



Creating Environmental and Community Resilience through Stream Restoration

Florida Stormwater Association – Winter Conference 2023 | Orlando FL

December 1, 2023

Agenda

CREATING ENVIRONMENTAL AND COMMUNITY RESILIENCE THROUGH STREAM RESTORATION

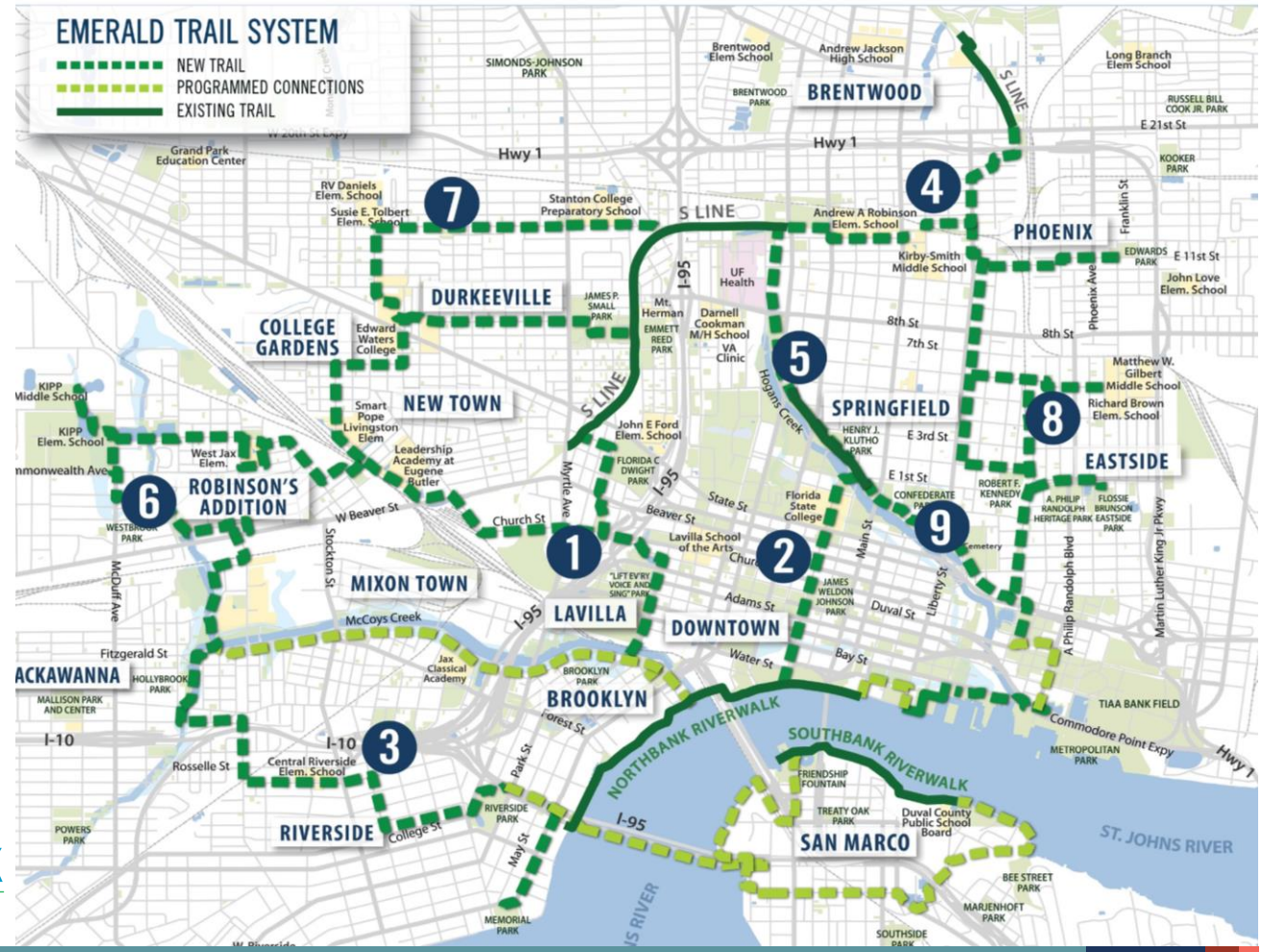
- Jacksonville's Emerald Trail
- Vision & Goals
- Hogans Creek Background
- Stream Restoration Approach
- Hydraulic Modeling
- Trail Design
- Community Engagement
- Next Steps
- Watershed Resilience Plan

JACKSONVILLE'S EMERALD TRAIL



A 30-mile System of Trails & Parks

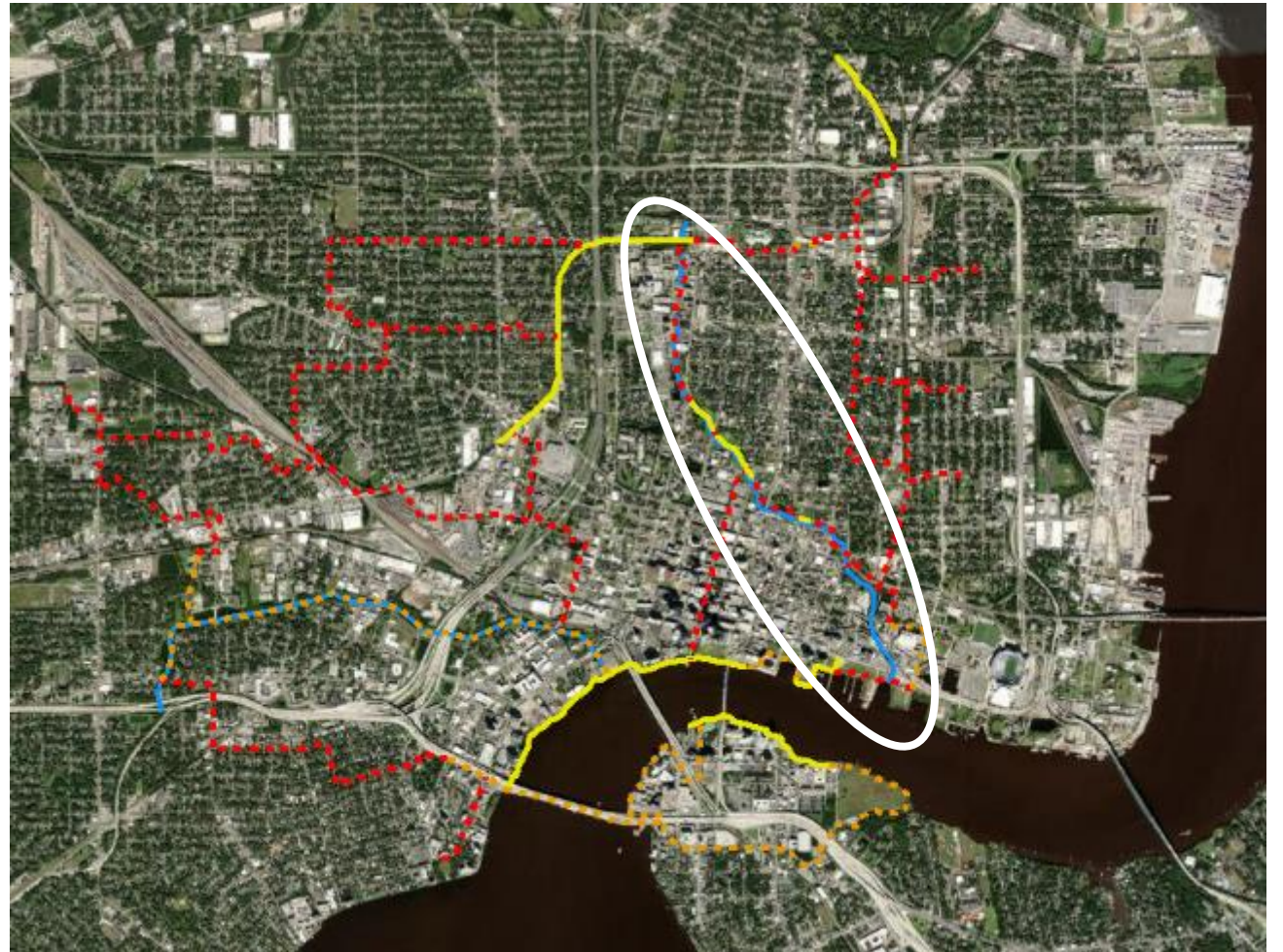
- 14 Neighborhoods
- 16 Schools
- 2 Colleges
- 21 Parks
- 2 Creeks & St. Johns River



PROJECT GOALS



- Ecological Restoration
- Reduced Flooding
- Improved Water Quality
- Habitat for Fish & Wildlife
- Creek Accessibility
- Recreation Opportunities
- Resilience



HOGANS CREEK RESTORATION | PROJECT BACKGROUND



CREEK HISTORY

- Low-lying, Tidal, Meandering Creek
- Dynamic Creek Mouth
- Connected to Wetlands

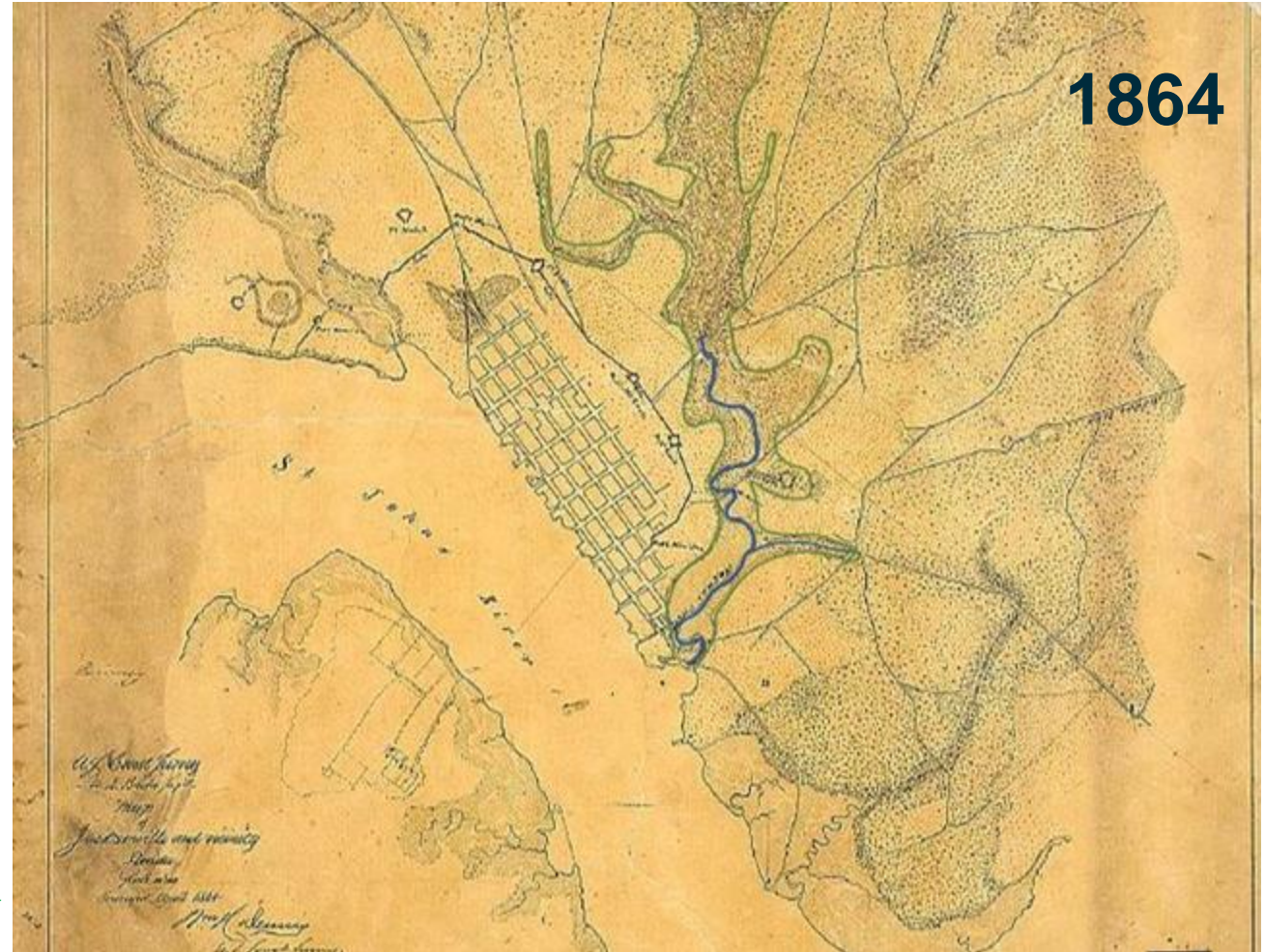


HOGANS CREEK RESTORATION | PROJECT BACKGROUND

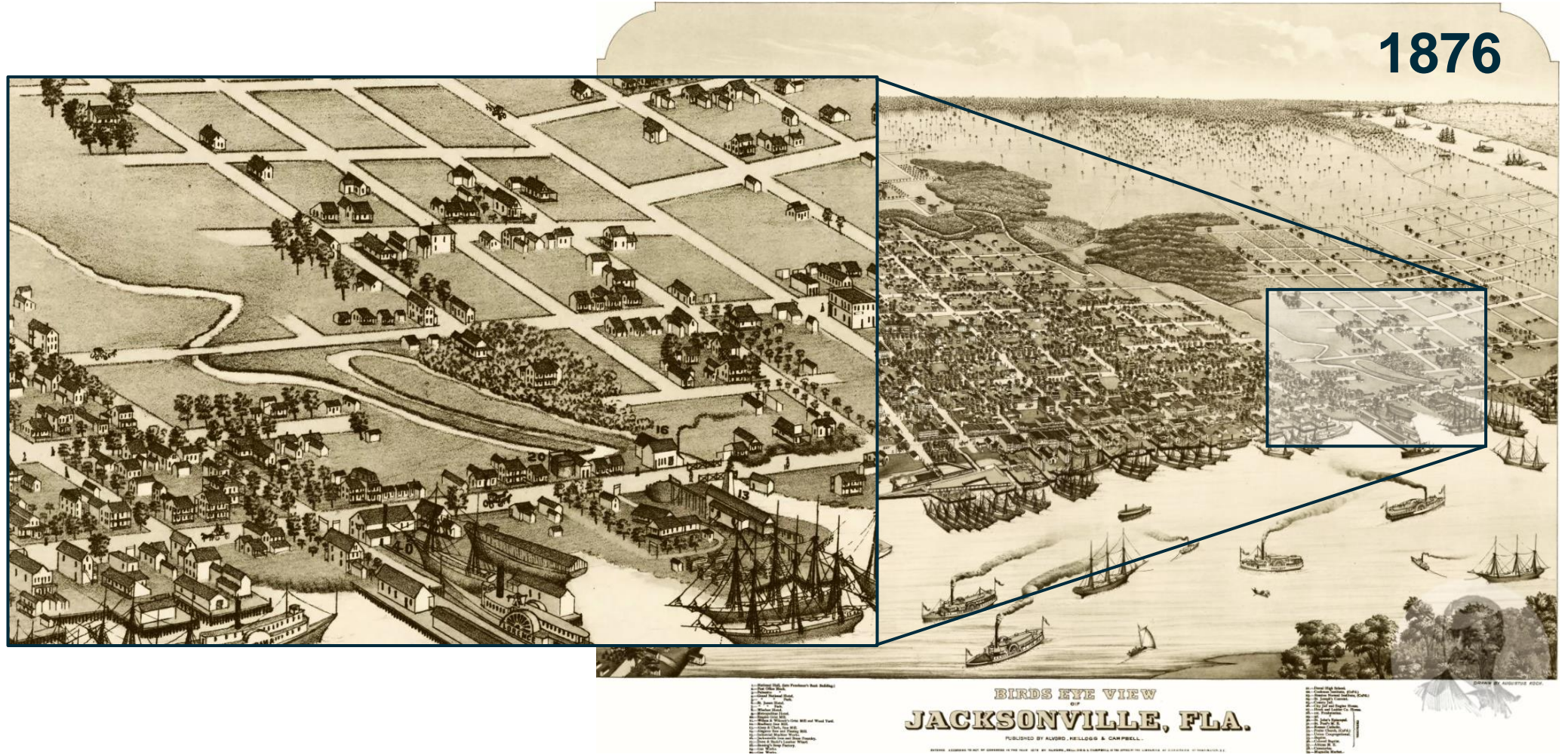


CREEK HISTORY

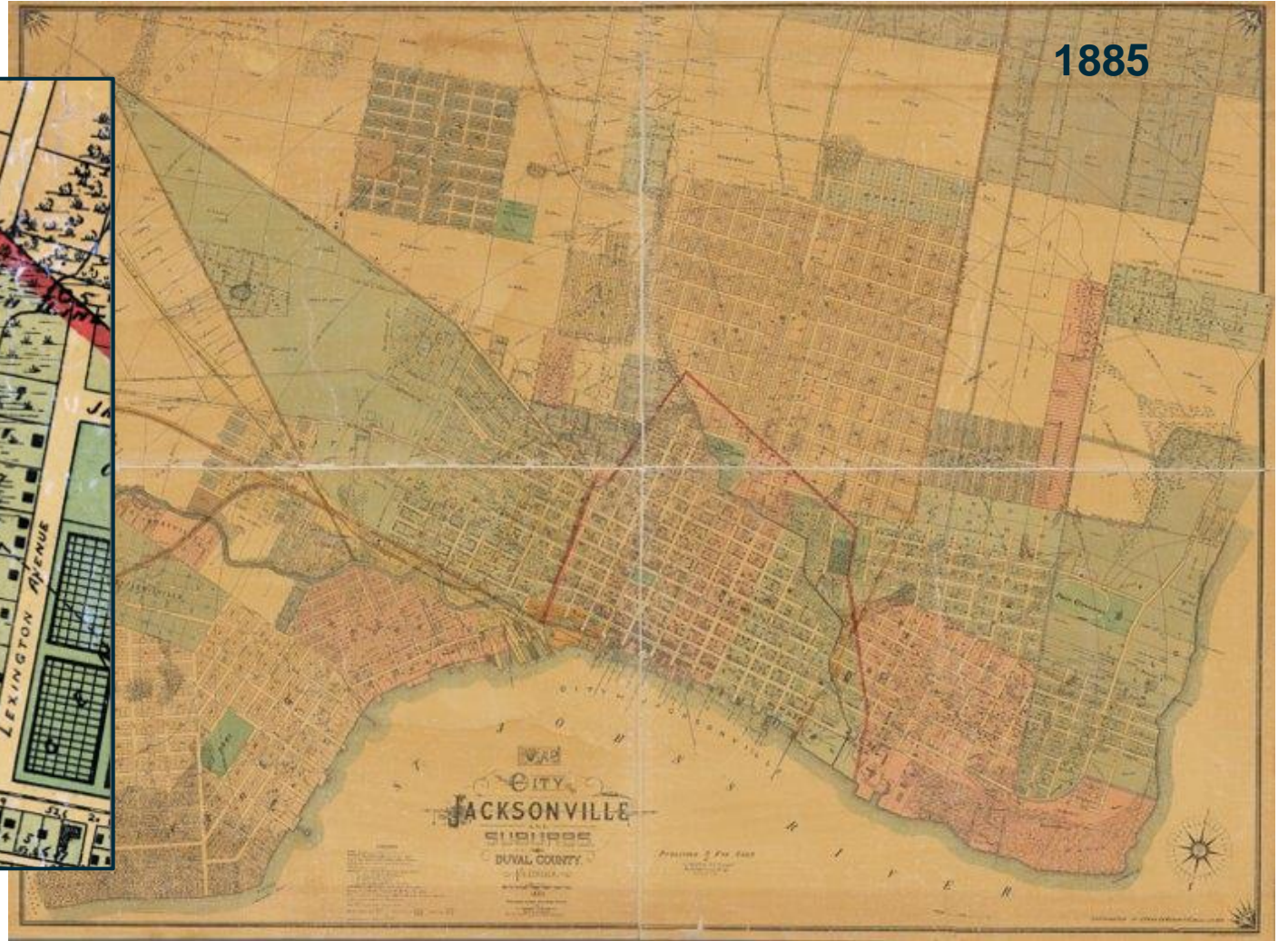
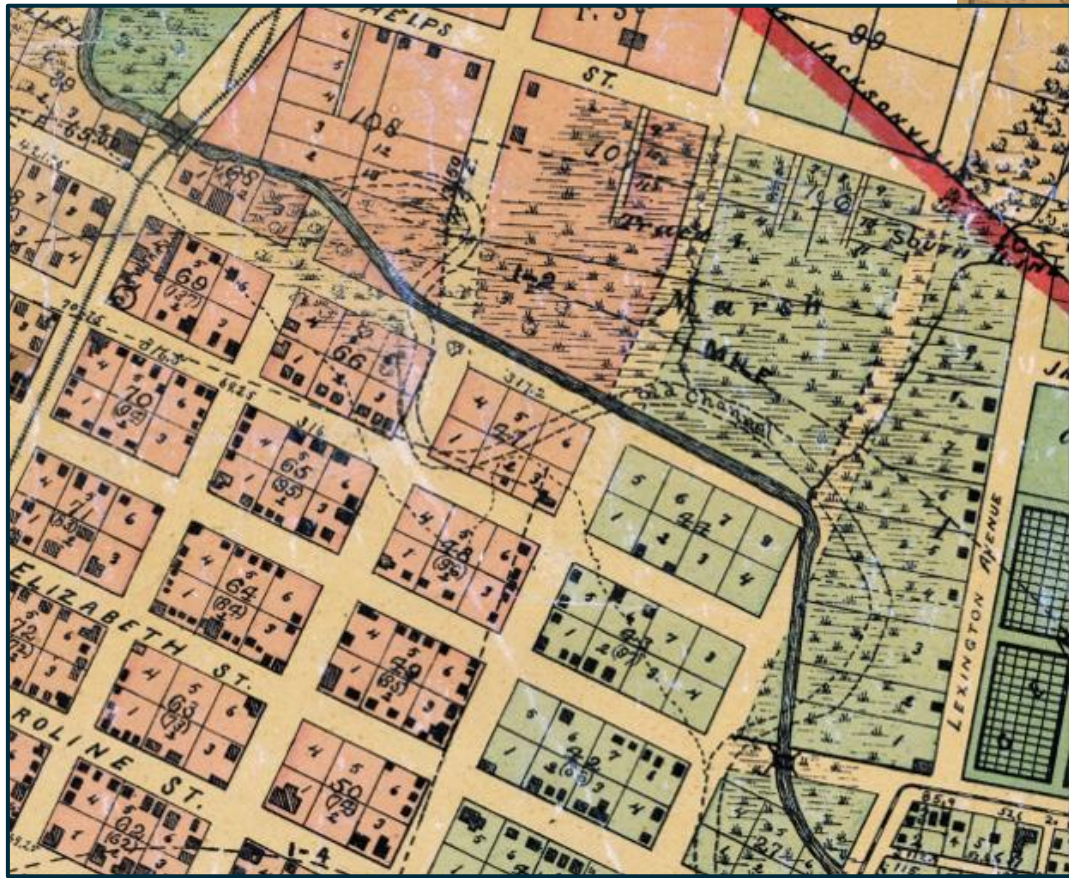
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- Dynamic Creek Mouth
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HOGANS CREEK RESTORATION | PROJECT BACKGROUND



HOGANS CREEK RESTORATION | BACKGROUND



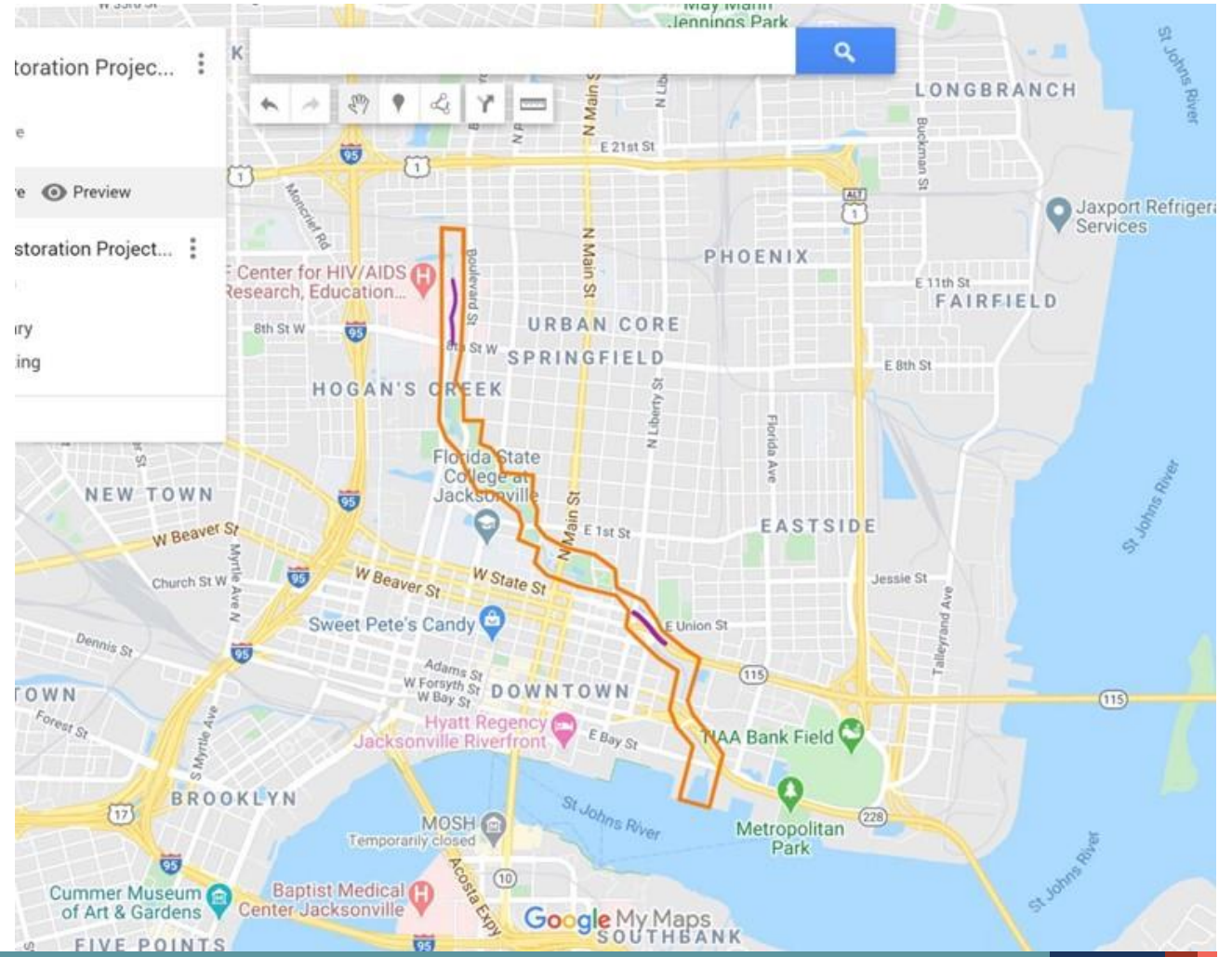
HOGANS CREEK RESTORATION | BACKGROUND



~1953

HOGANS CREEK RESTORATION | CURRENT CREEK CONDITION

- Over 150 Years of Creek Urbanization
- Lateral Constrictions
- Road Crossings
- Utility Crossings
- Soil Contamination
- Flooding
 - Rainfall-Runoff
 - Storm Surge
 - Sunny-Day Flooding



HOGANS CREEK RESTORATION | CURRENT CREEK CONDITION



HOGANS CREEK RESTORATION | CURRENT CREEK CONDITION



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HOGANS CREEK RESTORATION | CURRENT CREEK CONDITION

Water Works Site



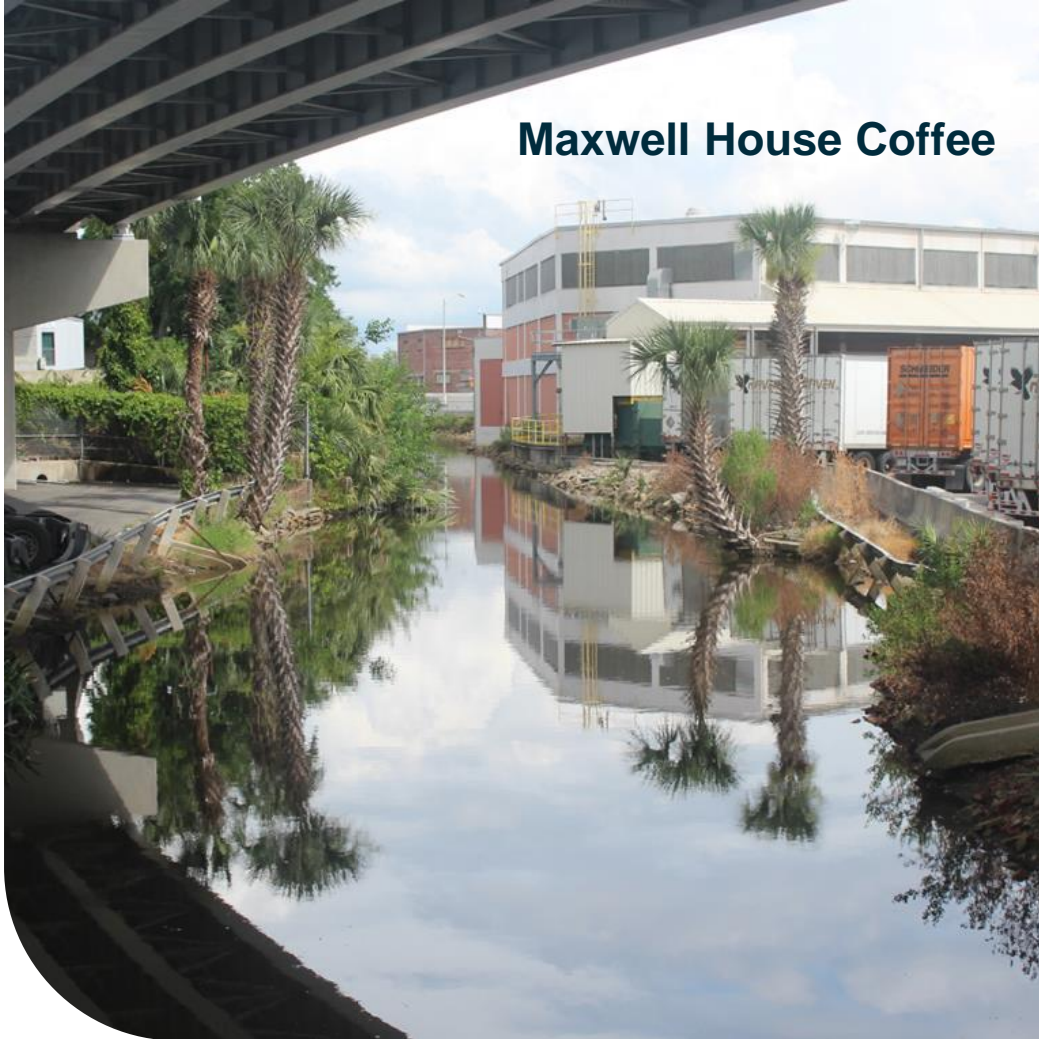
HOGANS CREEK RESTORATION | CURRENT CREEK CONDITION

Arlington Expressway Area Culvert



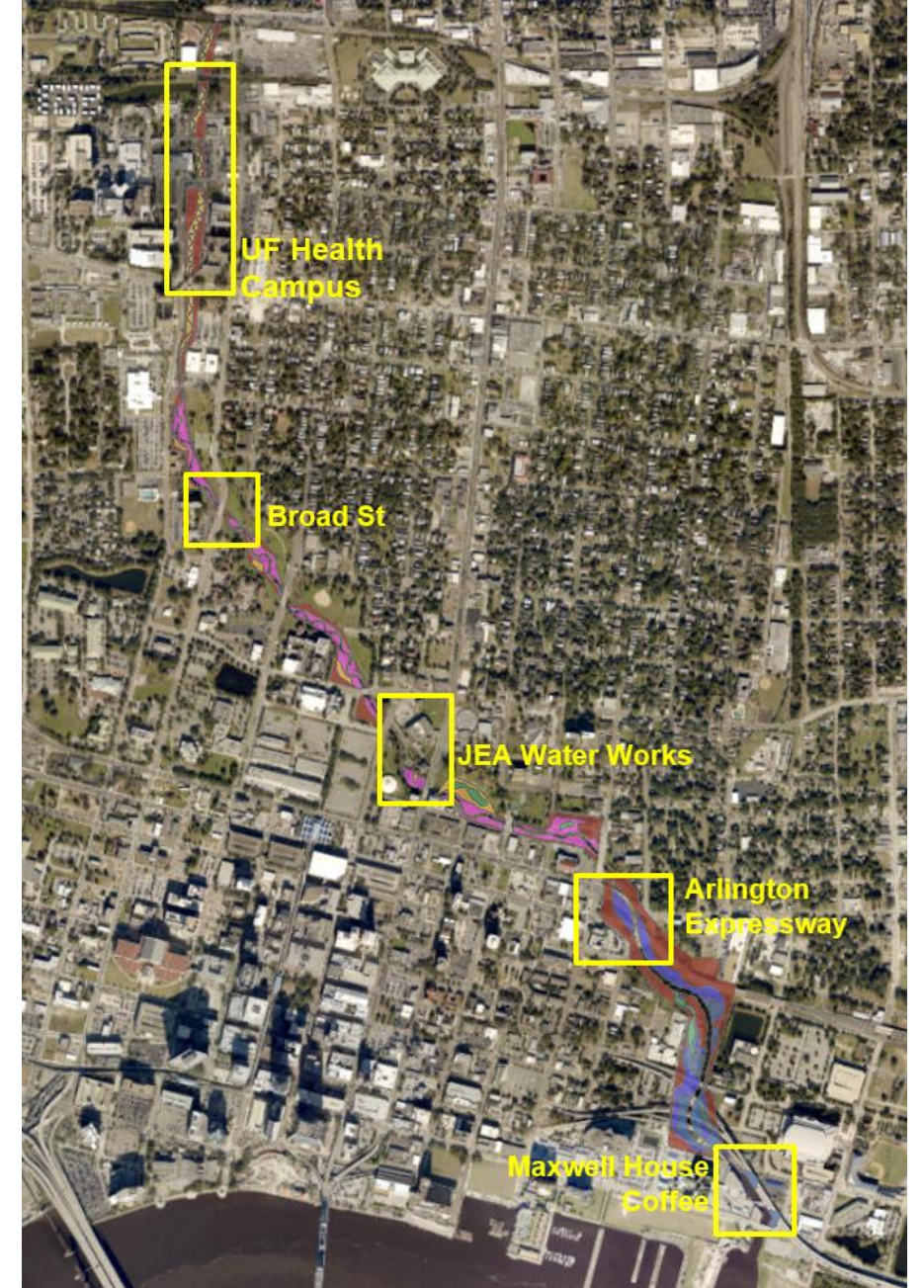
HOGANS CREEK RESTORATION | CURRENT CREEK CONDITION

Site Identified for Flood Storage

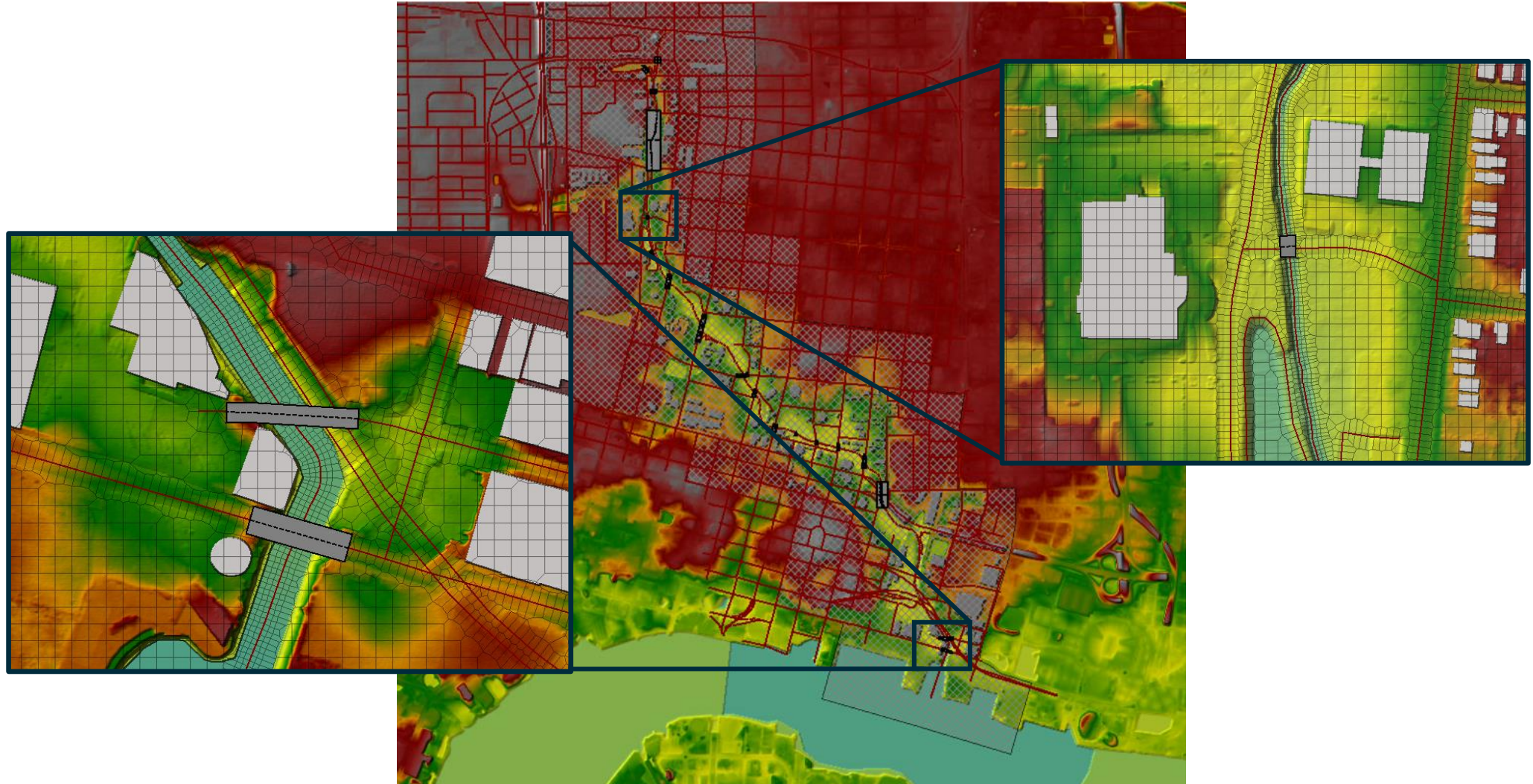


HOGANS CREEK RESTORATION | FLOOD MITIGATION

- City of Jacksonville's MSMP
- Two-Dimensional Flow (HEC-RAS 6.1)
- Channel Realignment & Cross Section Widening
- Focus on Removing Constrictions
 - UF Health Campus Culverts
 - JEA Water Works Channel
 - Arlington Expressway Culvert
- Flood Profiles & Mapping
- Storm Surge & Vulnerability Study Data Assessment

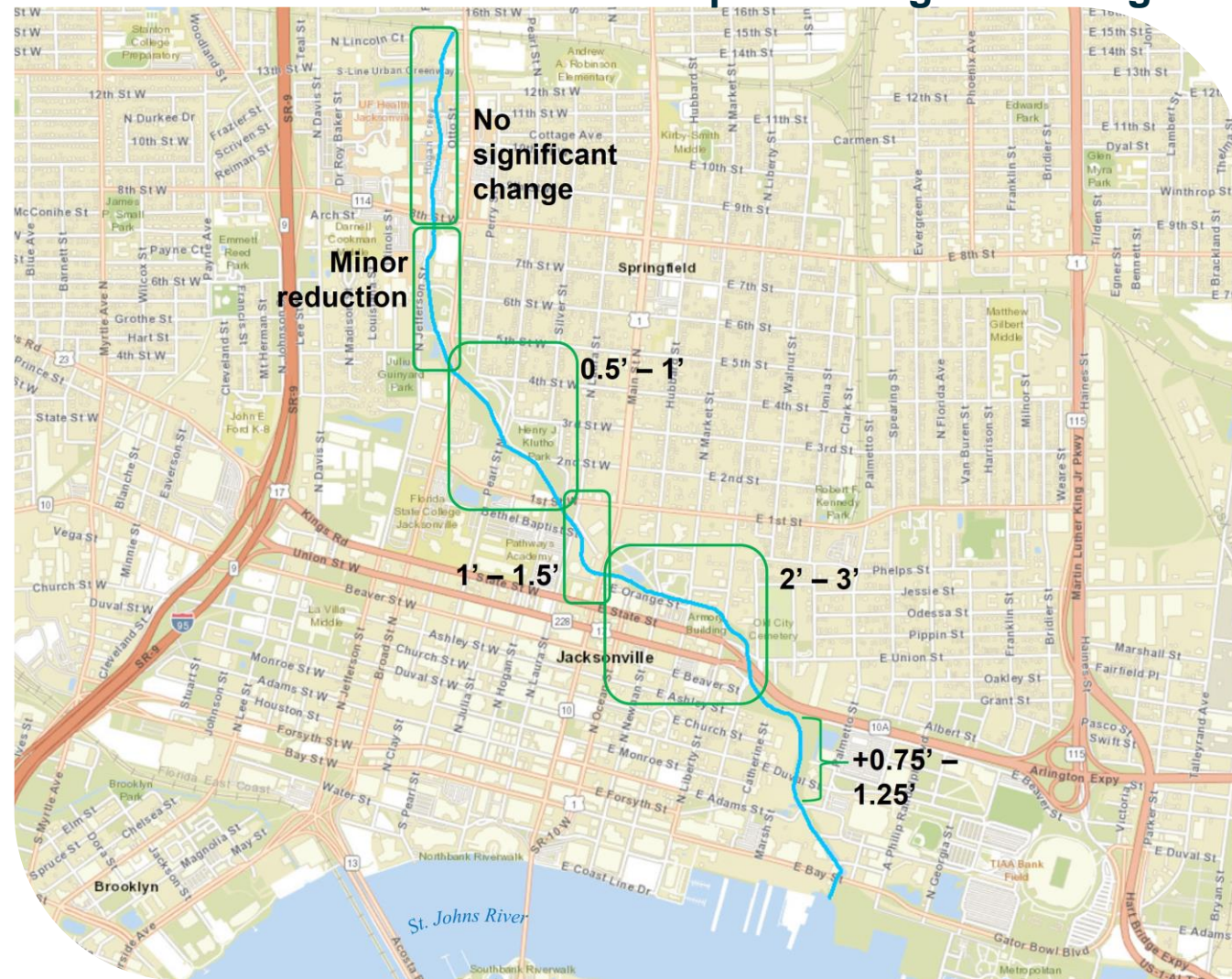


HOGANS CREEK RESTORATION | FLOOD MITIGATION



HOGANS CREEK RESTORATION | FLOOD MITIGATION

Conceptual Design Modeling Results



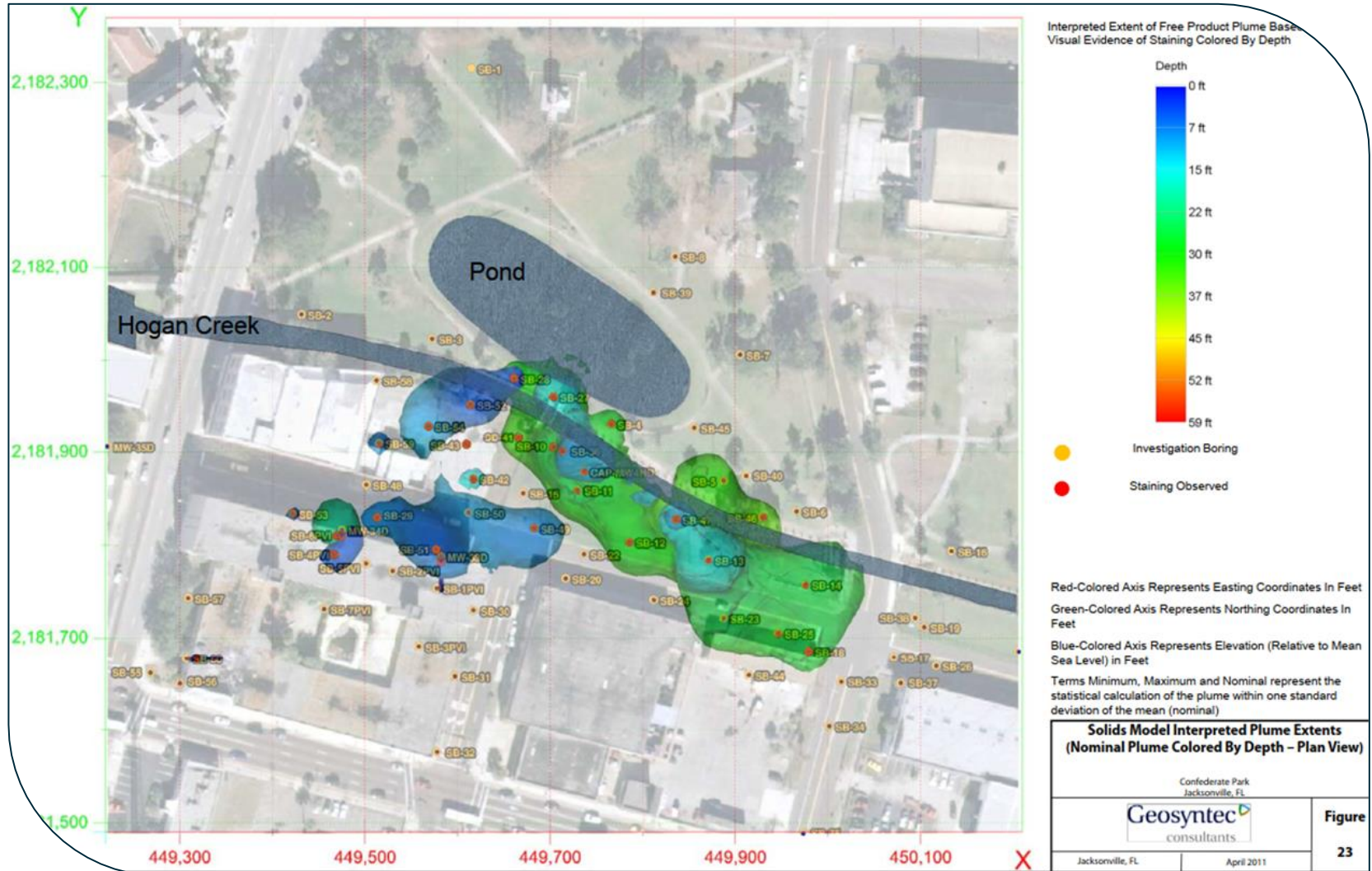
HOGANS CREEK RESTORATION | STREAM RESTORATION APPROACH

OTHER CONSTRUCTIONS

- ~20 Road Crossings
- Utility Crossings
- Soil Contamination
- Private Parcel Acquisition



HOGANS CREEK RESTORATION | STREAM RESTORATION APPROACH



ALPHA ENVIROTECH
CONSULTING, INC.

HOGANS CREEK RESTORATION | STREAM RESTORATION APPROACH

Stabilization-in-Place



Channel Enhancements



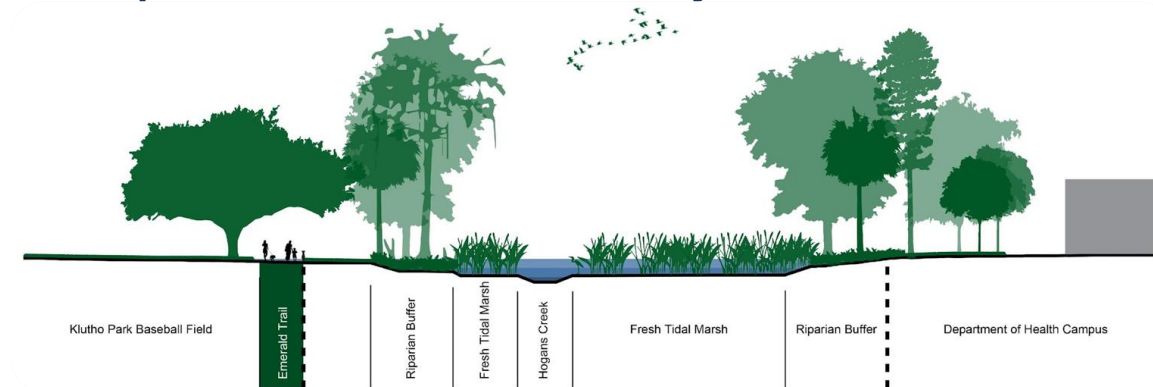
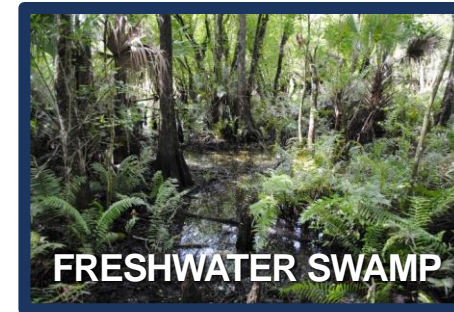
Channel Restoration



HOGANS CREEK RESTORATION | STREAM RESTORATION APPROACH



- Coastal Creek System
- From Narrow Valleys with Wide Floodplains
- Restore Meandering Pattern
- Create Habitat & Attract Wildlife
- Incorporate Overlooks
- Improve Water Quality



HOGANS CREEK RESTORATION | STREAM RESTORATION APPROACH



LEGEND

- Existing Emerald Trail
- Proposed Emerald Trail Network Segment <https://www.groundworkjacksonville.org/emerald-trail/>
- Proposed Programmable Green Space
- Proposed Sloughs and Creek Centerline
- Freshwater Swamp Community
- Fresh Tidal Marsh Community
- Riparian Buffer Community
- High Tidal Salt Marsh Community
- Low Tidal Salt Marsh Community
- 100 Year FEMA Flood Hazard (includes coastal flooding)
- 100 Year Flood Hazard - Redesigned Hogans Creek



HOGANS CREEK RESTORATION | TRAIL DESIGN

- Trail Design
- Community Connector
- Creek Access
- Park Access
- Recreation & Quality of Life
- Cultural & Historic Preservation



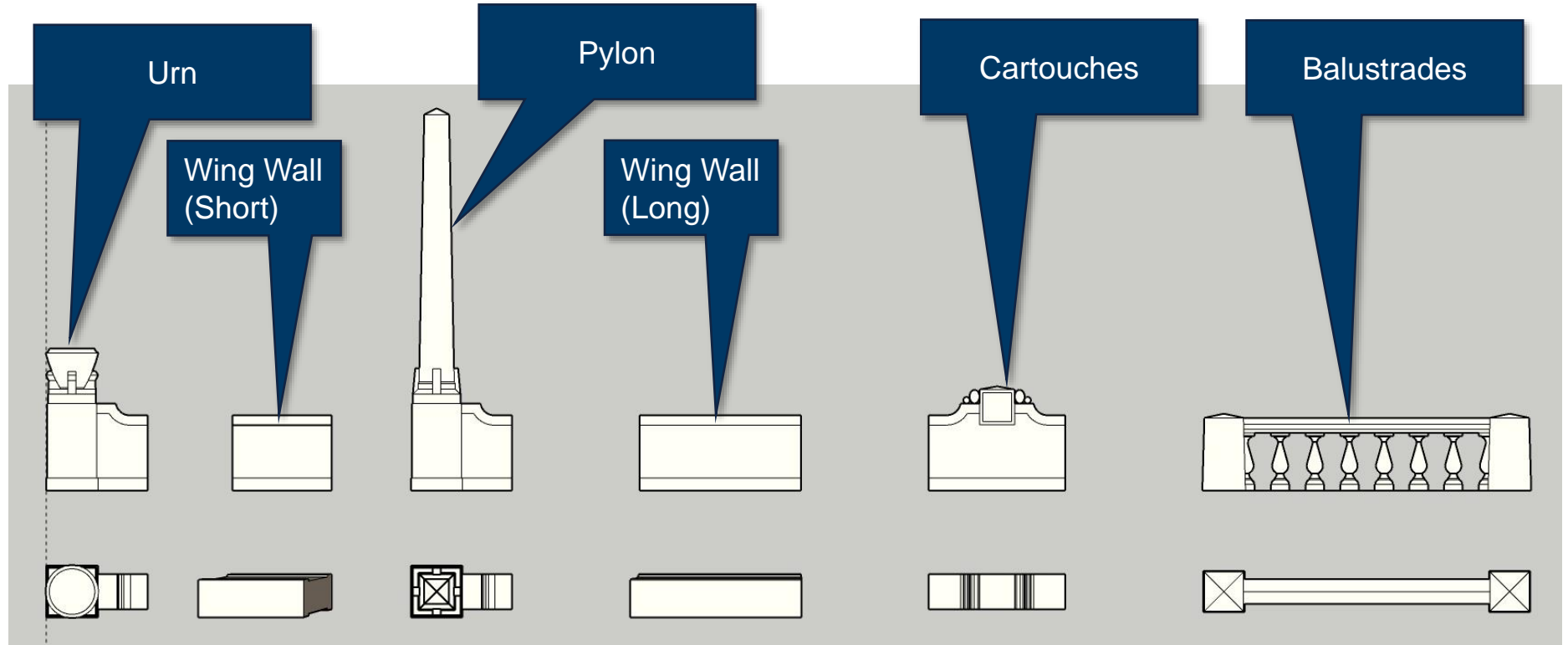
HOGANS CREEK RESTORATION | TRAIL DESIGN

- Historical Research of Neighborhoods
 - Springfield, Eastside, Cathedral Hill, Sugar Hill, Hansontown
- Creek Inventory/Constraints Mapping
 - Historical Architectural Features
- Neighborhood Connectivity & Emerald Trail Connection
- Park Planning
- Riverfront Parks Master Plan Coordination
- Hogans Creek Mouth

Hogans Creek
A one time gem in our necklace park



HOGANS CREEK RESTORATION | TRAIL DESIGN



HOGANS CREEK RESTORATION | OUTREACH

- Outreach
 - Community feedback
 - COJ, JEA, FDOT
- Conceptual Design
 - Flooding
 - Road Modifications
 - Parking
 - Park Space
 - Historic Features
 - Trail Design
 - Land Acquisition

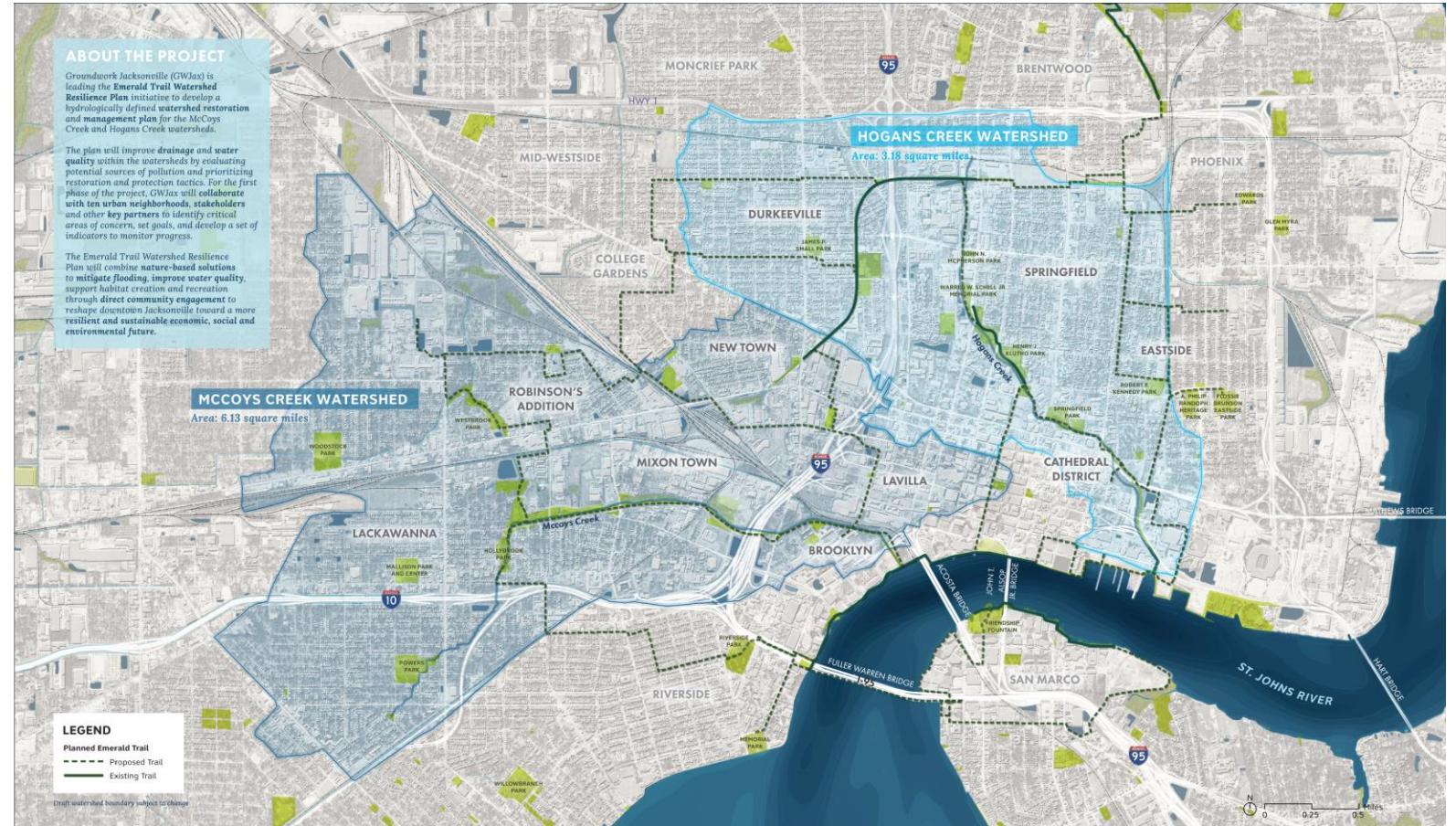
295
Avid kayaking - family of community
would like to see a launch at 1st &
Pearl with parking with supporting
lanches along route towards
Maxwell House.

playgrounds along trail & in
park field, more recreational
stops to motivate families
to walk along the trail.
kayak access where
possible



EMERALD TRAIL WATERSHED RESILIENCE PLAN | PROJECT OVERVIEW

- McCoys and Hogans Creek watersheds
- To improve drainage and water quality
- 10 urban neighborhoods:
 - Cathedral District
 - Brooklyn
 - Durkeeville
 - Eastside
 - Lackawanna
 - LaVilla
 - Mixon Town
 - New Town
 - Robinson's Addition
 - Springfield



SCAPE

TETRA TECH

EMERALD TRAIL WATERSHED RESILIENCE PLAN | DEVELOPING WATERSHED PLAN

- Environmental Protection Agency's six step process



EMERALD TRAIL WATERSHED RESILIENCE PLAN | COMMUNITY ENGAGEMENT

- 8 Neighborhood walks
- 7 Community engagement meetings
- 6 WSG & TAB meetings



■ | HOGANS CREEK RESTORATION | CONCLUSION

- Creek Urbanization Results in Numerous & Significant Constraints
- Multidisciplinary Approach
- Outreach Is Critical to Success
- Stakeholder Coordination Is Critical
- Community, Public, Private
- Maximize Stream Restoration Goals
- Apply Lessons from Other Restoration Projects
- Engage Stakeholders Early & Often
- Community as Partners
- Persist!

|| HOGANS CREEK RESTORATION | CLOSING



THANK YOU

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