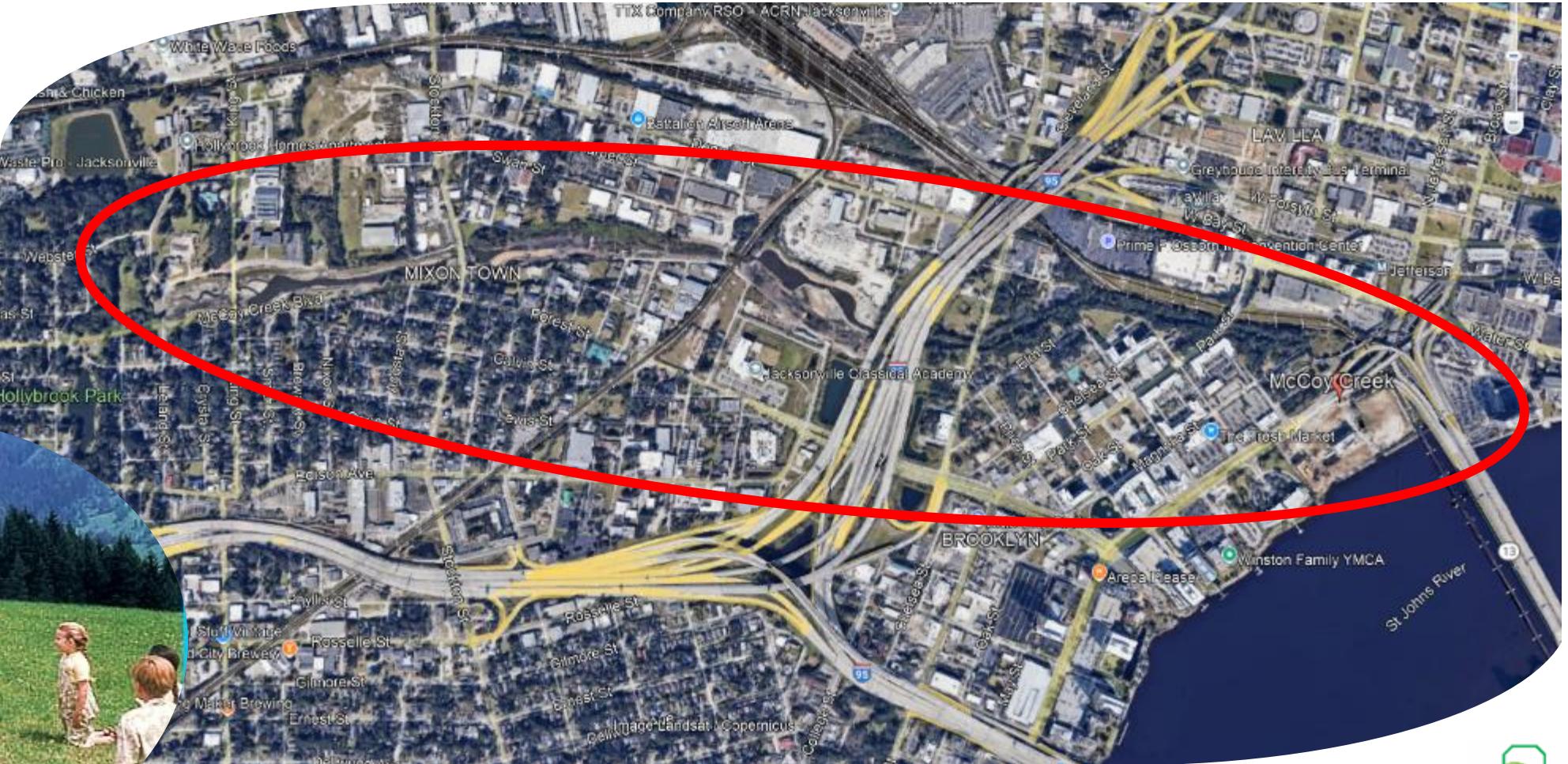




# How do you solve a problem like McCoy's Creek? Urban Stream Restoration

Presentation for: Florida Stormwater Association  
June 2025

# Let's start at the very beginning...



McCoy's  
CREEK

# The Problem

- ❖ Chronic Flooding
- ❖ Environmental Contamination
- ❖ Failing Bulkheads

*“Raindrops on roses  
and whiskers on  
kittens”*



# How do you solve a problem like McCoy's Creek?

↗ Reduce flooding

↗ Build in resiliency

↗ Create a community asset

↗ Engage stakeholders throughout the process



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# Balancing All Our Favorite Things





# McCoys Creek

## Visioning Plan

# Typical public works projects...

"Engineers  
like to solve  
problems..."



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# Delivering the Vision

McCoys Creek Restoration



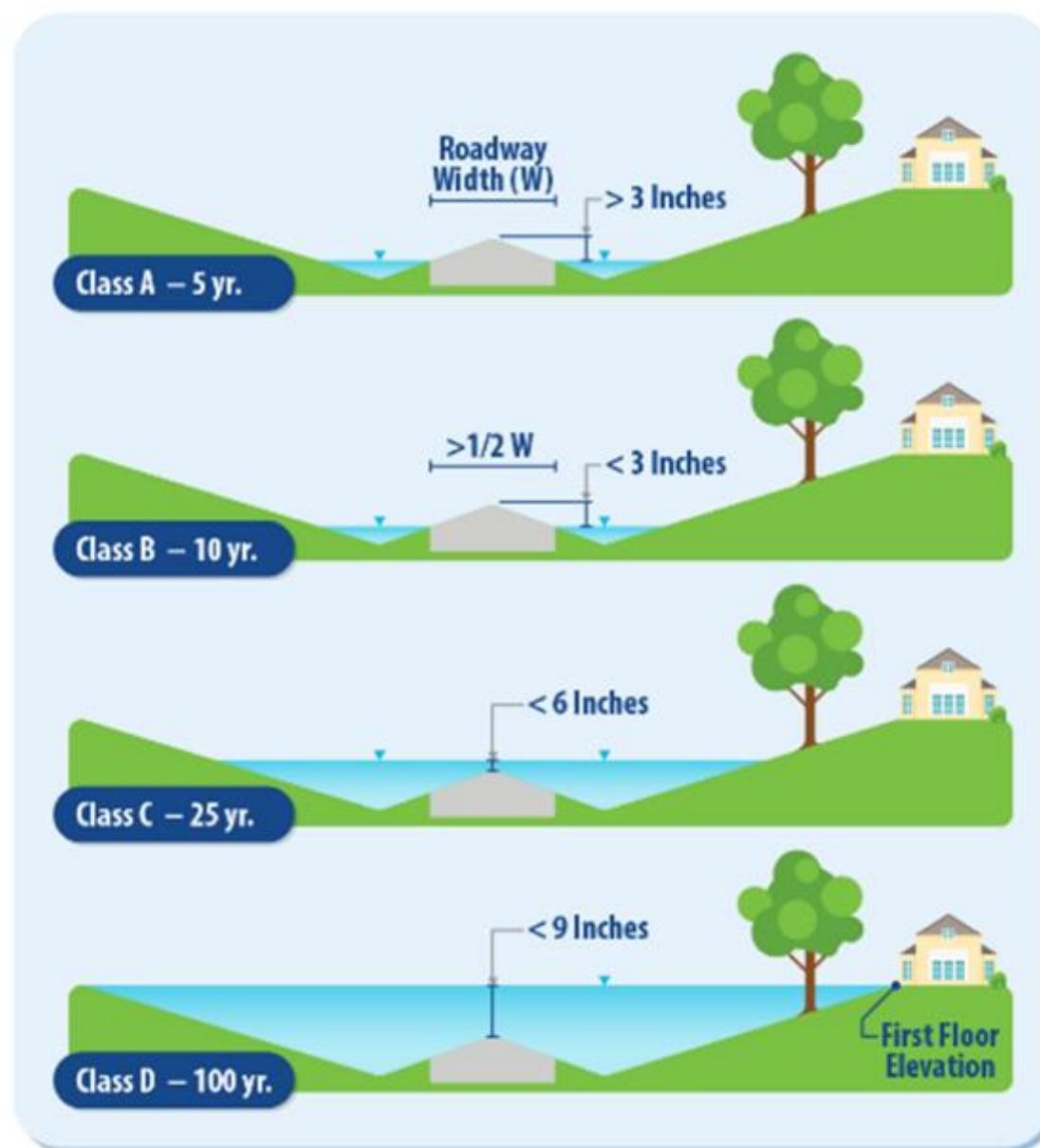
# Reduce Flooding

I have confidence in sunshine, I have  
confidence in rain...



Image Source:  
Bob Self, The Florida Times Union  
McCoys Creek in Jacksonville, FL  
August 5, 2024

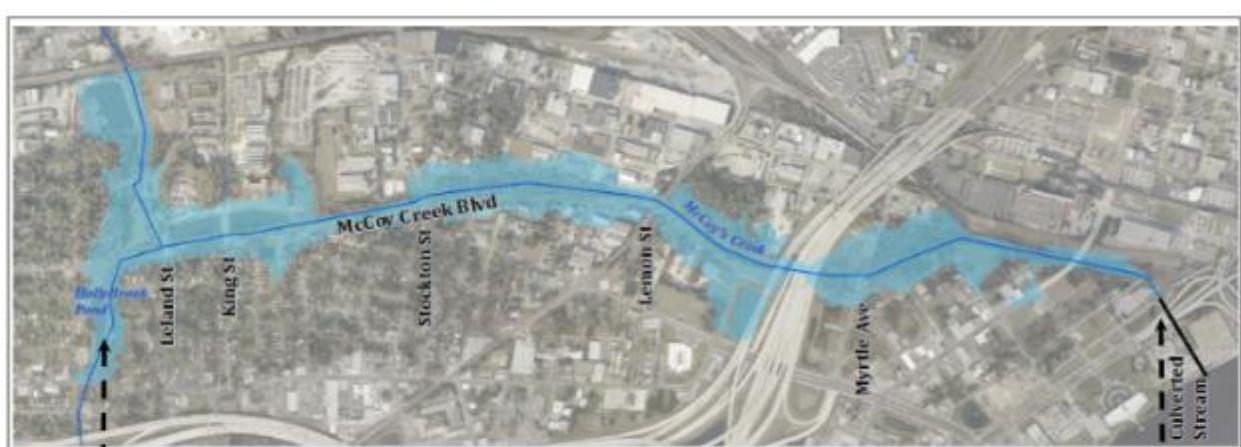
# City Level of Service



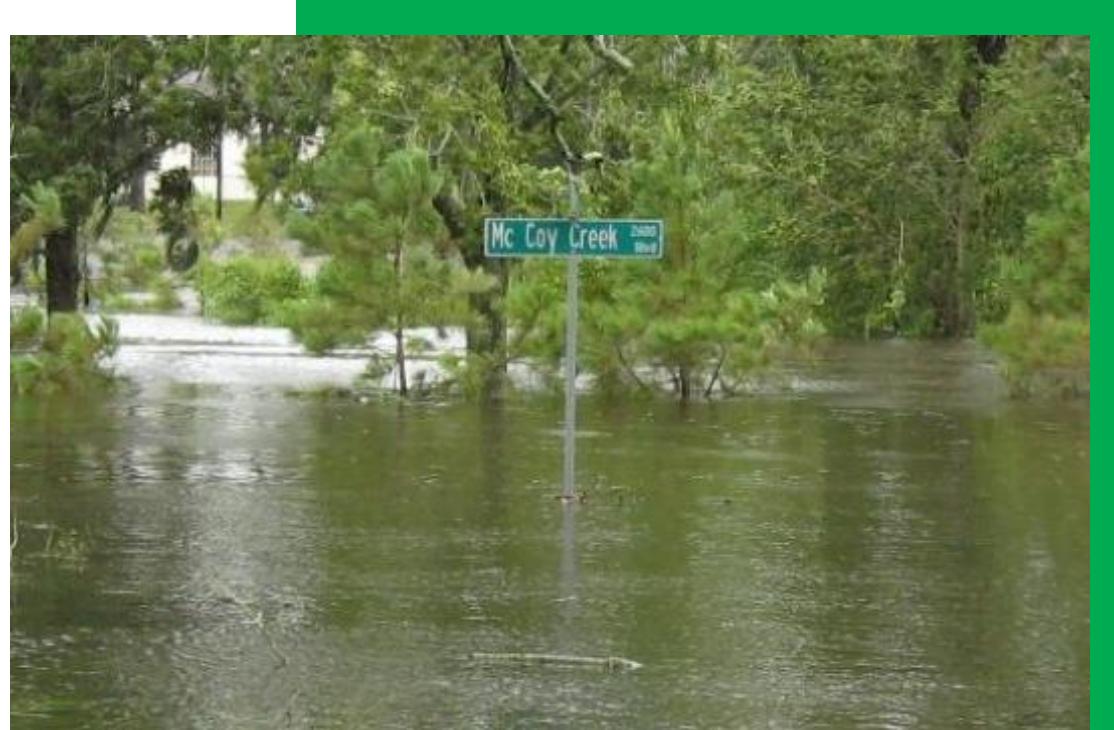
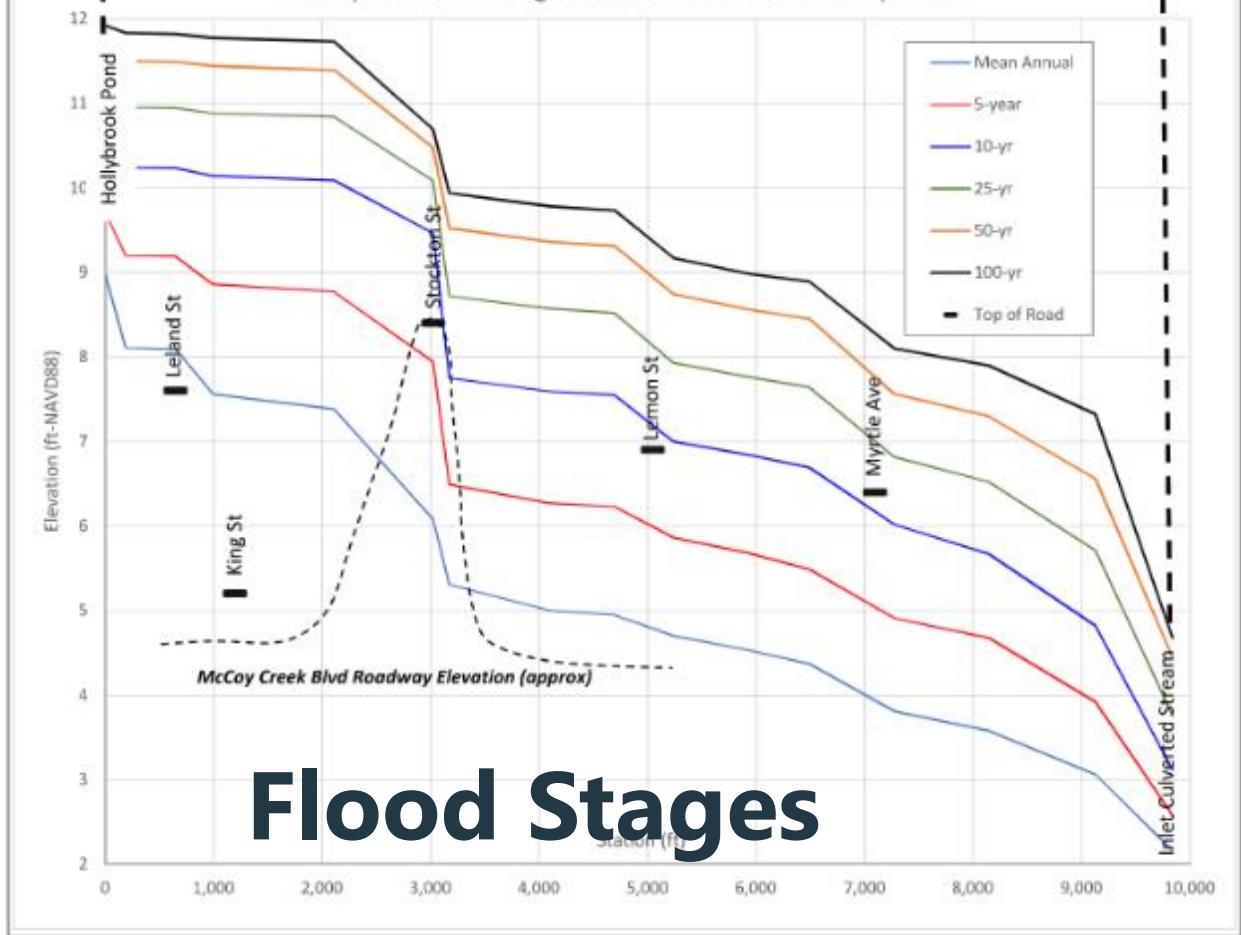
	Design Storm <sup>1</sup>	Standing Water
Local Road <sup>2</sup>	5 year	$< 3$ in
	10 year	$< 3$ in
Arterial <sup>2,3</sup>	25 year	$< 6$ in
	100 year	$< 9$ in
	25 year	0 ft
Structures	100 year	0 ft

1. All storm durations are 24 hours
2. Local and Arterial roads are defined by the City and the Northeast Florida Regional Planning Council (NEFRPC)
3. Flood inundation limited to each side of the road such that  $\frac{1}{2}$  of the roadway width (W) or one travel lane width is not flooded.





McCoy's Creek Existing Condition Flood Profile Comparison



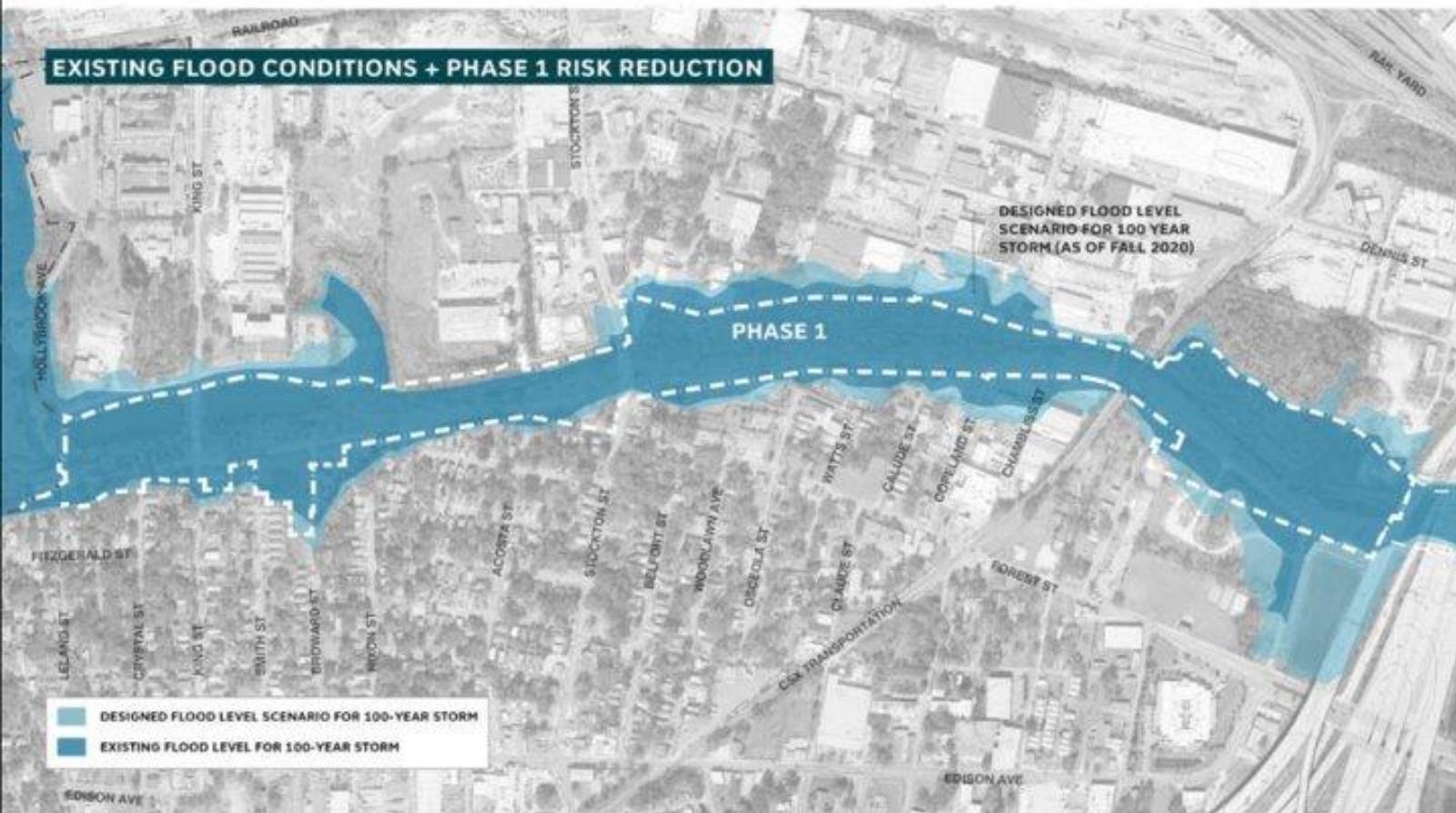
# McCoys Project Components

- ❖ Close McCoys Creek Blvd
- ❖ Expand the floodplain to improve LOS
- ❖ Raise King St and Stockton St bridges
- ❖ Daylight and provide conveyance improvements Myrtle Ave to the Outfall

"The flooding issues in McCoys Creek sub-basin are so pervasive that solutions must occur on a grand scale in order to address them."

-COJ MSMP 2011

## EXISTING FLOOD CONDITIONS + PHASE 1 RISK REDUCTION



### CURRENT CREEK CONDITION

### FUTURE CREEK CONDITION

The diagram illustrates a green roof system. A blue rectangular area represents the roof deck. A green rectangular area represents the growing medium and plants. A blue path, labeled 'WATER INfiltrATION', shows water entering the growing medium. A blue path, labeled 'RUNOFF', shows water leaving the roof. Arrows indicate the flow of water from the roof surface into the growing medium and then out through a drainage system. The entire system is surrounded by a white border, and the background shows a green landscape with trees.

### CURRENT CREEK CONDITION DURING FLOOD

## FUTURE CREEK CONDITION DURING FLOOD

# Flood Reduction Benefits

## 2020 Modeling



- ❖ 2ft flood benefit in most severe reaches
- ❖ Elevate two bridges out of the 100-yr floodplain
- ❖ Improve flood stages for 50 residents
- ❖ Improve LOS for six intersections
- ❖ Ability to implement other drainage projects



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# Build in Resiliency

The hills are alive ...



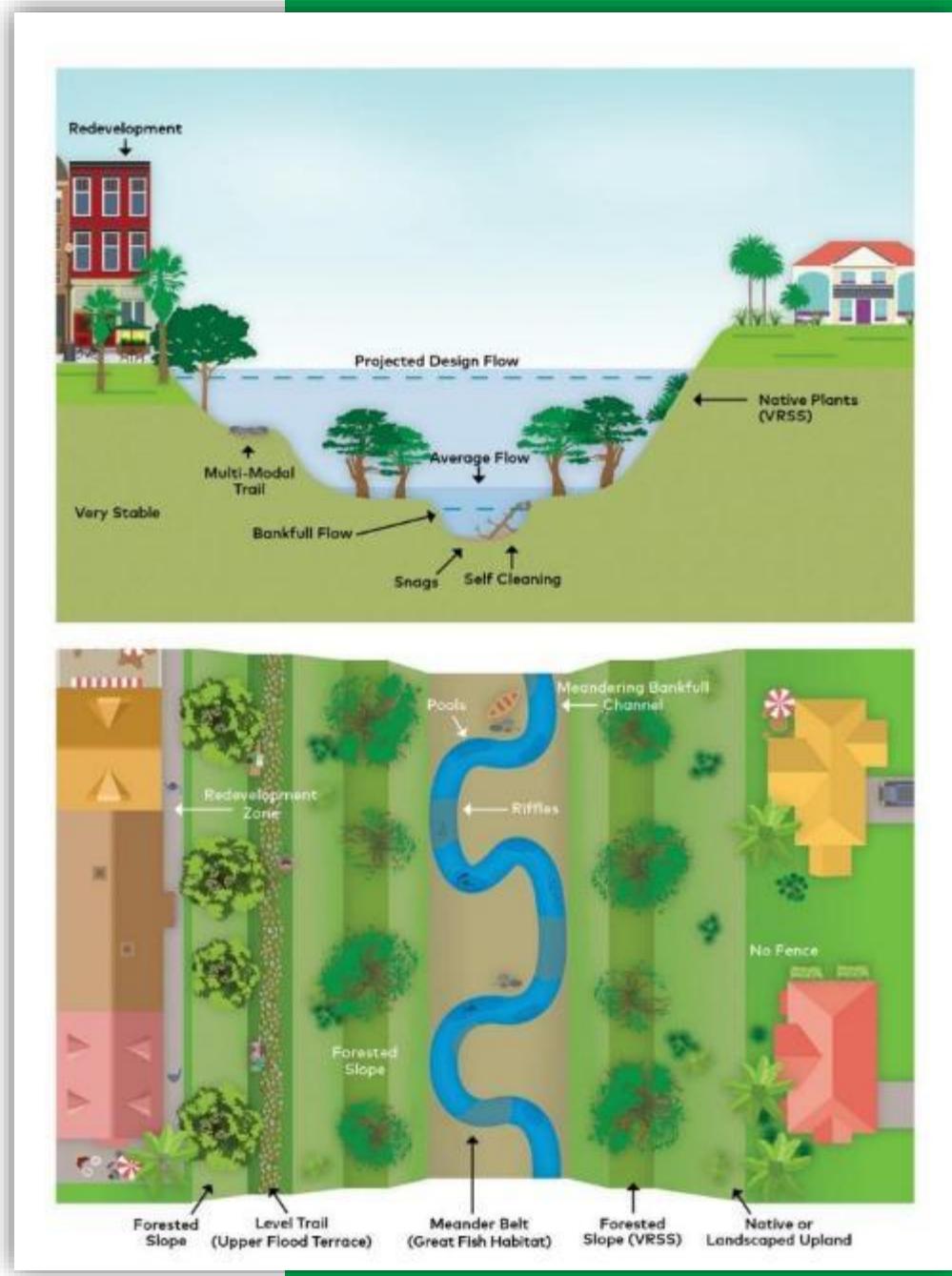
# Natural Channel Design



Channelized Stream (Before)



Natural Channel Design (After)

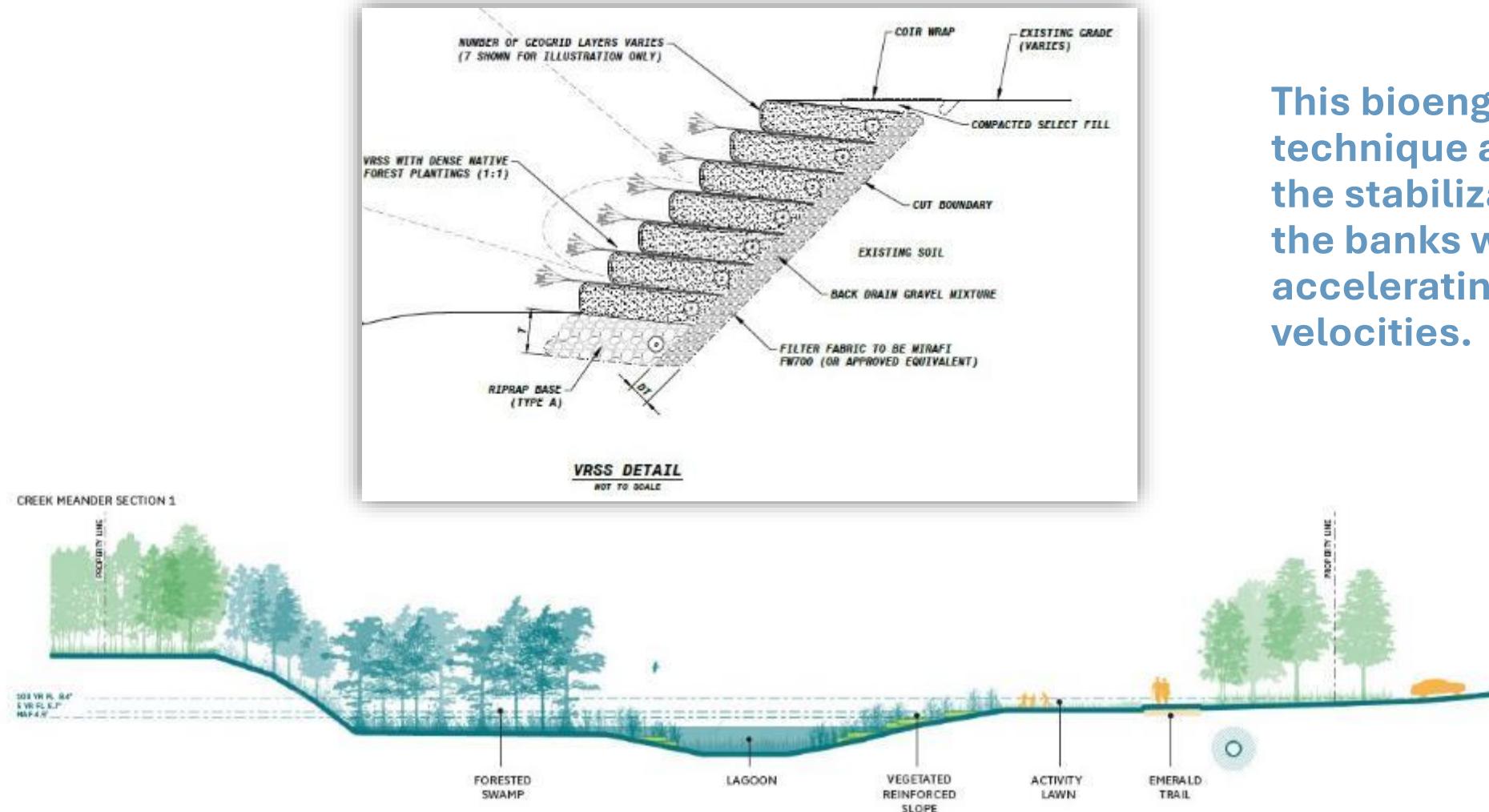


# Restored Floodplain *Under Construction*



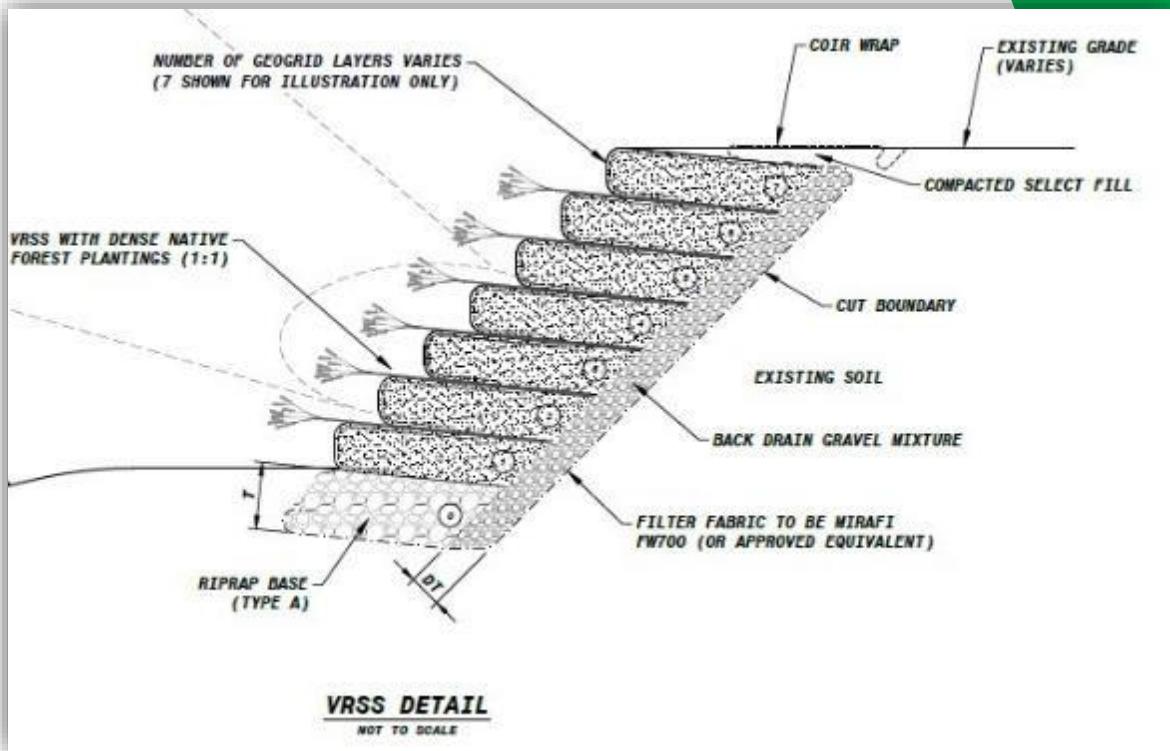
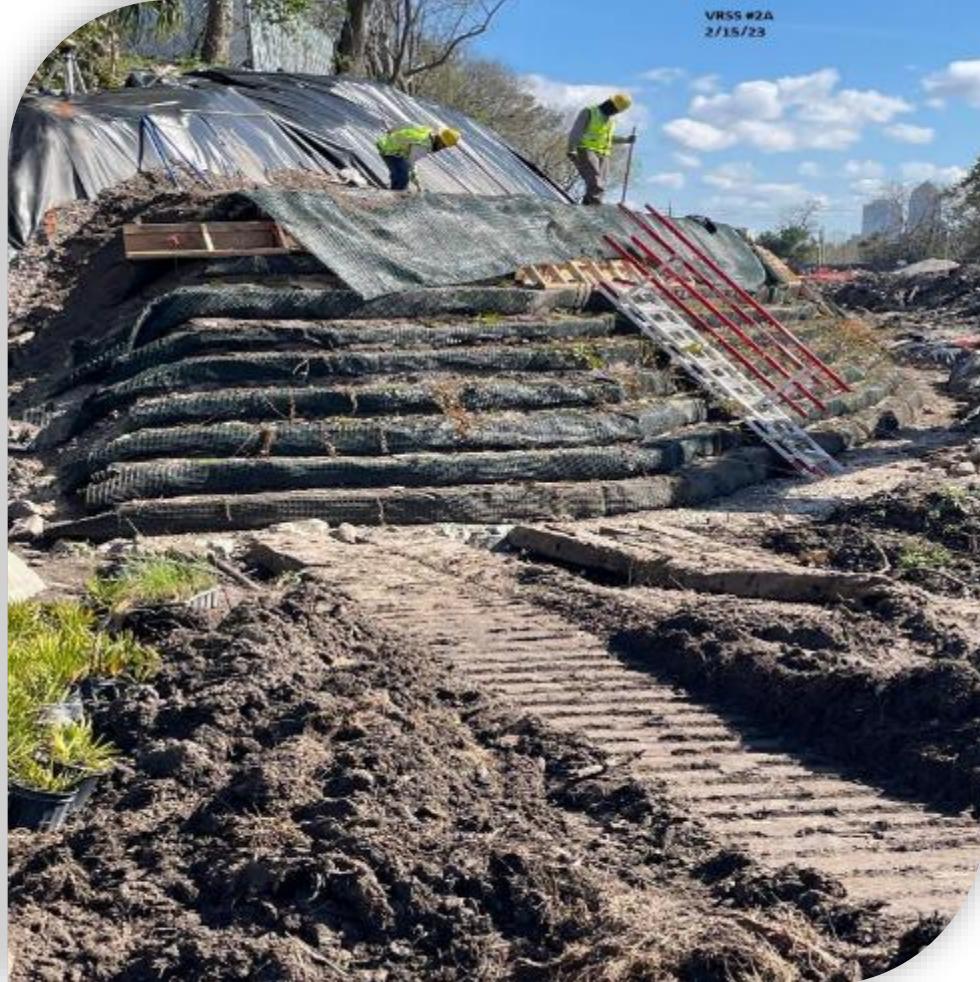
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# Vegetation Reinforced Soil Slope

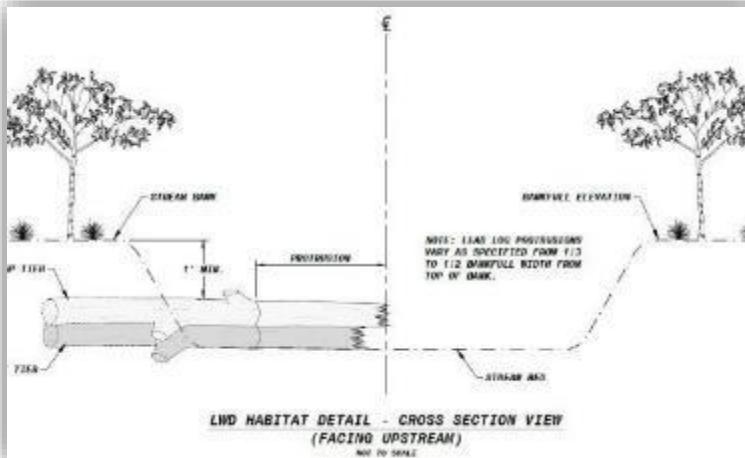
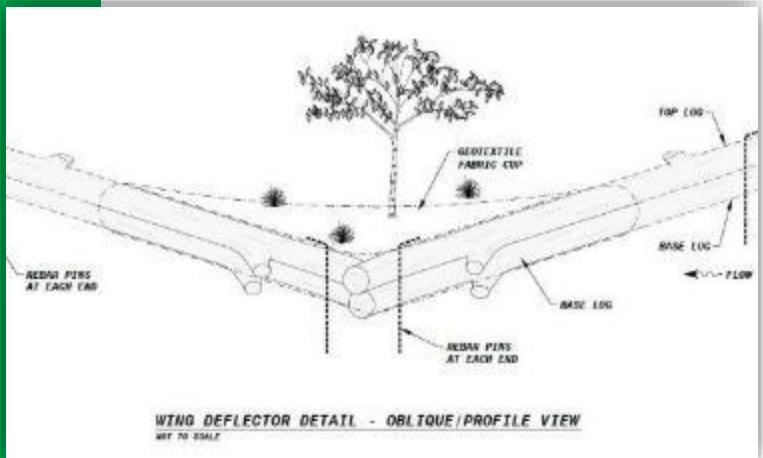
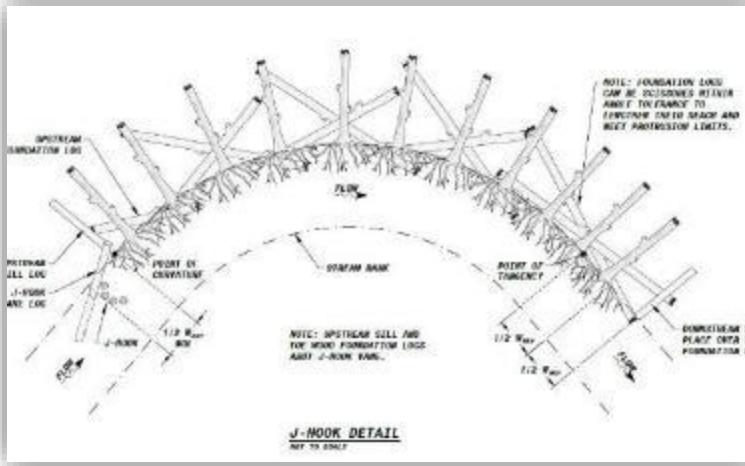
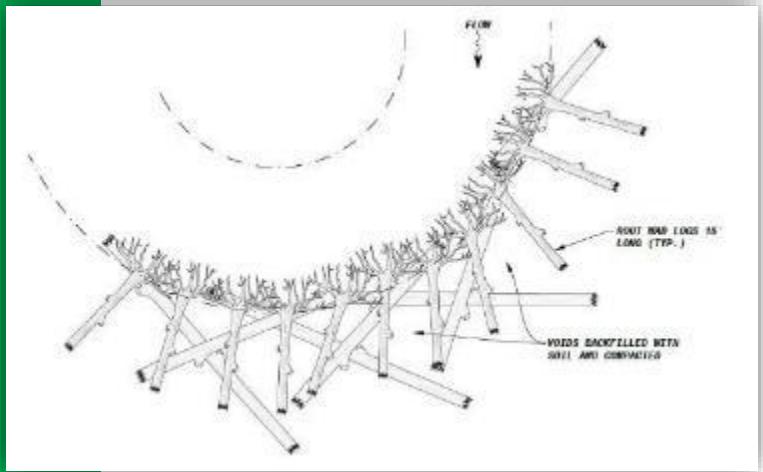


This bioengineering technique allows for the stabilization of the banks without accelerating stream velocities.

# VRSS Wall *Under Construction*



# Instream Treatments



These treatment techniques dissipate energy rather than displacing the energy down the stream.



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# Instream Treatments *Under Construction*



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# Wildlife Habitat & Fish Nurseries



These perennial pools have a shallow connection to the main channel  
but limit access by predators.

# Wildlife Habitat & Fish Nurseries *Under Construction*



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# Planting Selection



Salinity will increase with sea level rise, and long-term adaptive plans for resiliency need to account for that gradient change.



**“May you bloom  
and grow,  
Bloom and grow  
forever.”**

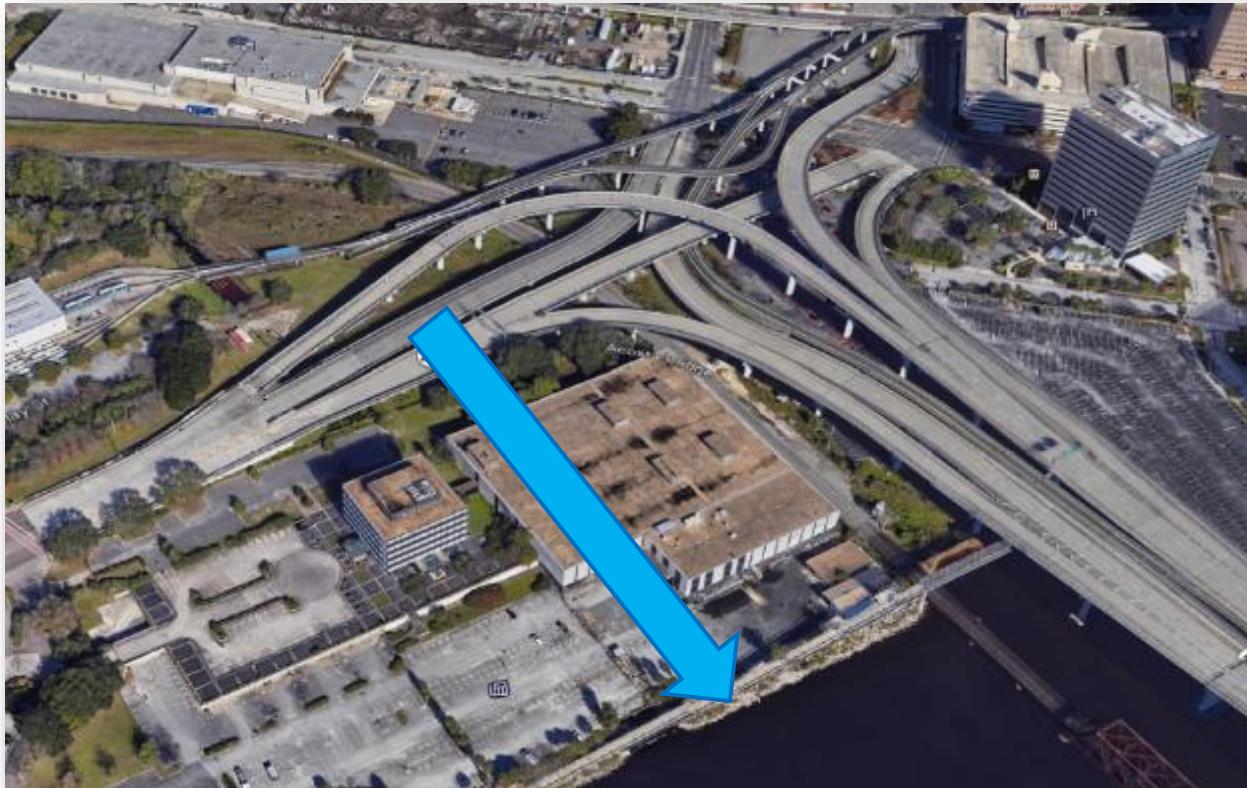


# Planting Selection

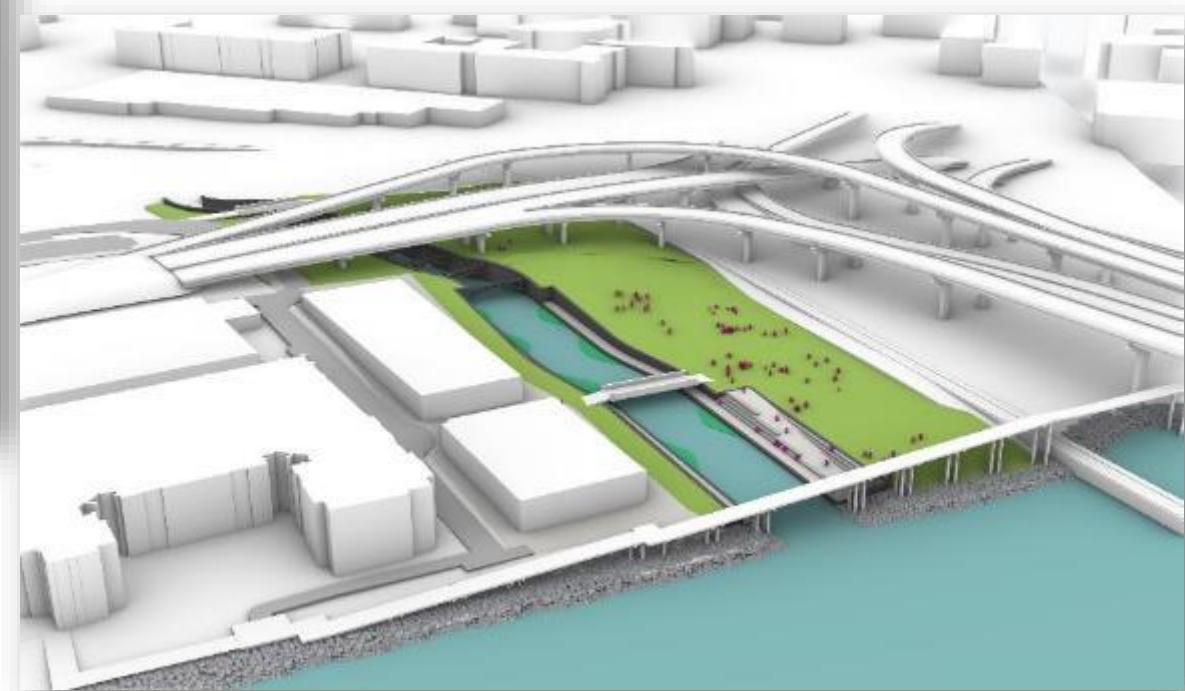


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# Daylighting the Outfall



*“Re: Ray, a drop of  
golden sun.”*



# Daylighting the Outfall



*Photo Credit: Metro Jacksonville article dated September 24, 2010*





# Create a Community Asset

Climb every mountain, Ford every stream...



# Integrated Design

Create connections to creek & trail



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# Trailhead at Stockton St



McCoy's  
Creek

# Trailhead & Playground at Goodwin St



*“Follow every byway.*

*Every path you know.”*

# Engage stakeholders throughout the process

A Few of Their Favorite Things



# McCoys Creek Boulevard Road Closure

Maintain access at rail crossing



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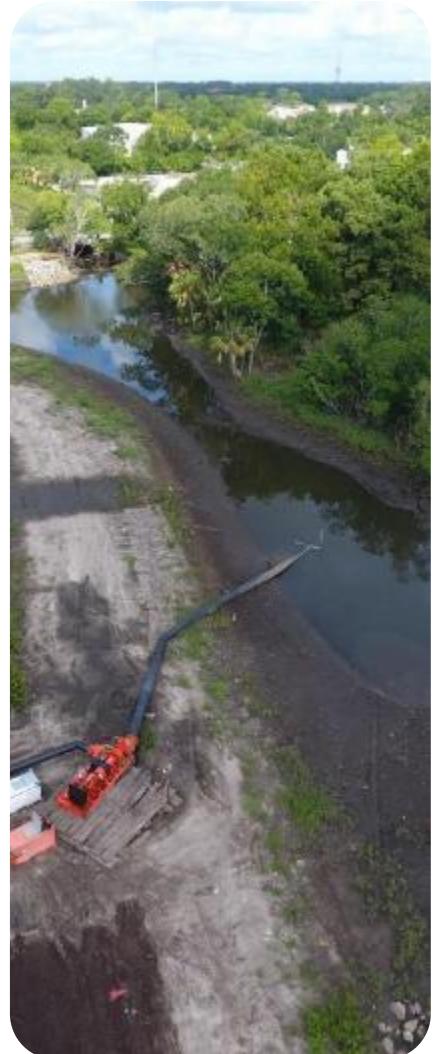
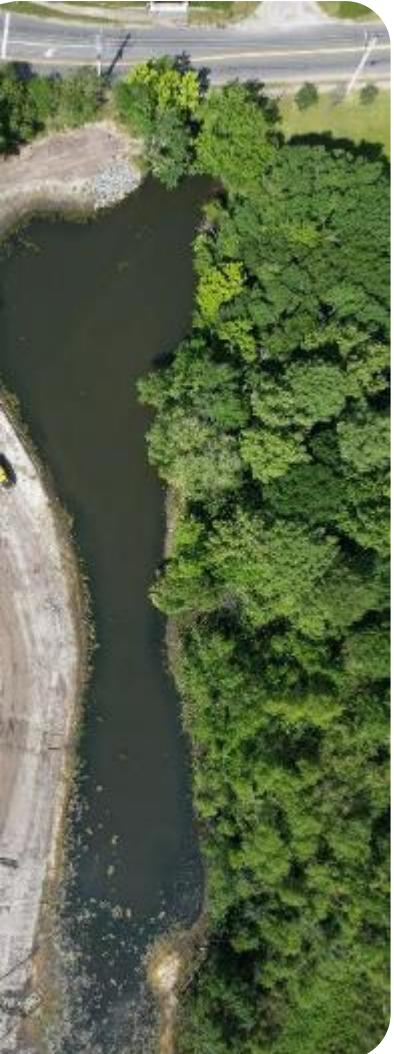


# Tree Preservation

Recognize Community's Priorities

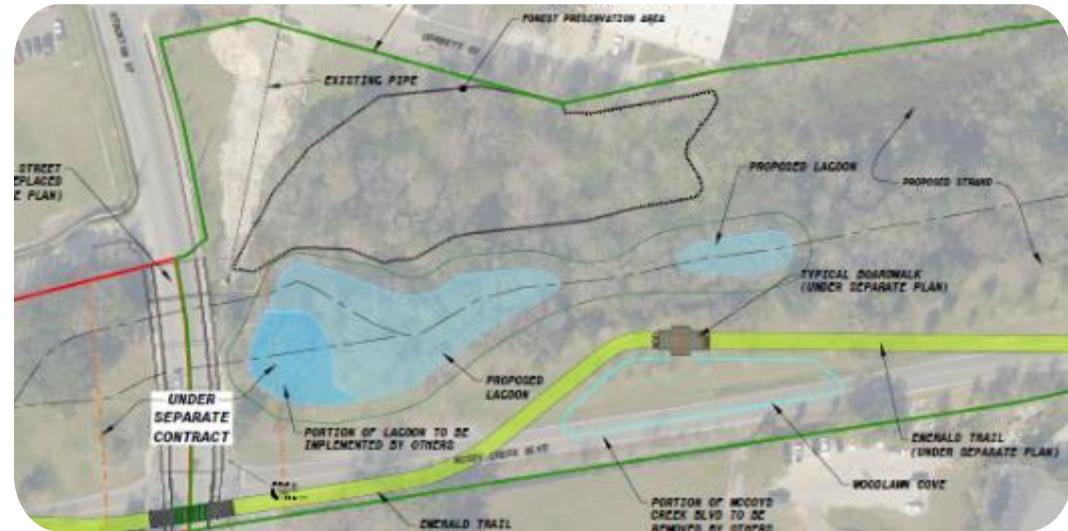


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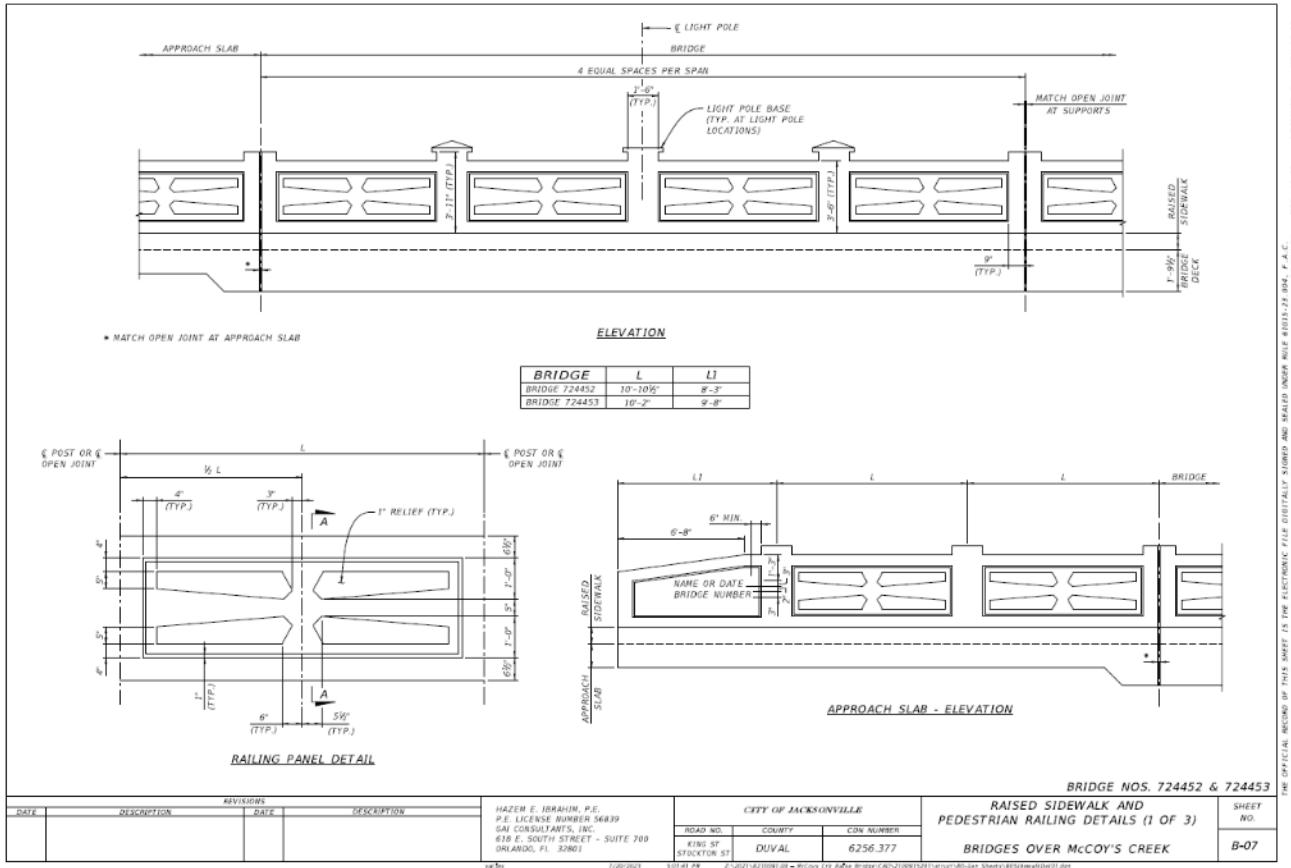
# Tree Preservation

Existing Forest Area



# Historic Bridge Railings

## Be Transparent about Challenges



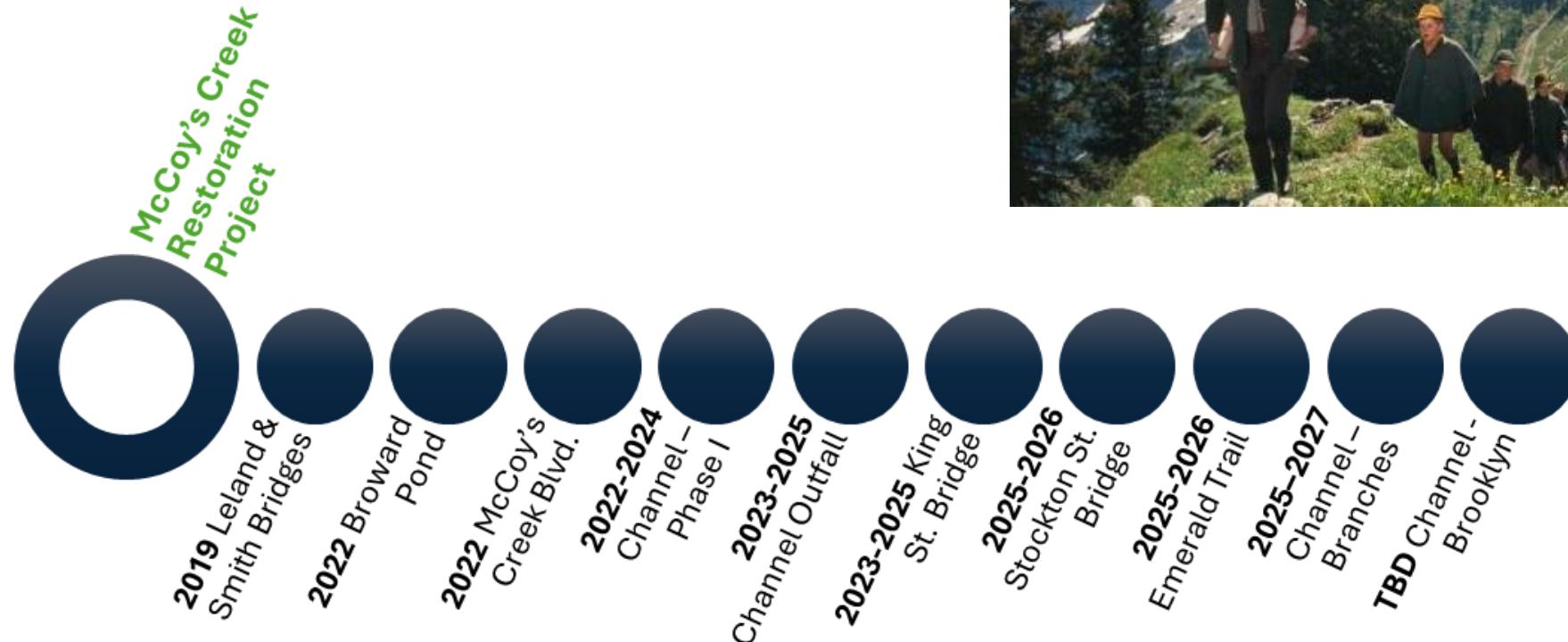
# King St. Bridge

New design inspired by historic railings



McCoy's  
Creek

# Climbing Every Mountain



# So Long, Farewell, Auf Wiedersehen, Thank You!

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