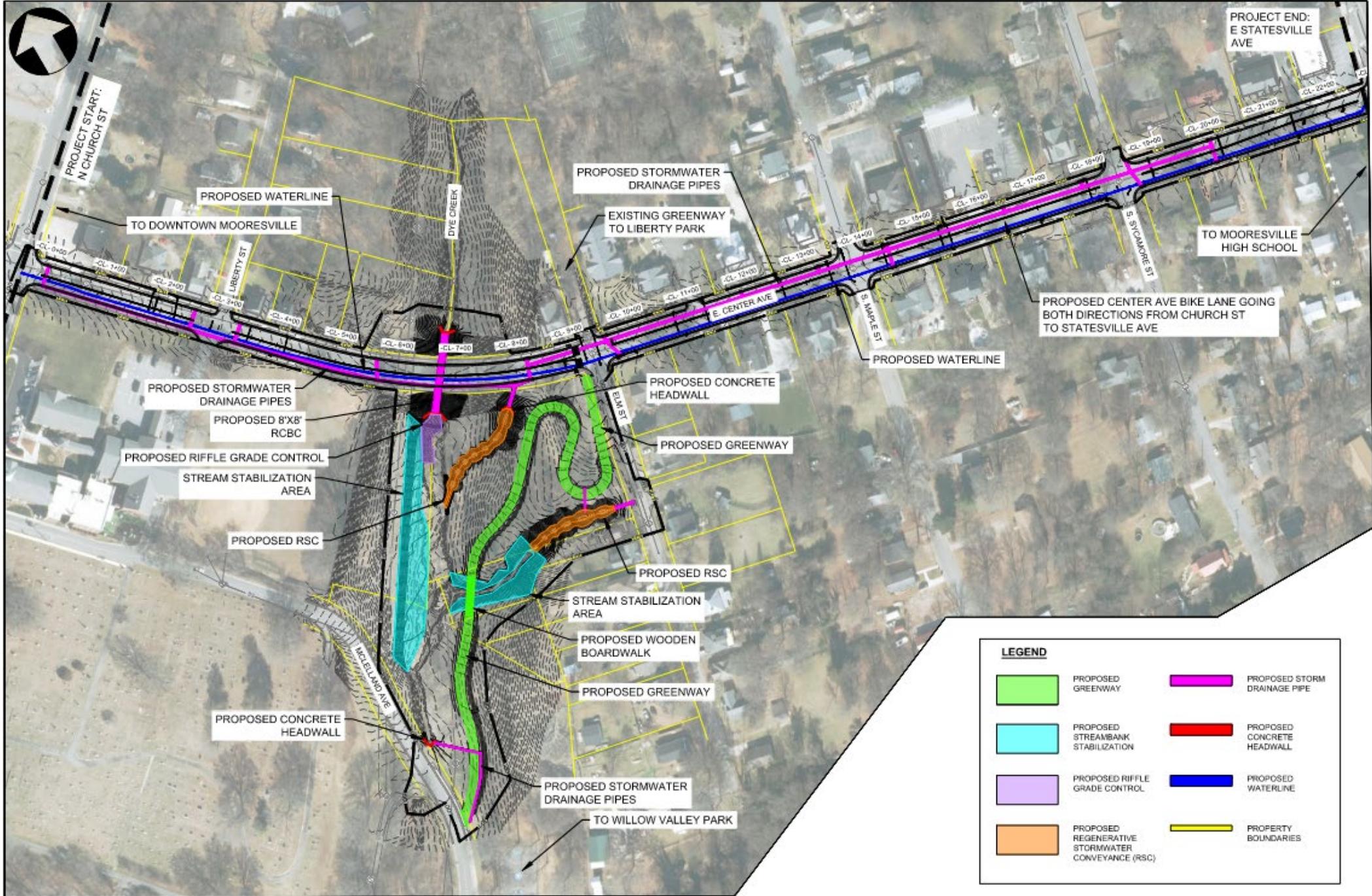
Community  
Connectivity



Environmental  
Education



Green  
Infrastructure



PROJECT START:  
N CHURCH ST

PROJECT END:  
E STATESVILLE  
AVE

TO DOWNTOWN MOORESVILLE

TO MOORESVILLE  
HIGH SCHOOL

PROPOSED CENTER AVE BIKE LANE GOING  
BOTH DIRECTIONS FROM CHURCH ST  
TO STATESVILLE AVE

PROPOSED STORMWATER  
DRAINAGE PIPES  
PROPOSED 8'X8'  
RCBC  
PROPOSED RIFFLE GRADE CONTROL  
STREAM STABILIZATION  
AREA

PROPOSED CONCRETE  
HEADWALL  
PROPOSED GREENWAY

PROPOSED RSC

PROPOSED RSC

STREAM STABILIZATION  
AREA  
PROPOSED WOODEN  
BOARDWALK  
PROPOSED GREENWAY

PROPOSED CONCRETE  
HEADWALL

PROPOSED STORMWATER  
DRAINAGE PIPES

TO WILLOW VALLEY PARK

**LEGEND**

- |   |   |   |                              |
|---|---|---|------------------------------|
|  | PROPOSED GREENWAY                                 |  | PROPOSED STORM DRAINAGE PIPE |
|  | PROPOSED STREAMBANK STABILIZATION                 |  | PROPOSED CONCRETE HEADWALL   |
|  | PROPOSED RIFFLE GRADE CONTROL                     |  | PROPOSED WATERLINE           |
|  | PROPOSED REGENERATIVE STORMWATER CONVEYANCE (RSC) |  | PROPERTY BOUNDARIES          |







# Rocky Mount, NC

Downtown Drainage





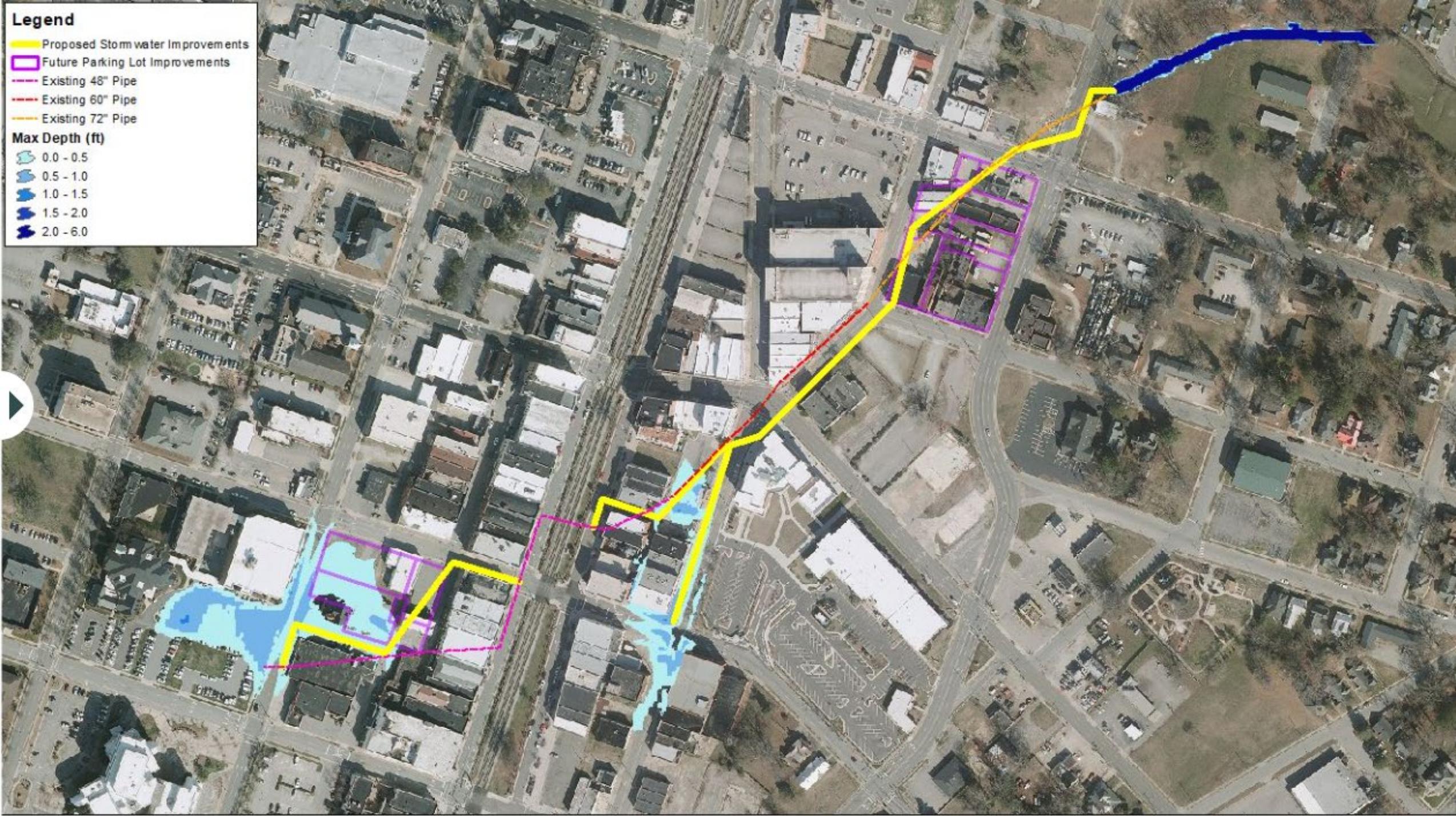


### Legend

- Existing 48" Pipe
- Existing 60" Pipe
- Existing 72" Pipe

### Max Depth (ft)

- 0.0 - 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 6.0



**Legend**

- Proposed Storm water Improvements
- Future Parking Lot Improvements
- Existing 48" Pipe
- Existing 60" Pipe
- Existing 72" Pipe

**Max Depth (ft)**

- 0.0 - 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 6.0

- Legend**
- Proposed Stormwater Improvements
  - Future Parking Lot Improvements
  - Parcels
  - Existing 48" Pipe
  - Existing 60" Pipe
  - Existing 72" Pipe
  - Main Thoroughfares



**Water** - Aging water distribution networks close to existing drainage infrastructure could lead to extended outages and costly repairs if failures occur.



**Hazardous Materials** - Rail lines carry hazardous materials through Downtown on a regular basis. Drainage infrastructure failure could lead to rail failure and service interruption.



**Infrastructure** - The existing drainage system goes directly under a major communications building. The building and associated telecom duct banks will be impacted with further drainage infrastructure failures in the area.



**Patient Movement** - Thomas Street is a main route to the Hospital and currently floods as a result of undersized drainage infrastructure.



**Power (Grid)** - Flooding and drainage infrastructure failure could cause power grid disruptions within the project area.



**Highway/Roadway** - Several roadways in the project vicinity frequently flood and impair travel.

**Railway** - Project area flooding has the potential to impact Railway service.



**Law Enforcement/Fire Services** - Roadway flooding Downtown introduces barriers to Public safety services using the main travel thoroughfares.

**Government Services** - The main Government building for Rocky Mount is located within feet of the existing drainage system and flooding. Existing drainage infrastructure is located under buildings throughout the project area. This reduces access and increases maintenance costs for City crews.



# FY 21 BRIC Qualitative Review Memo

Recipient Name

Subgrant ID

Subrecipient Name

Subapplication Title

NORTH CAROLINA DEPARTMENT  
OF PUBLIC SAFETY

EMA-2021-BR-005-0003

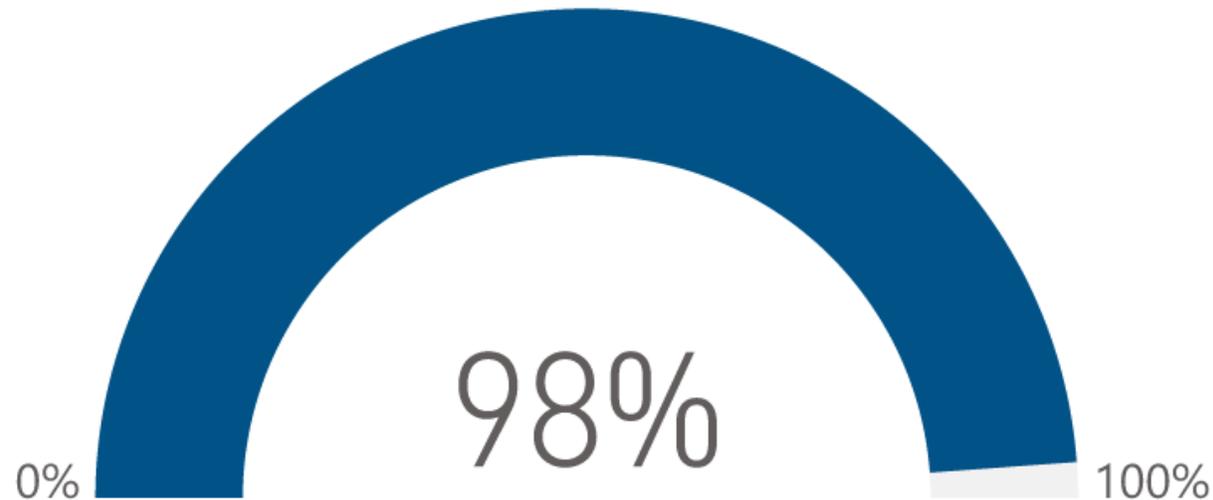
ROCKY MOUNT, (INC) CITY  
OF

City of Rocky Mount: Downtown  
Drainage Project



FEMA BRIC

Overall Percentile Rank



DR-4487-NC

\$10,800,000

Subapplications selected in the FY 2021 National Competition performed between 31% to 98% in the National Panel Review

**Subapplication Qualitative Performance**



# Surf City, NC

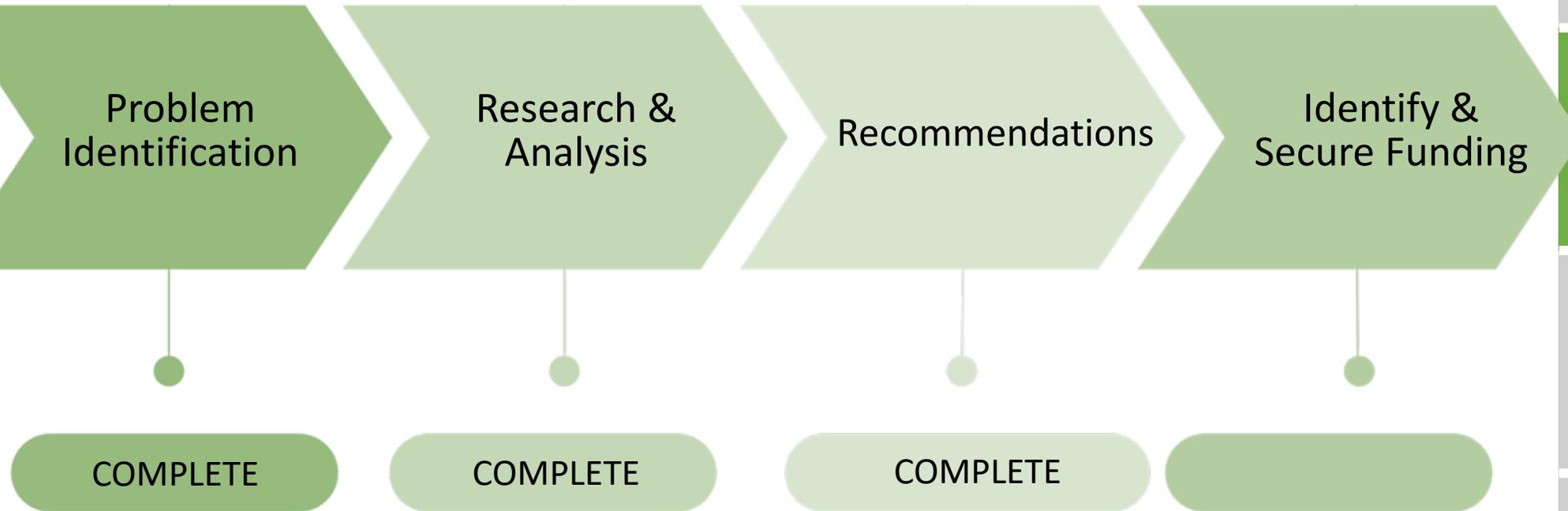
South Shore Drive

Dune Infiltration System

When it rains, it pours...



# Identify and Secure Funding



Flood Reduction



Funding



Community Connectivity



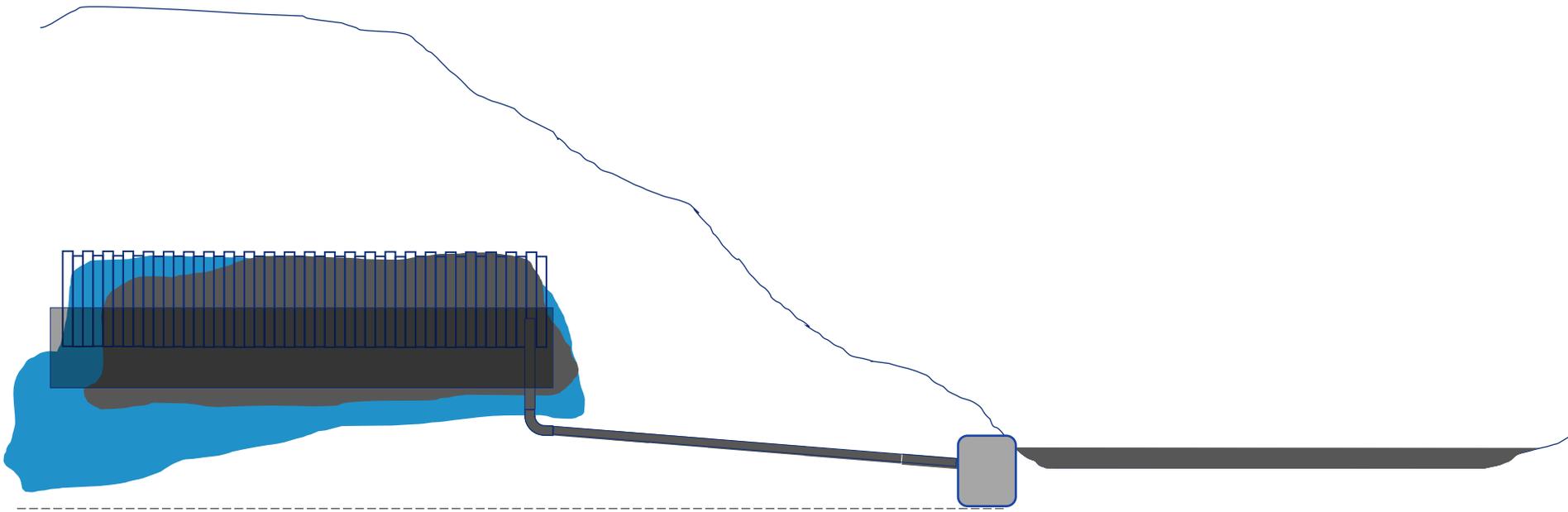
Environmental Education



Green Infrastructure

# How it works

## South Shore Drive Infiltration System



**Seasonally high-water table**



Flood  
Reduction



Funding



Community  
Connectivity



Environmental  
Education



Green  
Infrastructure

# Legend

- Stormwater Pump Station
- Proposed Manhole
- Proposed Inlet
- Proposed Storm Drain
- Proposed Force Main
- ▭ Infiltration Chambers
- ▭ Ponded Water
- Contours (2 ft)
- ▭ Parcels



1815 South Shore Drive Site

# Legend

- Proposed Manhole
- Proposed Inlet
- Proposed Storm Drain
- Infiltration Chambers
- Ponded Water
- Contours (2 ft)
- Parcels

Approximately 2,400 square feet



2201 South Shore Drive Site #6

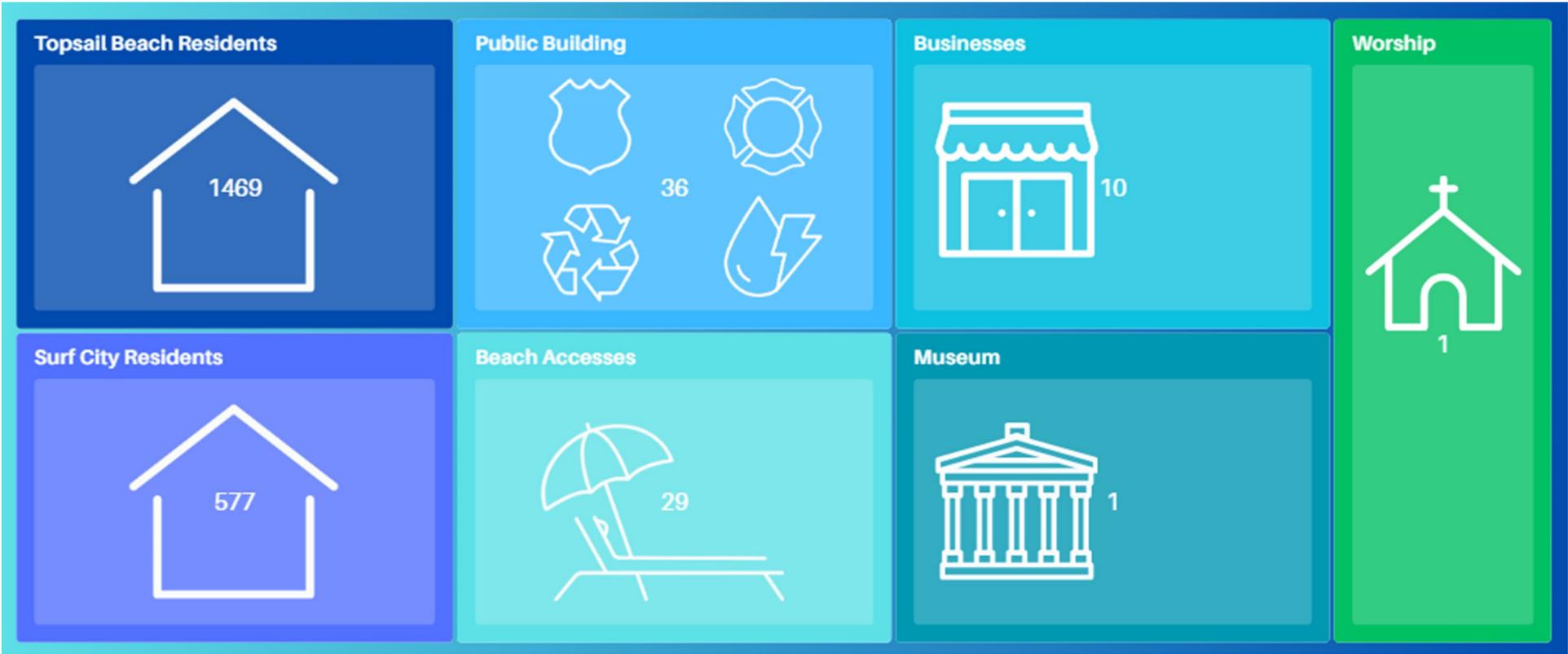
**\$250,000**



**Golden**  
**LEAF**  
**FOUNDATION**



**\$520,100**



Flood Reduction



Funding



Community Connectivity

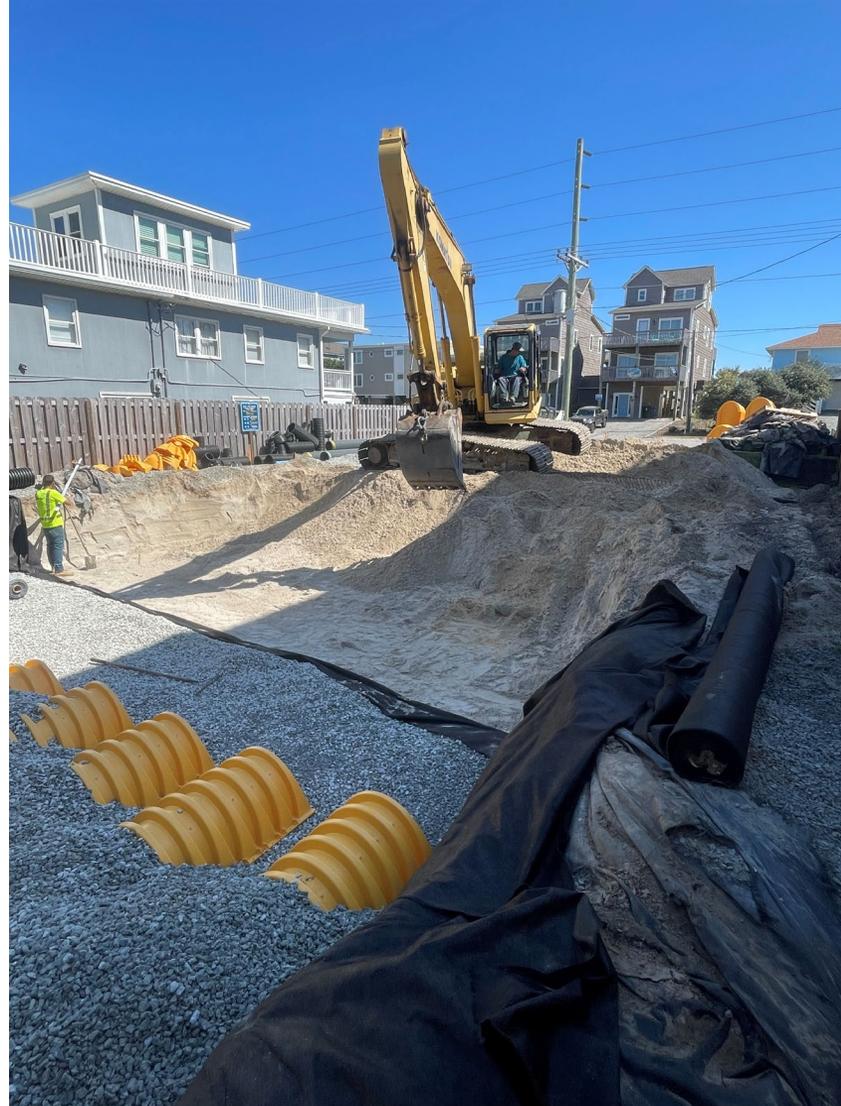
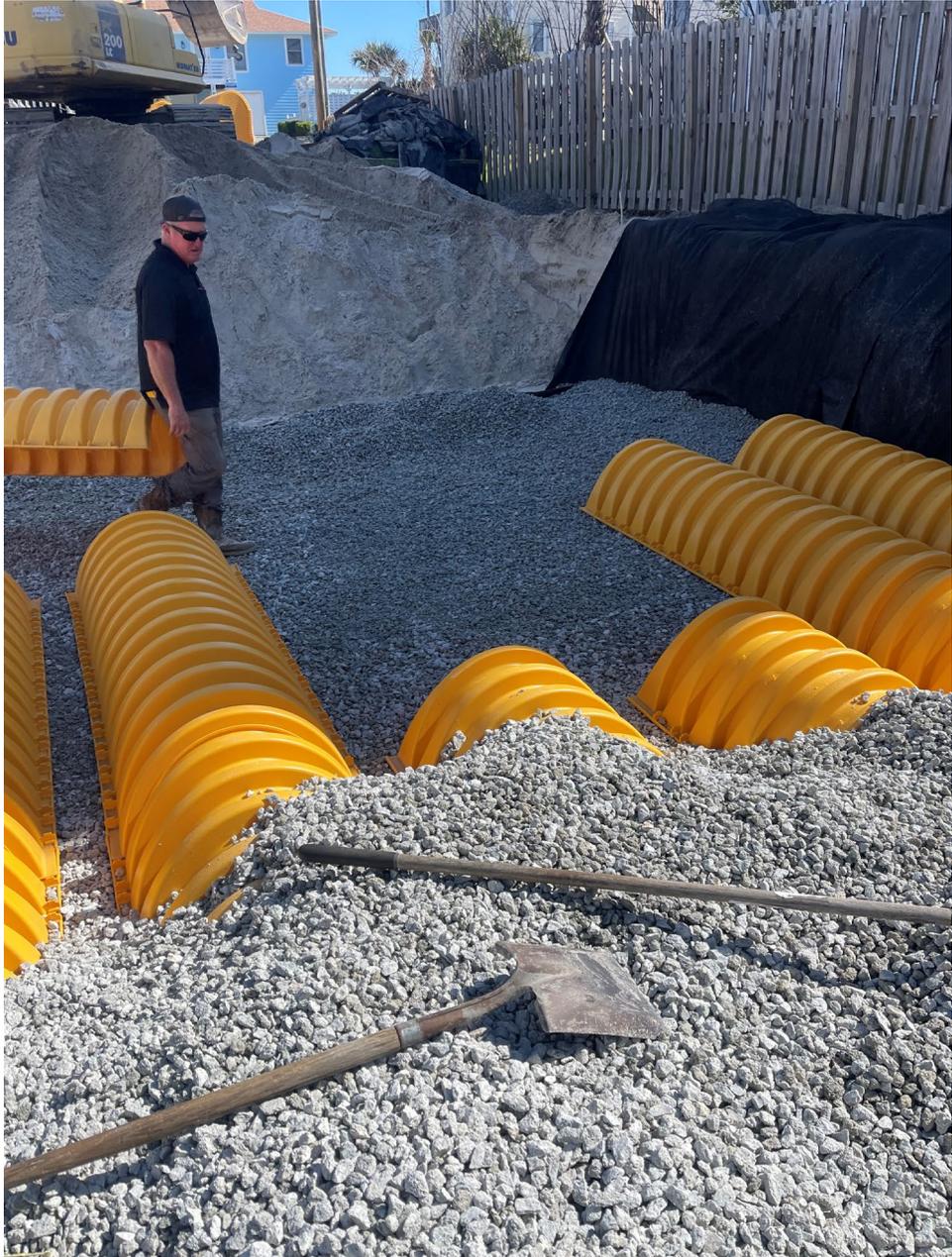


Environmental Education



Green Infrastructure











**Charleston, SC**  
Barberry Woods

# July 2018



July 2021 Rain Bomb (~2 in)  
16-Hours after Rain Bomb

# Multiple Benefits – Slow, store and slowly convey water across the landscape



- **NFWF grant**
  - WK Dickson Johns Island Restoration Plan
- **Dedicated Stormwater Capital Project Fund**
  - Design fees
- **City funding and South Carolina Conservation Bank**
  - Design fees and lot acquisitions
- **South Carolina Office of Resilience (SCOR) ARPA funds through ASIP grants**
  - Construction fees (must expend all funds by December 2026)



Flood  
Reduction



Funding



Community  
Connectivity



Environmental  
Education



Green  
Infrastructure

# Funding Restrictions/ Requirements

## Estimated Total Project Costs:

- Strategic Retreat Plan: ~\$19,300,000
- Full Concept Plan: ~\$16,800,000
- 60% Updated Plan: ~\$8,748,000
- 90% Updated Plan: ~\$7,670,000

**Total project costs include construction, plant materials and property acquisition costs.**



Flood  
Reduction



Funding



Community  
Connectivity

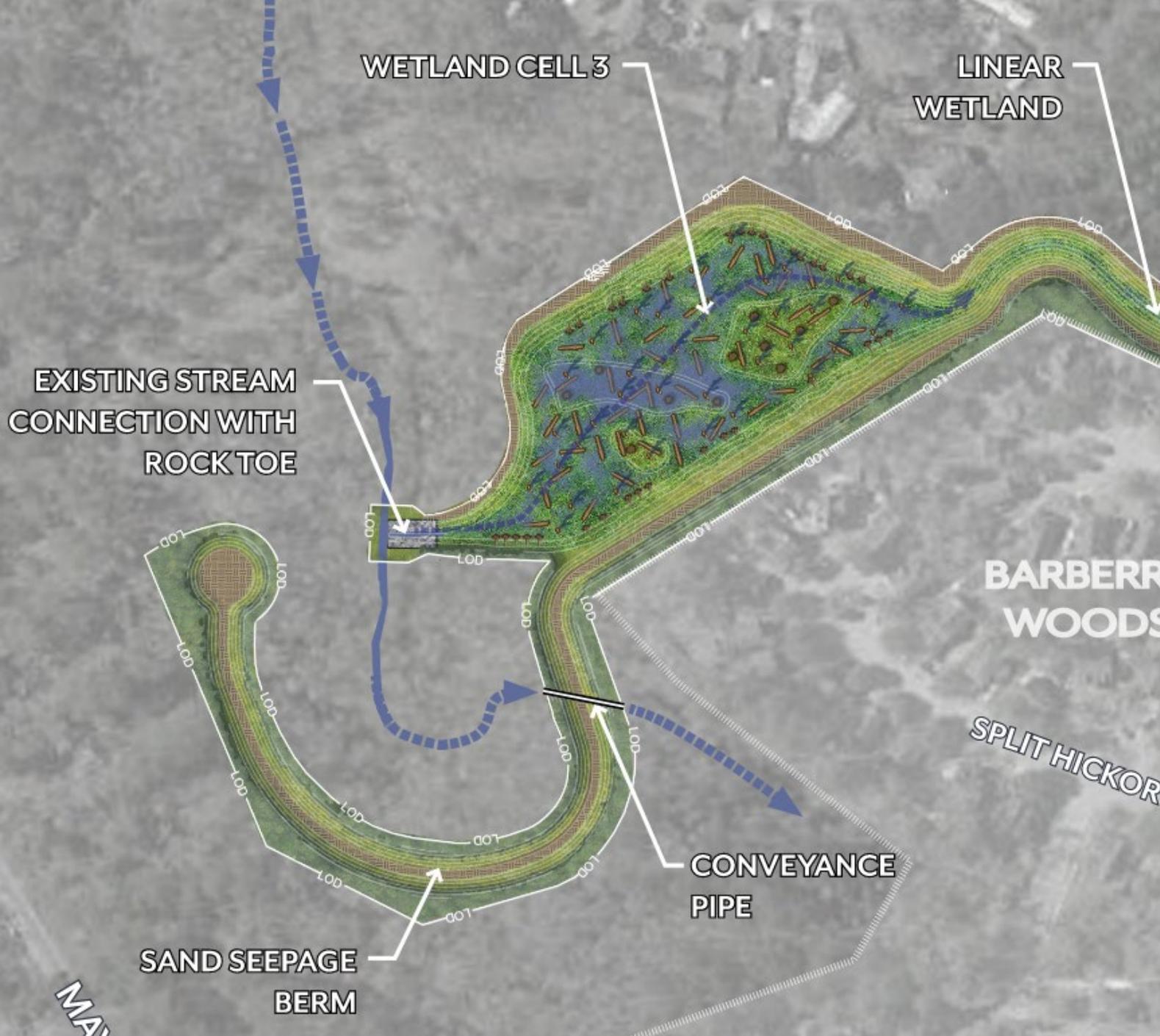


Environmental  
Education



Green  
Infrastructure





Flood Reduction



Funding



Community Connectivity



Environmental Education



Green Infrastructure



Flood  
Reduction



Funding



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Flood Reduction



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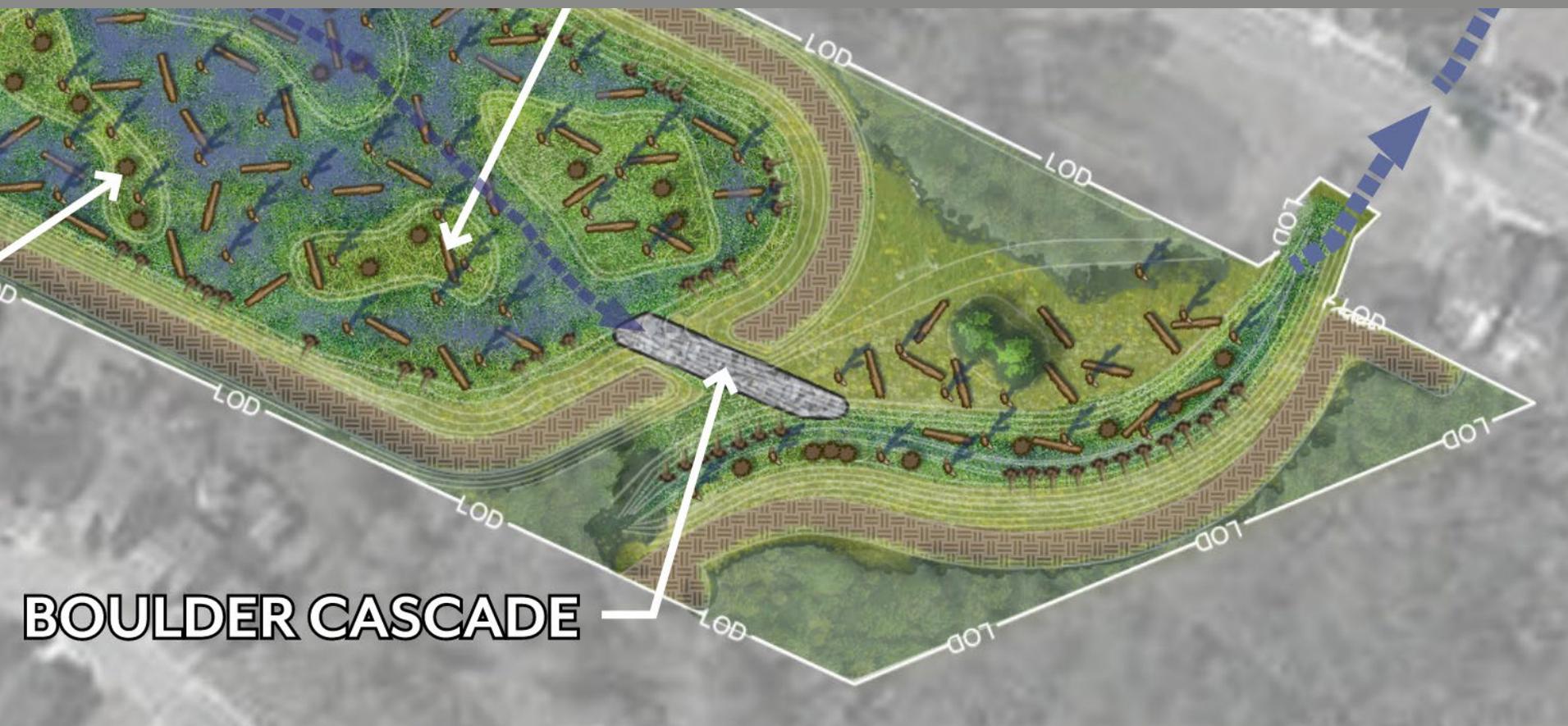
Community Connectivity



Environmental Education



Green Infrastructure



 Flood Reduction

 Funding

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