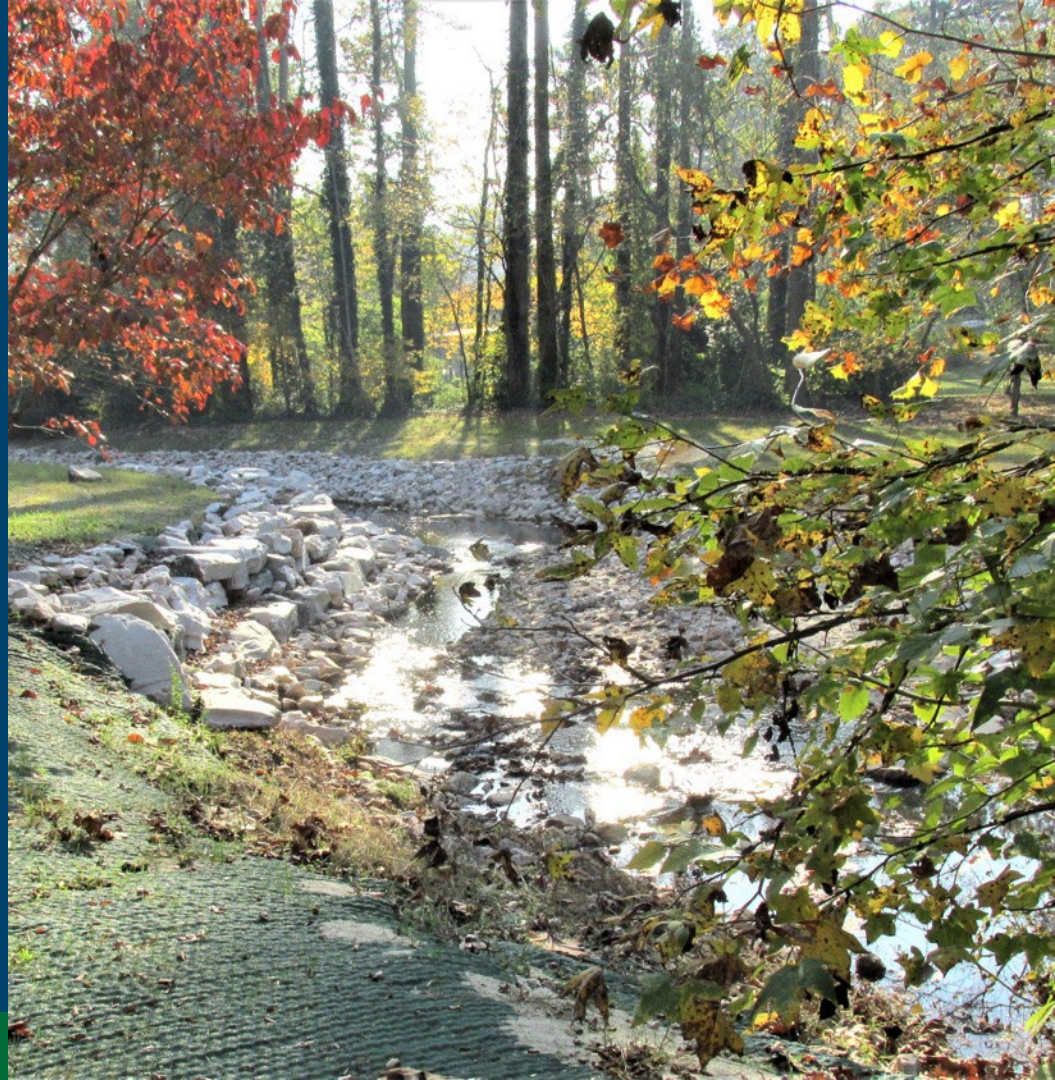
Raleigh Stormwater

Drainage Assistance and Stream Stabilization Programs

Raleigh



Agenda

About Raleigh and Stormwater Program

Drainage Assistance Program

Stream Stabilization Program

Goals for Future

About Raleigh

- City Capital of North Carolina
- ~ 480,000 residents
- 36 watersheds across the city
- Home to the Carolina Hurricanes and NCSU Wolfpack

Raleigh City Council

Stormwater Management Advisory Commission

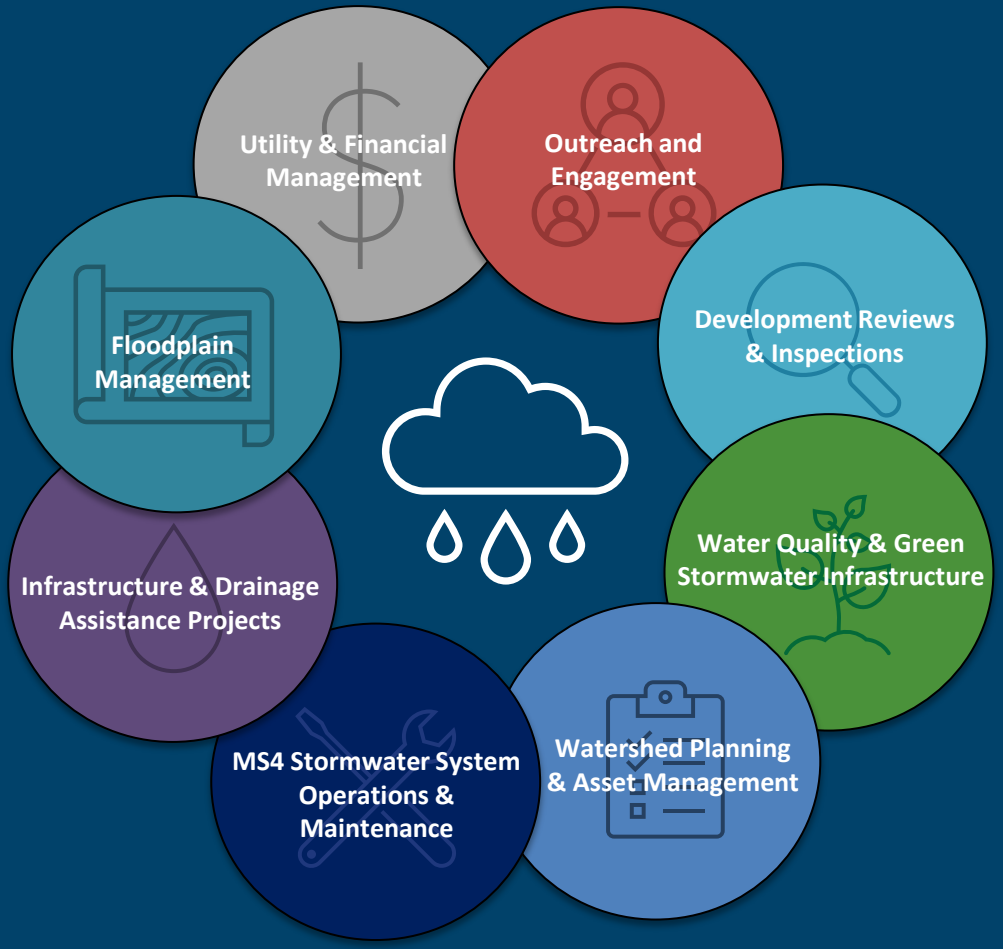
Mission Statement

Manage stormwater to preserve and protect life, support healthy natural resources, and complement sustainable growth for the community.

Vision Statement

Be the “smartest” stormwater program possible to economically and equitably achieve our mission.

Be Stormwater Smart!



Drainage Assistance Program

- Assist residents with flooding and severe erosion
- Fully funded City Program
- Eligibility Requirements:
  - Own property in City limits.
  - Receive public stormwater runoff.
  - Be willing to donate an easement.

Our Program is Unique

- Not many cities in NC assist with private property stormwater issues
- Some programs are a “one-time” fix
- Raleigh’s program takes on major maintenance in perpetuity

Funding and Projects

- **$1.25 million** in funding annually (5% of stormwater utility fee)
- **~6 projects** per year
- Projects ranked in **prioritization model**

Program Timeline

1989
City cost-share program

2016
Drainage Assistance Program

2021
Proposal of Stream Stabilization Program

Nov 2022
Council adopts SS Program

Drainage Assistance Process

Citizen calls or emails about flooding and/or erosion.

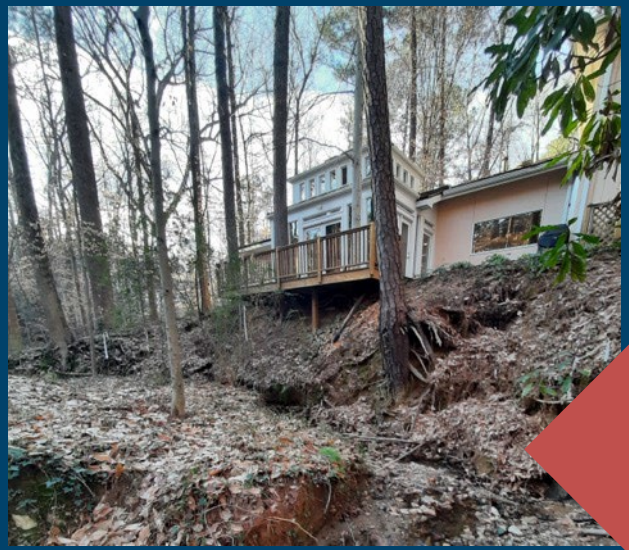
Staff promptly responds and often conducts a site visit.

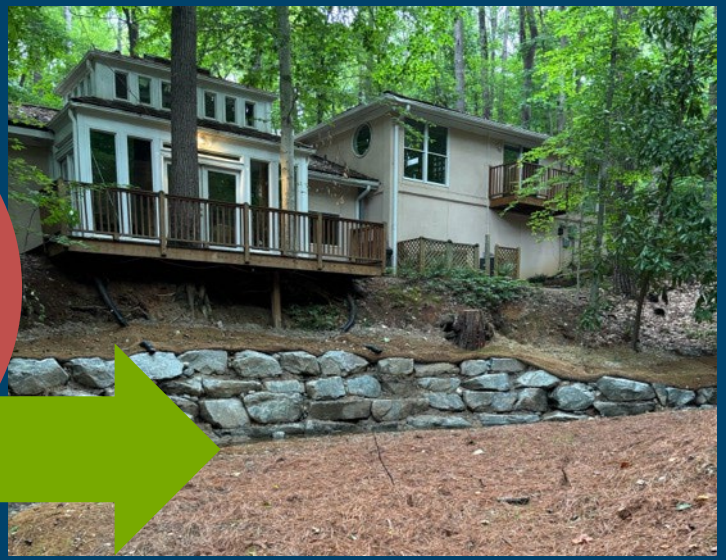
If project qualifies for DA program, the project is scored and ranked.

Projects are rescored as conditions change or after a certain time has elapsed.

Completed Project – Spring Drive

Completed Project – Northbrook Drive





Drainage Assistance vs Stream Stabilization

Major Erosion
Drainage Assistance

Minor-Moderate Erosion
Stream Stabilization

Stream Stabilization Program

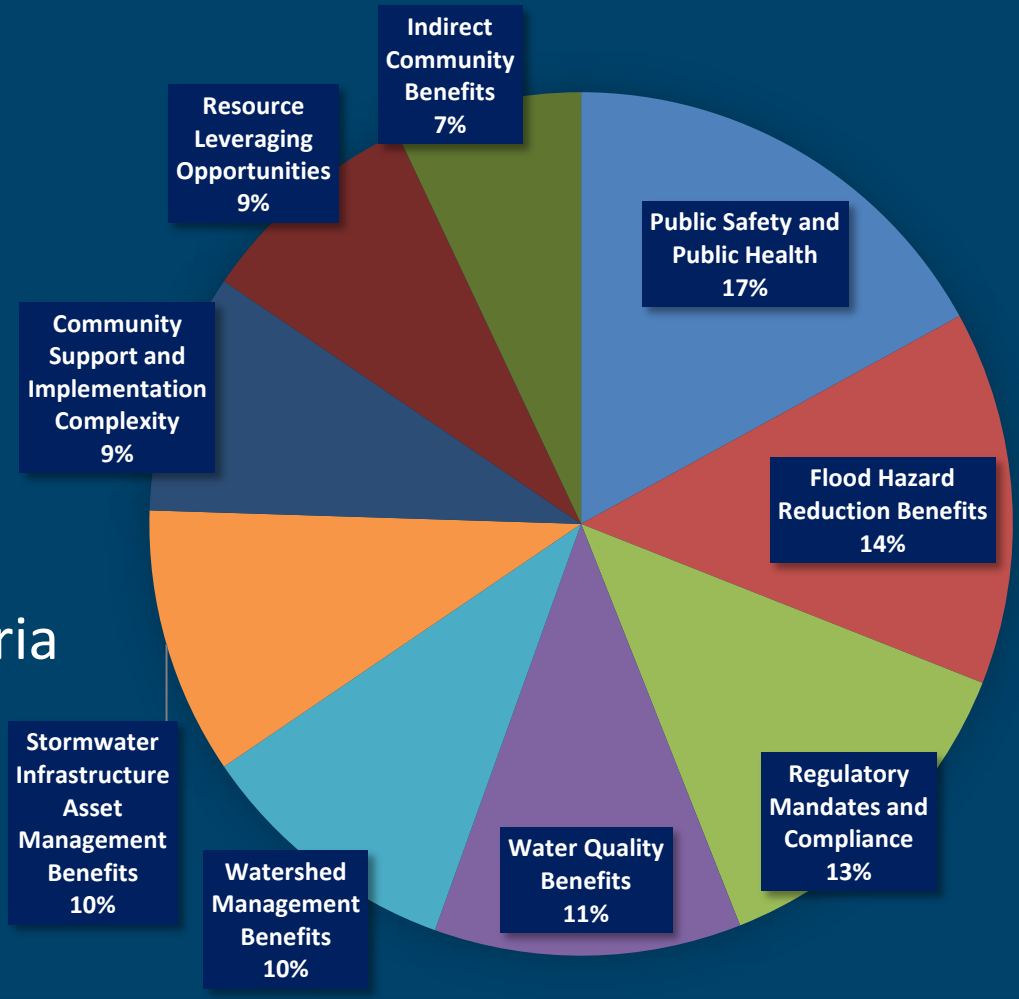
- Addresses streambank erosion that would not score high under the DA Program
- Driven by the public safety criteria within the scoring system
- Purpose: to improve the water quality by protecting and stabilizing the eroding stream banks

Funding and Projects

- **$500k** in annual funding
- **~6 projects** per year
- Projects ranked in **prioritization model**
- Three options:
  - Stream Stabilization
  - Stream Repair Workshops
  - Buffer Builder Bags

Prioritization Model

Integrated Prioritization Criteria



Pending Projects

Rank	Project ID	Project Name	Evaluation Date (most recent)	Primary Type of Project	Sub-Watershed	Council District	Total Project Score (TPS)	Safety Criticality Score (SCS)	Mission Criticality Score (MCS)
							(0 - 100)	(0 - 100)	(0 - 100)
1	216-2017-0060	Donna Road 3709/3705	6/4/2024	Infrastructure	Marsh Creek	B	32.77	100.00	36.43
2	216-2019-0155	Davis Street 2650	5/29/2024	Infrastructure	Beaverdam-SW	D	32.72	100.00	36.43
3	216-2024-0295	Damon Ct	3/4/2024	Infrastructure	Simmons Branch	C	32.72	90.00	35.44
4	216-2024-0293	Waybridge 4804_4800	2/12/2024	Infrastructure	Bushy Branch	D	31.72	90.00	35.44
5	216-2020-0173	Genford Court	2/6/2020	Stream/Erosion	Mine Creek	D	30.13	80.00	37.90
6	216-2019-0151	Charleston Oak Drive 2932	1/17/2024	Stream/Erosion	Richland-WF	B	29.61	70.00	40.06
7	216-2023-0282	Wood Spring Court	5/2/2023	Infrastructure	Neuse	B	29.50	80.00	39.46
8	216-2022-0254	Dilford	1/24/2020	Infrastructure	Crabtree Creek	B	28.82	70.00	29.31
9	216-2019-0153	3341 Neptune Dr.	1/17/2024	Stream/Erosion	Marsh Creek	B	28.81	80.00	35.83
10	216-2024-0297	3020 Mayview	1/0/1900	Stream/Erosion	Beaverdam-SW	D	28.68	70.00	33.87
11	216-2023-0284	New Bern Ave 2337	7/18/2023	Integrated	Crabtree Creek	C	28.21	60.00	35.33
12	216-2024-0298	1837 White Oak	1/0/1900	Stream/Erosion	Crabtree Creek	E	27.63	80.00	35.56
13	216-2023-0289	Levister Ct	1/0/1900	Infrastructure	Rocky Branch	D	27.21	80.00	34.70
14	216-2020-0175	Glenbrook Dr.	11/29/2023	Infrastructure	Walnut Creek	D	27.07	60.00	26.25
15	216-2017-0037	Paducah Dr_Mansura Dr	2/22/2024	Infrastructure	Neuse	C	26.99	70.00	27.24
16	216-2021-0217	Port Royal Rd 2109	2/18/2021	Infrastructure	Marsh Creek	A	26.92	60.00	30.48
17	216-2020-0210	Grist Mill 7201	12/5/2023	Infrastructure	Perry Creek	A	26.75	70.00	23.78
18	216-2021-0211	Meredith Street	12/5/2023	Infrastructure	Walnut Creek	D	26.73	50.00	28.71
19	216-2018-0125	Runnymede Rd. 906	11/12/2019	Infrastructure	Beaverdam-SW	E	26.63	70.00	34.55

Stream Stabilization Process

Citizen calls or emails about stream and/or channel erosion.

Staff promptly responds and often conducts a site visit.

Staff determine proper option: Stream Stabilization, Stream Repair Workshop, or Buffer Builder Bag.

If the site qualifies, the project is scored and ranked.

Option 1: Stream Stabilization

- Moderate stream erosion that does not threatening foundation of home or structure
- Permitting/Design/Construction type project
- Requires Permanent Drainage Easement from citizen
- Usually involves 2-4 properties

Option 2: Stream Repair Workshops

- Held between late fall and early spring.
- 3-5 workshops per year.
- Teach cost-effective and natural methods for repairing streams.

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Stream Repair Workshops

Typical Materials

- Coir matting
- Coir logs
- Straw
- Riparian buffer seed mix
- Live stakes

Stream Repair Workshops

Hadley Road

- 90 feet of erosion
- Installed coir matting, straw, and riparian buffer seed mix.
- 200 live stakes and 10 trees were planted.
- Cost: $450 Stream Repair vs $220k stream stabilization involving 13 properties

Hadley Road Stream Repair

Stream Repair Workshops

Sylvester Street

- 110 feet of erosion
- Installed coir matting, coir logs, straw, and riparian buffer seed mix
- 200 live stakes and 5 trees were planted
- Cost: $350 Stream Repair vs $85k stream stabilization cost

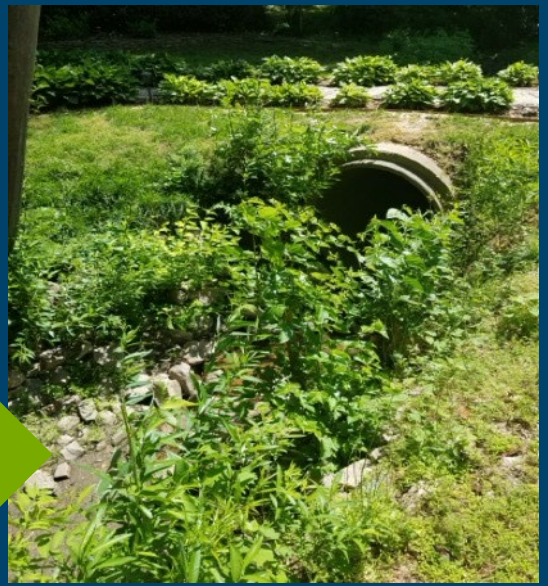
Sylvester Street Stream Repair

Stream Repair Workshops

Watkins Street

- 100 feet of erosion
- Installed coir matting and straw.
- 200 live stakes were planted
- Cost: $532 Stream Repair vs $105k Stream Stabilization

Watkins Street Stream Repair



Option 3: Buffer Builder Bags (B3)

- Free native shrub and tree seedlings provided.
- Helps prevent erosion and create a streamside buffer.
- First-come, first-served




Buffer Builder Bag Installation

Stream Stabilization Program 2024 Review

- ✓ Three design-bid-build projects nearly completed **($840k)**
- ✓ 26 projects in design **($3.7 million)**
- ✓ B3 – **405 plants** provided and **2208 live stakes**
- ✓ **4 stream bank workshops** and **15 small-scale stream repairs** totaling **1,700 LF** of stream

Program Goals For 2024 and 2025

- ✓ Be a teacher in stream repair workshops
- ✓ Update the program policies
- ✓ Be more proactive and less reactive
  - PIPE Program (Proactive & Equitable Private Property Engagement)
- ✓ Do more in-house designs for projects

Thank You!

Chas Webb

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Acknowledgements

- Stream Stabilization Team
- Drainage Assistance Team
- Stormwater Communications

Visit **raleighnc.gov** and search **“Drainage Assistance Program”** for more info.