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URBAN STREAM RESTORATION:
BALANCING A CHANGING LANDSCAPE WITH EVER-CHANGING REGULATIONS

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AGENDA

REGULATIONS & DRIVING FORCES

CONSTRAINTS

ORDINANCES & URBAN RESTORATION

OVERCOMING CHALLENGES

Q&A

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REGULATIONS & DRIVING FORCES

FEDERAL REGULATIONS

- Clean Water Act
- Environmental Protection Agency
    - National Pollutant Discharge Elimination System (NPDES)
    - Chesapeake Bay TMDL
- Federal Emergency Management Agency
- U.S. Fish and Wildlife Service

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STATE REGULATIONS

DRIVING FORCES BEHIND URBAN STREAM RESTORATION

VIRGINIA POLLUTANT DISCHARGE ELMINATION SYSTEM

CHESAPEAKE BAY & LOCAL TMDLS

RESOURCE PROTECTION & MANAGEMENT AREAS

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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LOCAL CODES & ORDINANCES

EVERY LOCALITY IS DIFFERENT

- Land Disturbance
- Zoning
- Floodplains
- Environmental Protection

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CONSTRAINTS

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CONSTRAINTS

STRUCTURES

LAND ACQUISITION

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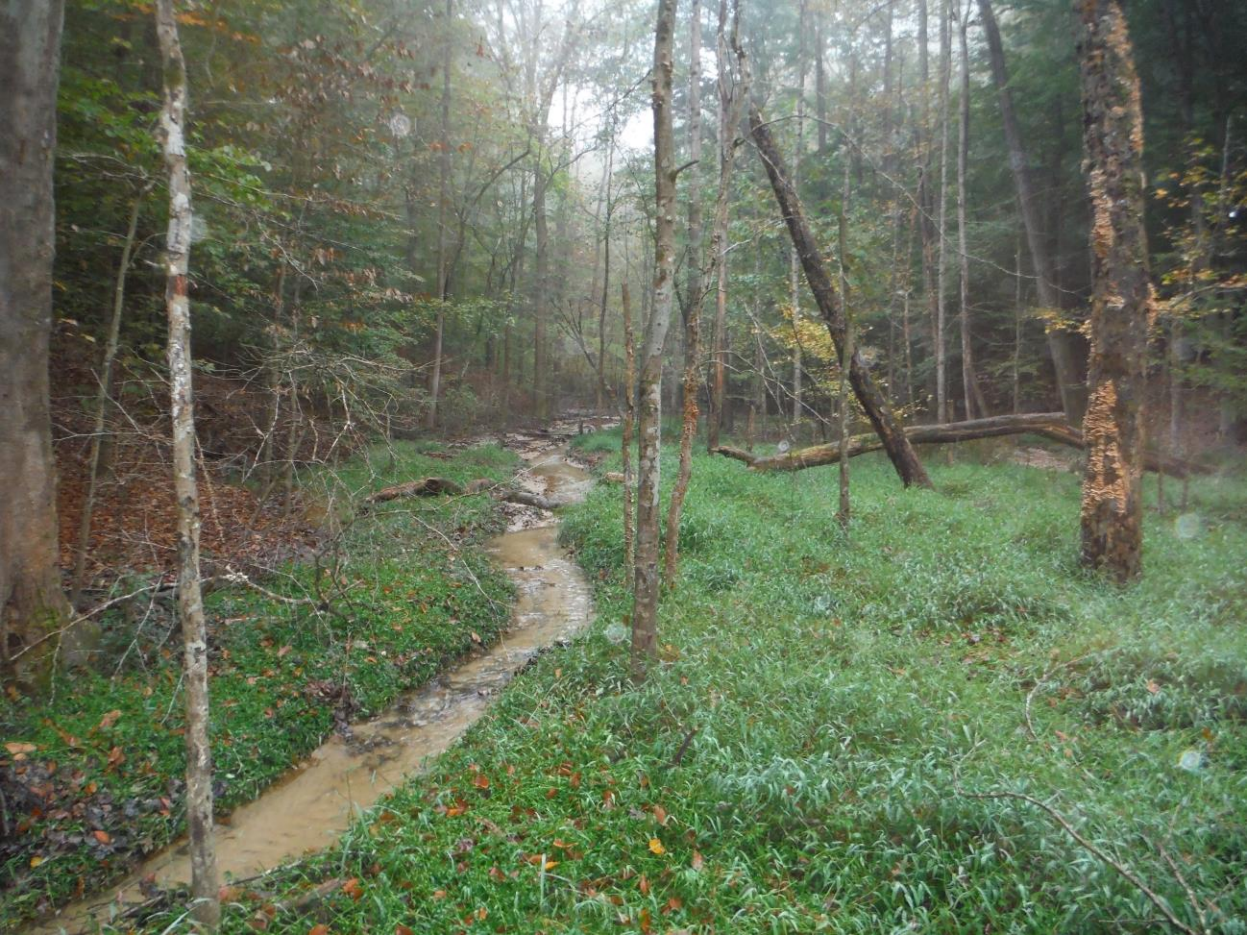
CONSTRAINTS



ENVIRONMENTAL RESOURCES

CULTURAL RESOURCES

CONSTRAINTS

UTILITIES

GRADING & ADJACENT USES

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CONSTRAINTS

UNEXPECTED DISCOVERIES

... AND MORE UNEXPECTED CONDITIONS

CONSTRAINTS

EARTHWORK BALANCE, CONTRIBUTING DRAINAGE, & FLOODPLAIN CONNECTION

SITE ACCESS

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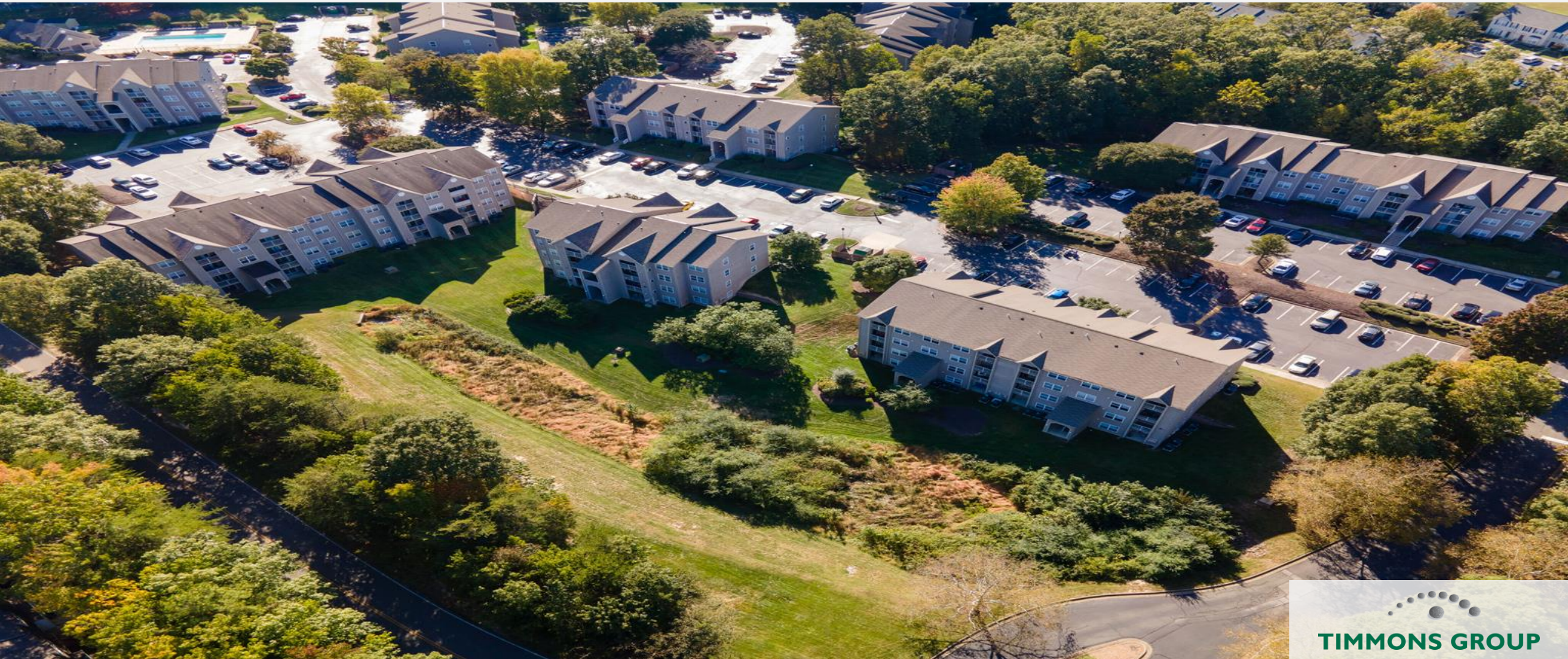
ORDINANCES & URBAN RESTORATION



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LOCAL ORDINANCES THROUGH AN URBAN STREAM RESTORATION LENSE

FLOODPLAINS

FEMA

- 1.00 ft allowable rise in 100-yr floodplain

Locality with Stringent Ordinance

- 0.00 ft of rise acceptable within a100-yr floodplain

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VALIDITY OF STRICT LOCAL ORDINANCES

FLOODPLAINS

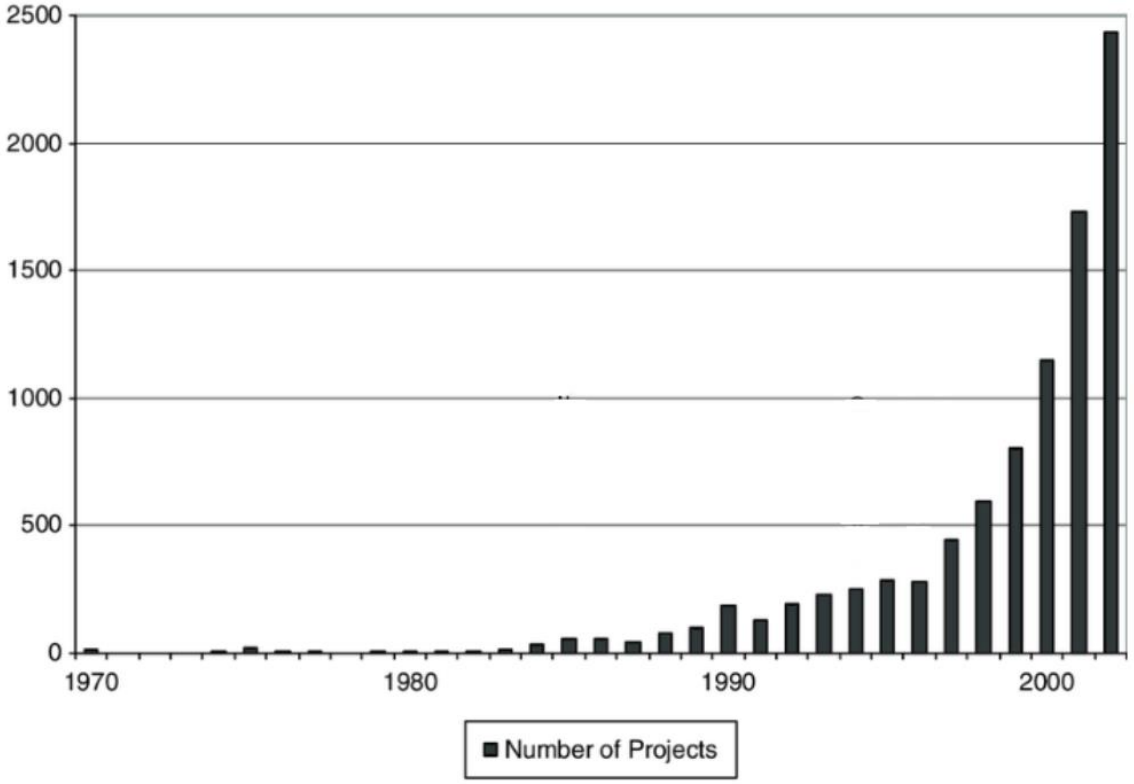
- Designed with development in mind
- Increase water surface elevations?
    - ✓ Increase flooding adjacent to infrastructure or buildings
    - ✓ Increase impacts to local flora and fauna

VALIDITY OF STRICT LOCAL ORDINANCES

FLOODPLAINS

- 2000s Stream Restoration boom

  ✓ Regulation struggling to keep up

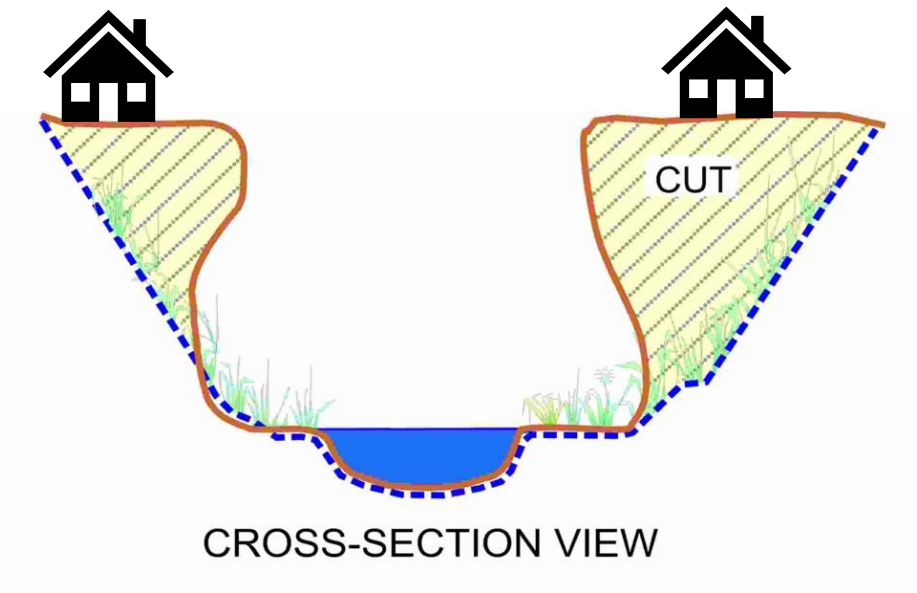


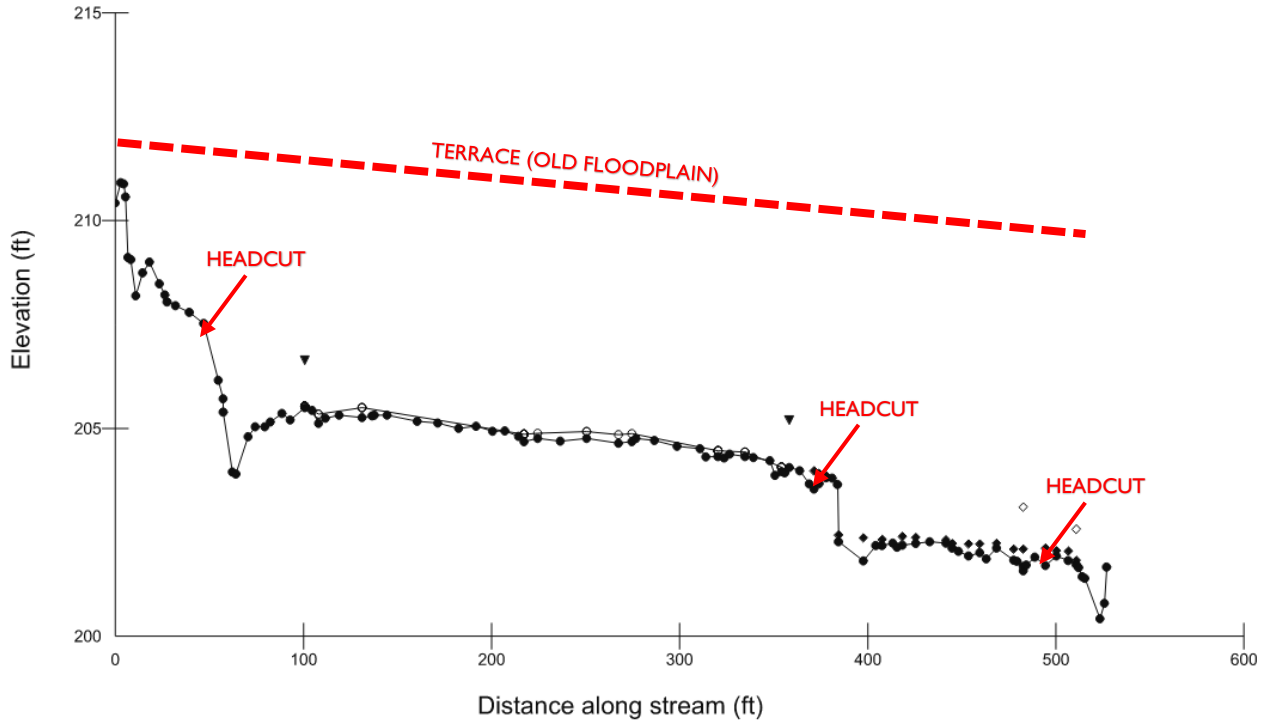
Number of stream restoration projects in the US per year, as reported by the National River Restoration Science Synthesis project (Bernhardt et al. 2005)

NO-RISE ORDINANCES VS STREAM RESTORATION PRACTICES

- Many locally-mapped floodplains are based on incised systems

  - ✓ Engineers must design to incised conditions
  - ✓ Urban systems generally more incised





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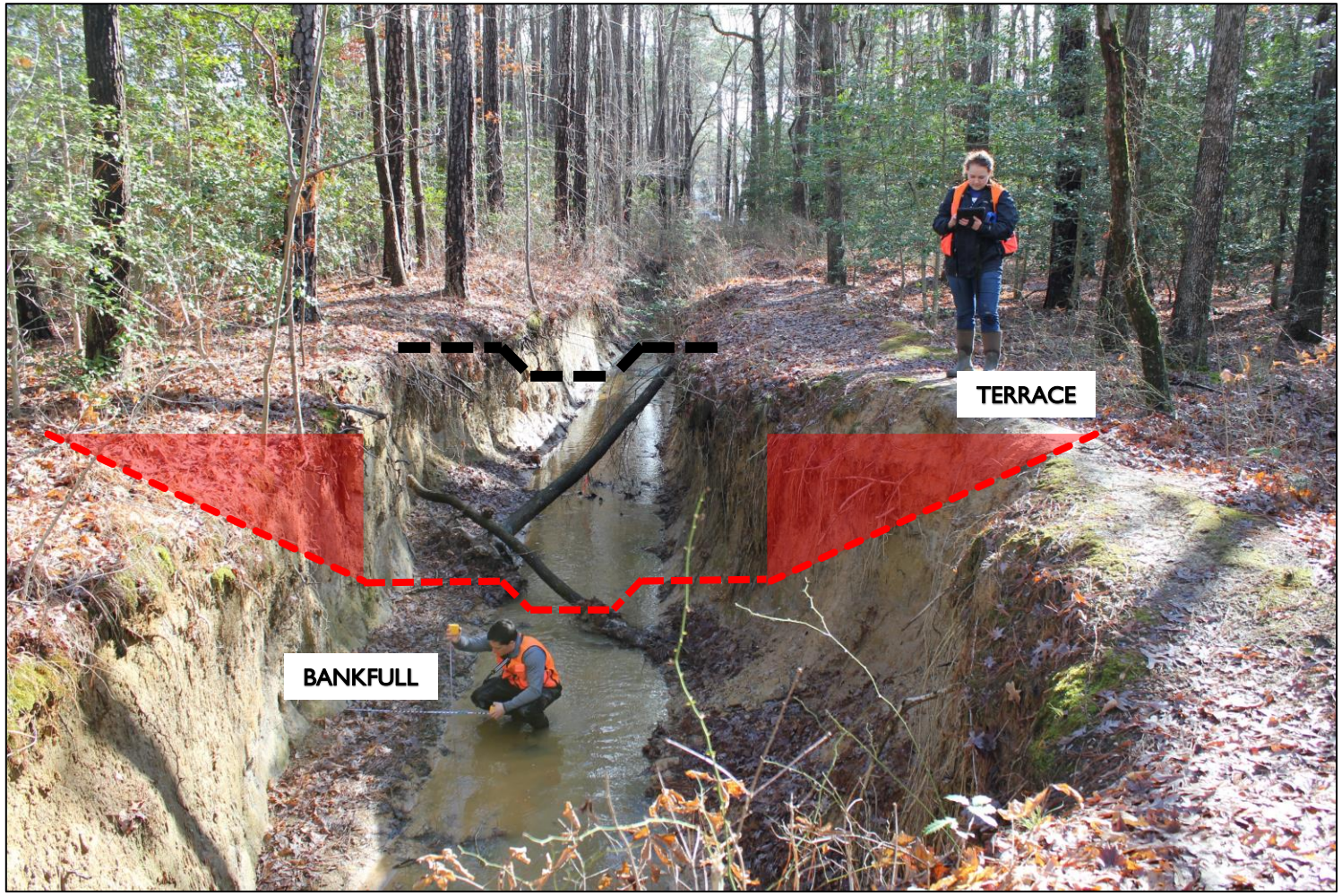
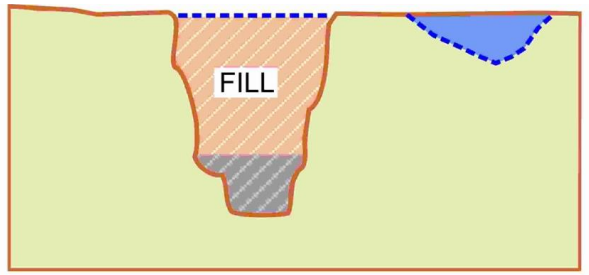
NO-RISE ORDINANCES VS STREAM RESTORATION PRACTICES

PRIORITY 1 VS PRIORITY 2

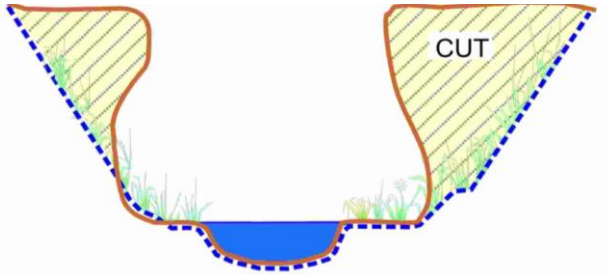


PRIORITY 1



CROSS-SECTION VIEW

PRIORITY 2



CROSS-SECTION VIEW

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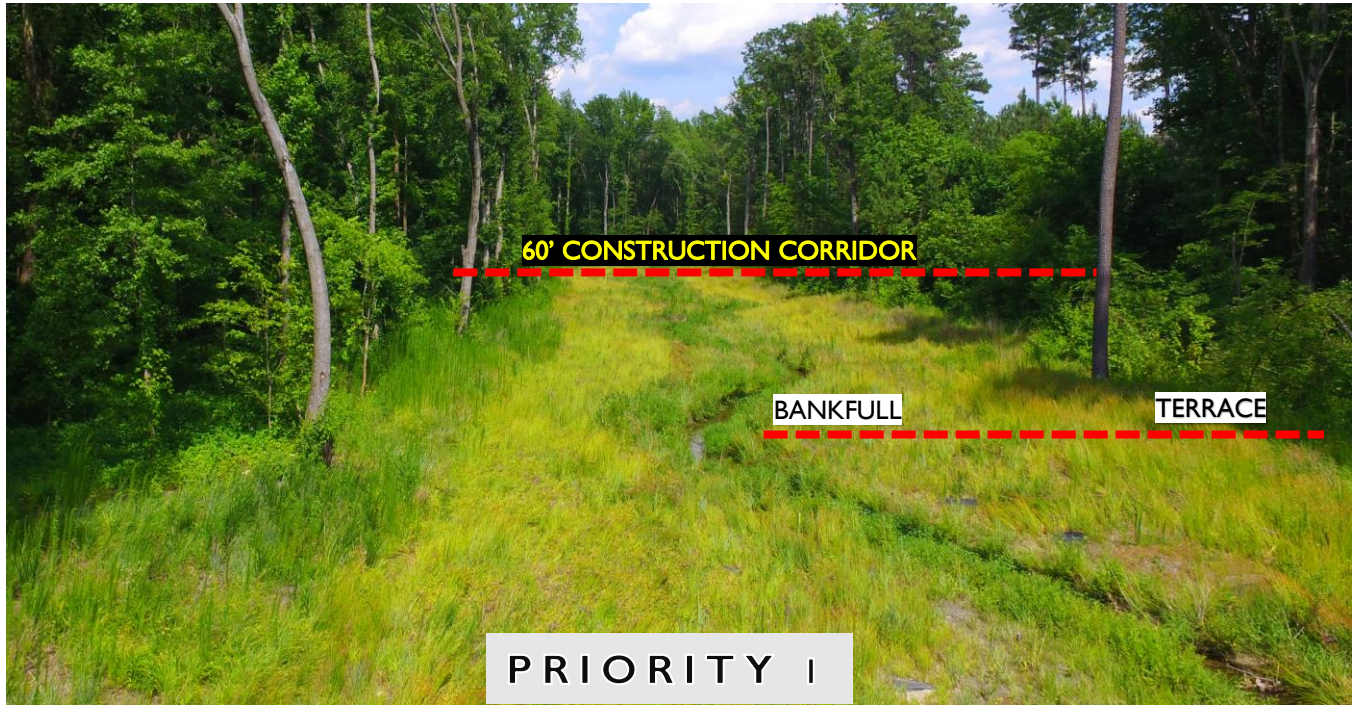
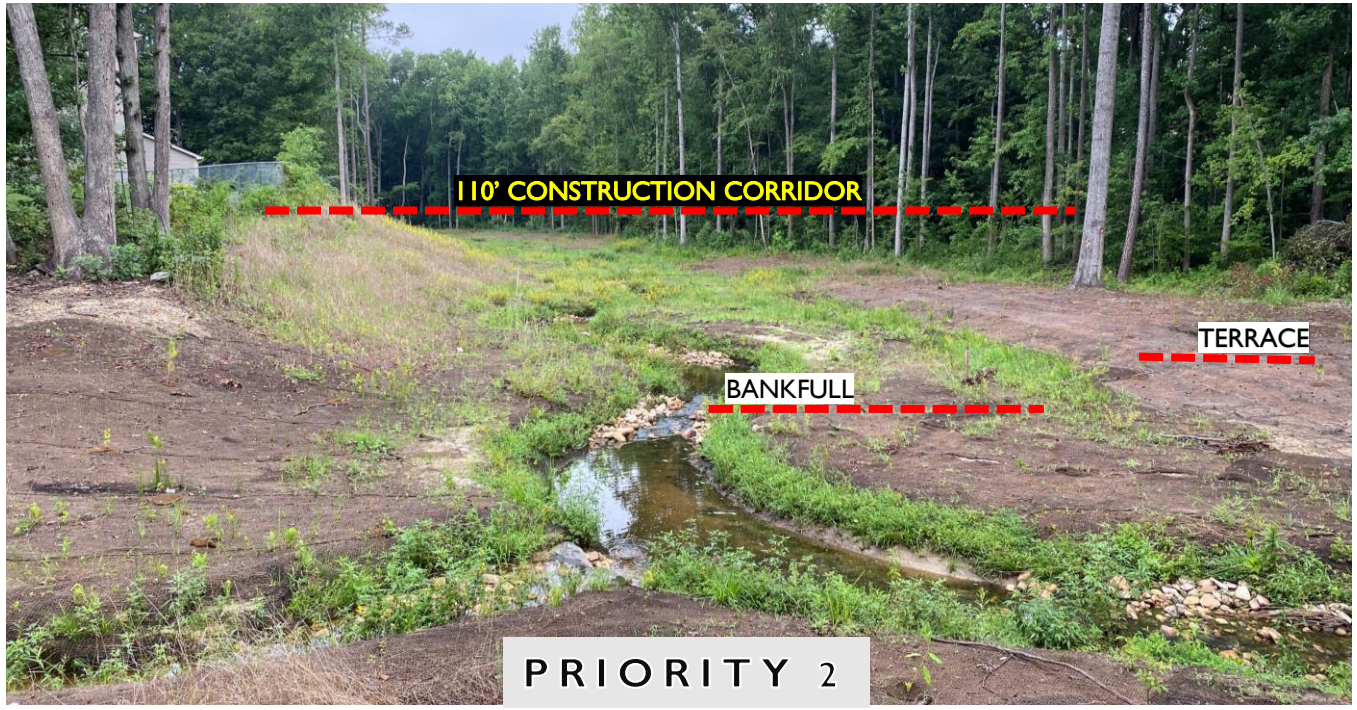
NO-RISE ORDINANCES VS STREAM RESTORATION PRACTICES

PRIORITY I VS PRIORITY 2

- Priority 1 provides increased physical benefit
- No-rise ordinances generally force Priority 2

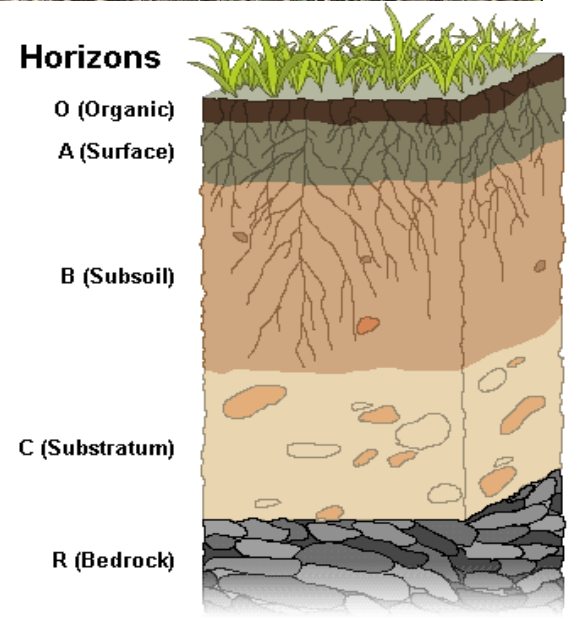




NO-RISE ORDINANCES VS STREAM RESTORATION PRACTICES

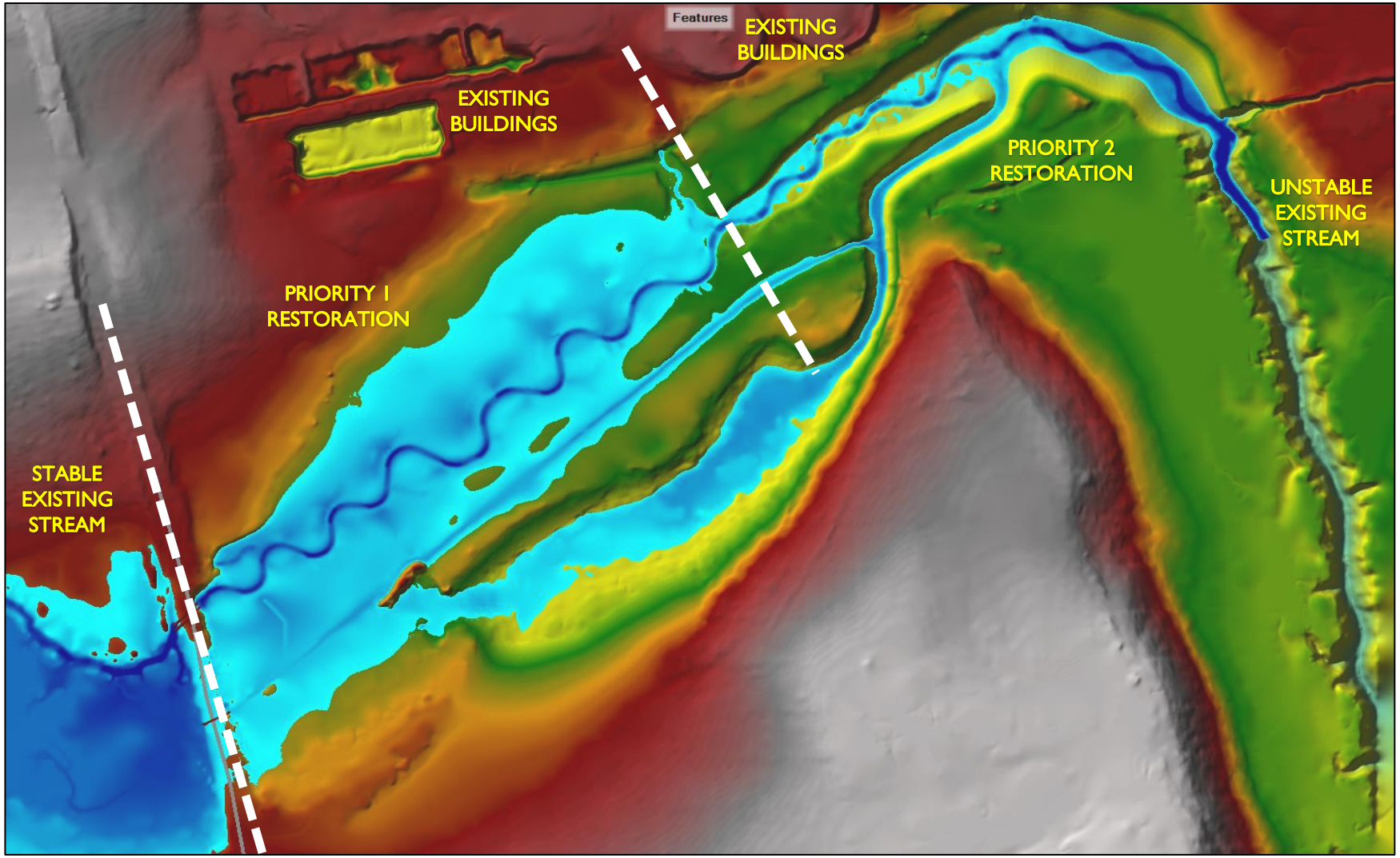
Priority I Highlights

- Priority 1 ecological benefits
  - Raises water table
  - Creates additional wetlands
  - Improves access for animals
  - Increased floodplain area reduces pollutants
  - Promotes planting in O, A and B soil horizons



HOW DO WE IMPROVE?

Continued Collaboration



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OVERCOMING CHALLENGES

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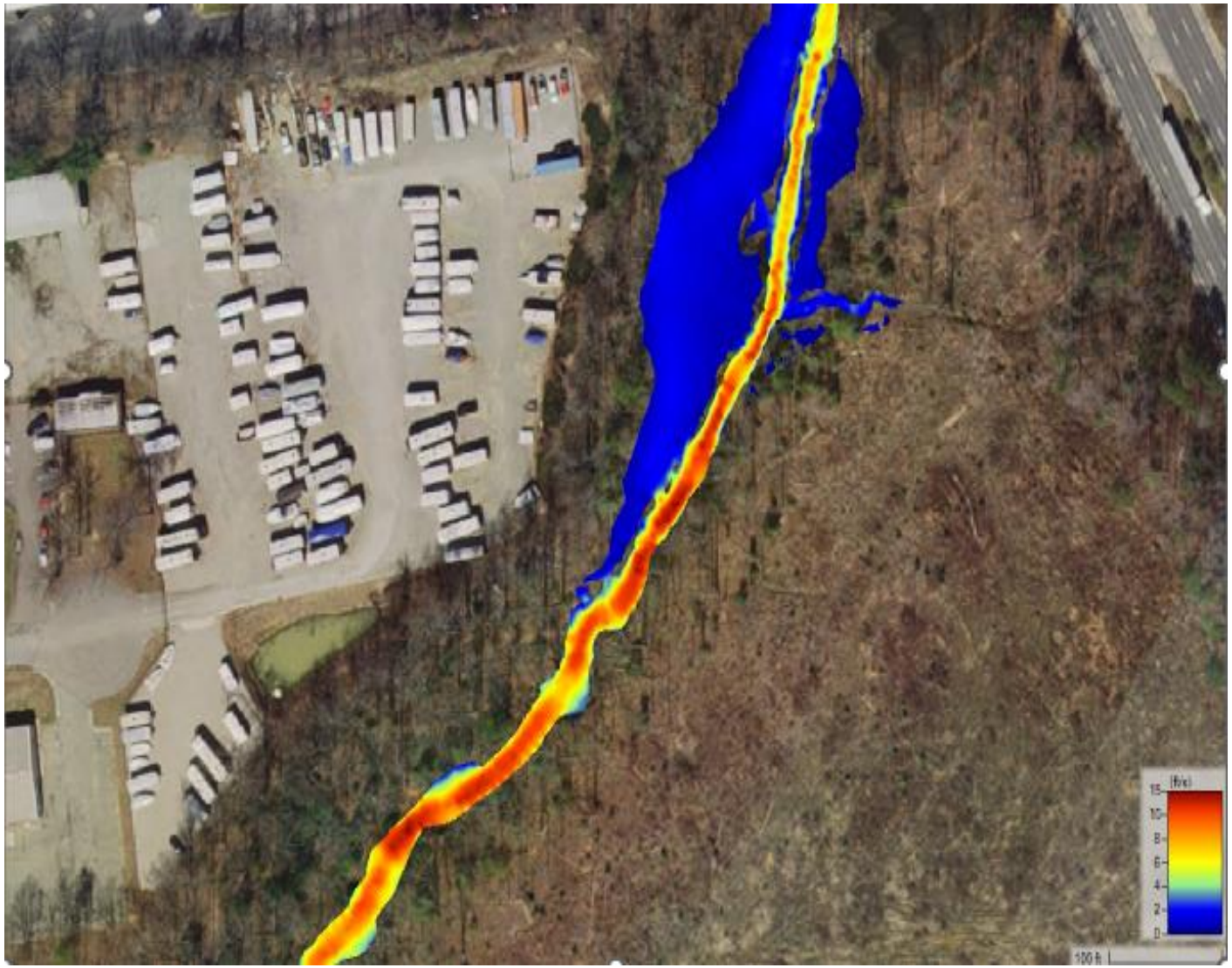
OVERCOMING FLOODPLAIN CHALLENGES

FLOODPLAIN MODELLING



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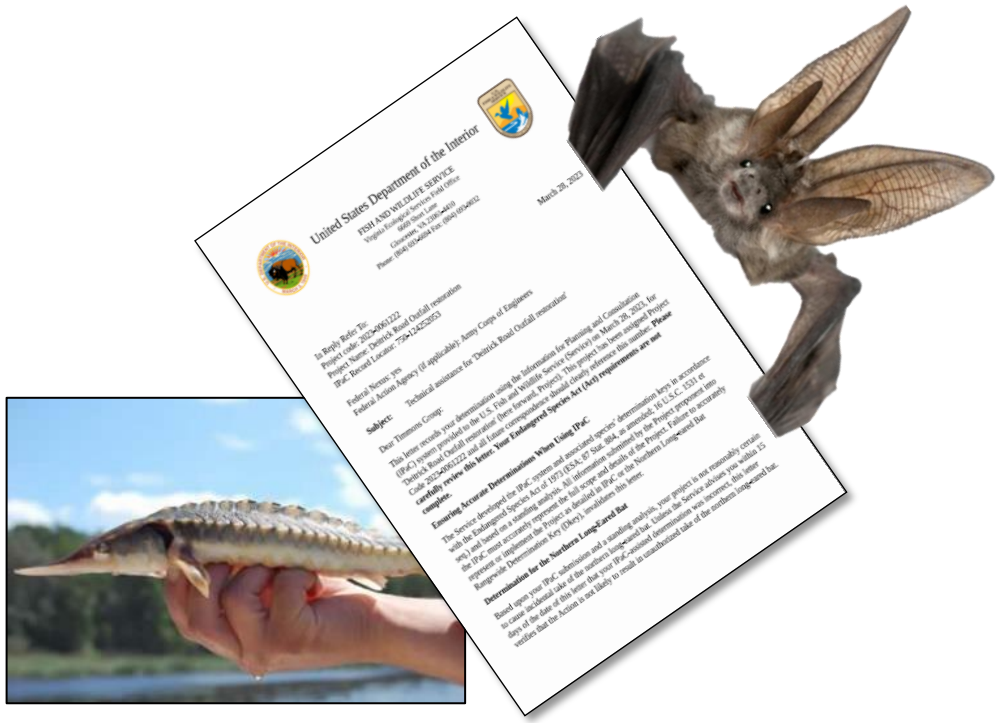
OVERCOMING FLOODPLAIN CHALLENGES

OVERCOMING TIME OF YEAR RESTRICTIONS

CHALLENGE: PERMIT CHANGES

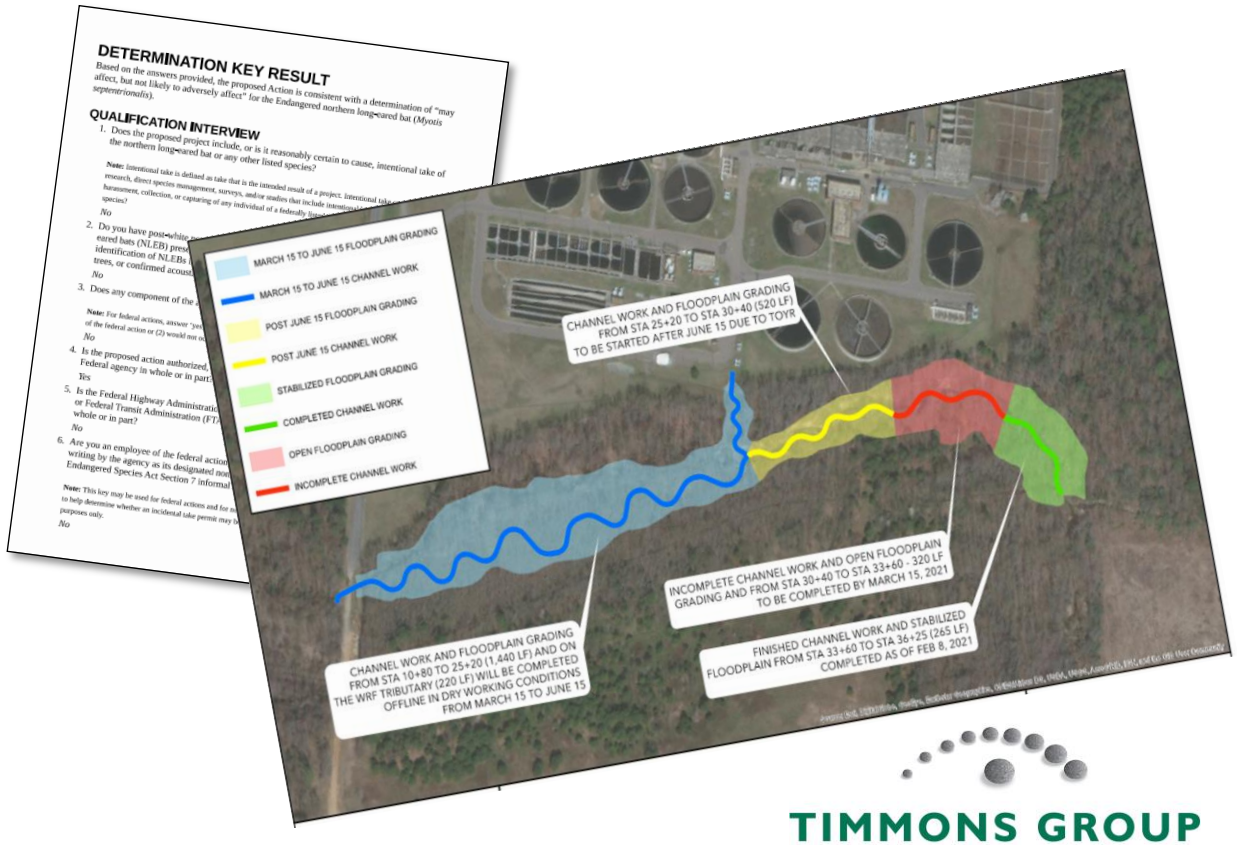
- Nationwide Permits Reissuance - 2022
- Northern Long-Eared Bat Endangered Listing and TOYR - 2023
- Tri-Colored Bat Upcoming Listing -2023/2024
- Other Listings: Threatened and Endangered Species Waters

  (ex: Atlantic sturgeon) = Additional TOYR



SUCCESSES: FLEXIBLE APPROACH

- Modify Construction Approach
- Self-Determination Key with USACE and USFWS Coordination
- Perform T&E Surveys (time of year restrictions)



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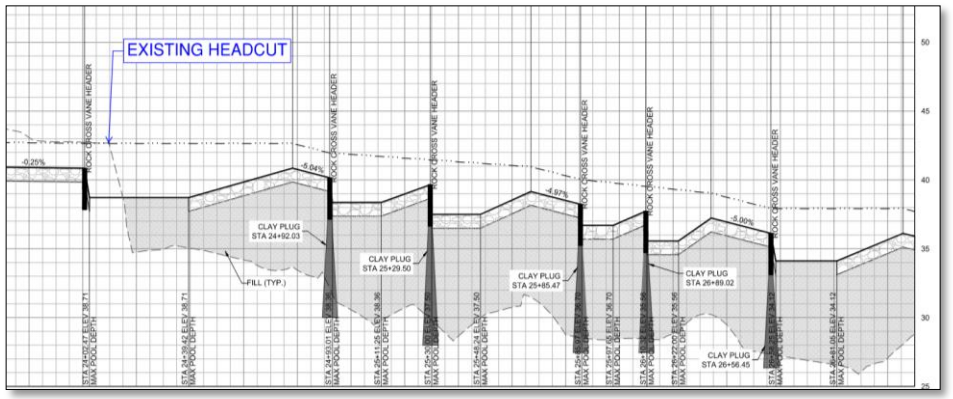
OVERCOMING URBAN CONSTRAINTS

CHALLENGE: URBAN CONSTRAINTS

- Utility Relocations
- Storm Drain and BMP Tie-Ins
- Tributary Downcutting, Steep Channels, & Headcuts
- Onsite Storage of Materials

SUCCESSES: DESIGN & COORDINATION

- Early and Frequent Coordination and Input
- Multiple Priority Approaches within the Restored Sections
- Re-Use of Materials On-Site
- On-Site Coordination with Contractors



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COMMUNITY ACCPETANCE

CHALLENGE: COMMUNITY ACCEPTANCE

- Visual Buffer & Greenspace Impacts
- Access
- Facility Impacts

SUCCESSES: OUTREACH

- Early and Frequent Community Outreach
- Visualizations and Explanations
- Incorporating Community Amenities

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INTEGRATED SOLUTIONS

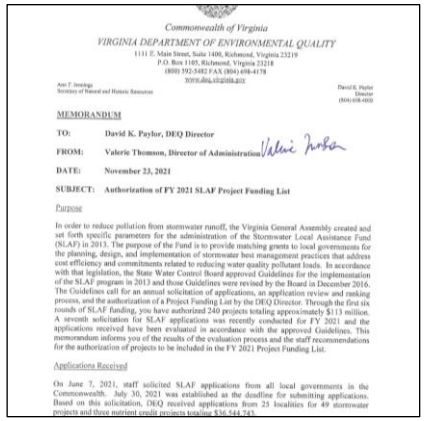
CONSIDERATION OF WHOLISTIC NEEDS

STORMWATER MANAGEMENT & DESIGN

TMDL & MS4 SUPPORT

DAM SAFETY

FUNDING ASSISTANCE



Commonwealth of Virginia

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Ann F. Jennings
Secretary of Natural and Historic Resources

David K. Paylor
Director
(804) 698-4000

MEMORANDUM

TO: David K. Paylor, DEQ Director

FROM: Valerie Thomson, Director of Administration

DATE: November 23, 2021

SUBJECT: Authorization of FY 2021 SLAF Project Funding List

Purpose

In order to reduce pollution from stormwater runoff, the Virginia General Assembly created and set forth specific parameters for the administration of the Stormwater Local Assistance Fund (SLAF) in 2013. The purpose of the Fund is to provide matching grants to local governments for the planning, design, and implementation of stormwater best management practices that address cost efficiency and commitments related to reducing water quality pollutant loads. In accordance with that legislation, the State Water Control Board approved Guidelines for the implementation of the SLAF program in 2013 and those Guidelines were revised by the Board in December 2016. The Guidelines call for an annual solicitation of applications, an application review and ranking process, and the authorization of a Project Funding List by the DEQ Director. Through the first six rounds of SLAF funding, you have authorized 240 projects totaling approximately $113 million. A seventh solicitation for SLAF applications was recently conducted for FY 2021 and the applications received have been evaluated in accordance with the approved Guidelines. This memorandum informs you of the results of the evaluation process and the staff recommendations for the authorization of projects to be included in the FY 2021 Project Funding List.

Applications Received

On June 7, 2021, staff solicited SLAF applications from all local governments in the Commonwealth. July 30, 2021 was established as the deadline for submitting applications. Based on this solicitation, DEQ received applications from 25 localities for 49 stormwater projects and three nutrient credit projects totaling $36,544,743.

STREAM RESTORATION

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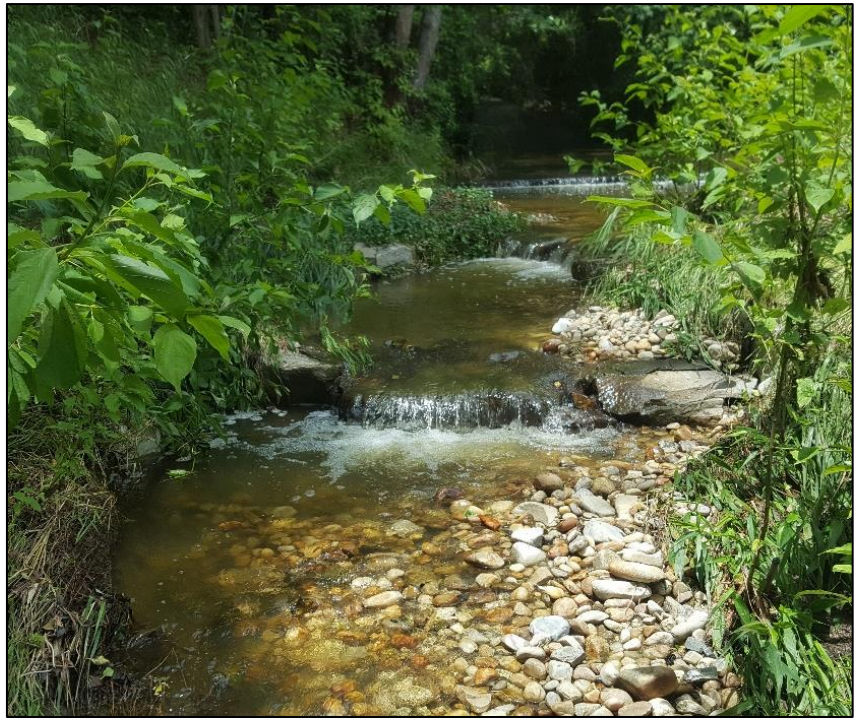
QUESTIONS?



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