Fish Passage at the New Savannah Bluff Lock and Dam

Prepared By the Savannah District Team

US Army Corps of Engineers

8 Nov 2018

NOTE:
Information Contained in this Document is part of the USACE Pre-Decisional Deliberative Process and Subject to Change

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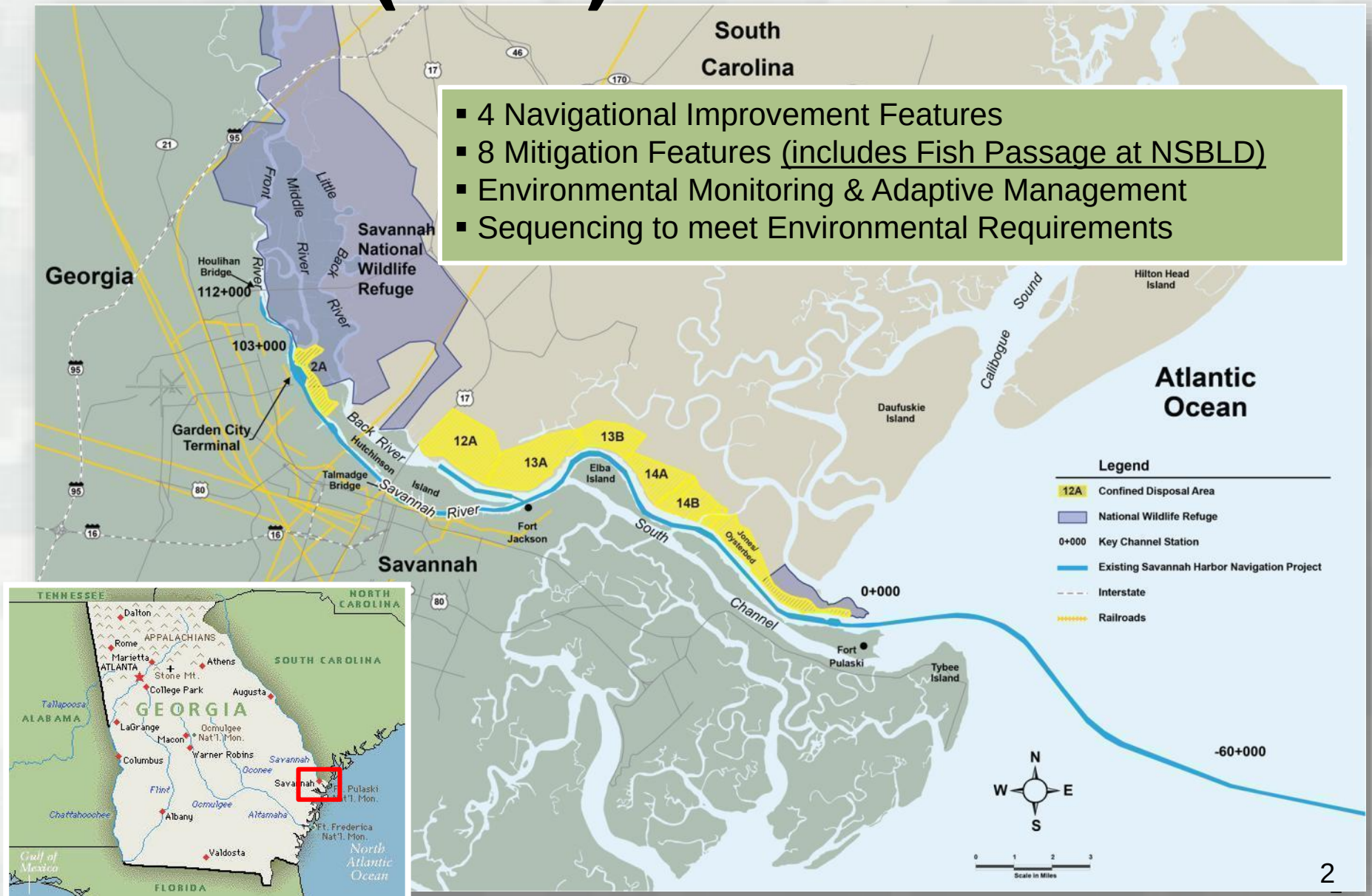
Savannah Harbor Expansion Project (SHEP) at a Glance



- 4 Navigational Improvement Features
- 8 Mitigation Features (includes Fish Passage at NSBLD)
- Environmental Monitoring & Adaptive Management
- Sequencing to meet Environmental Requirements

Fish Passage Project Area

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NSBLD - Cracked and Aged

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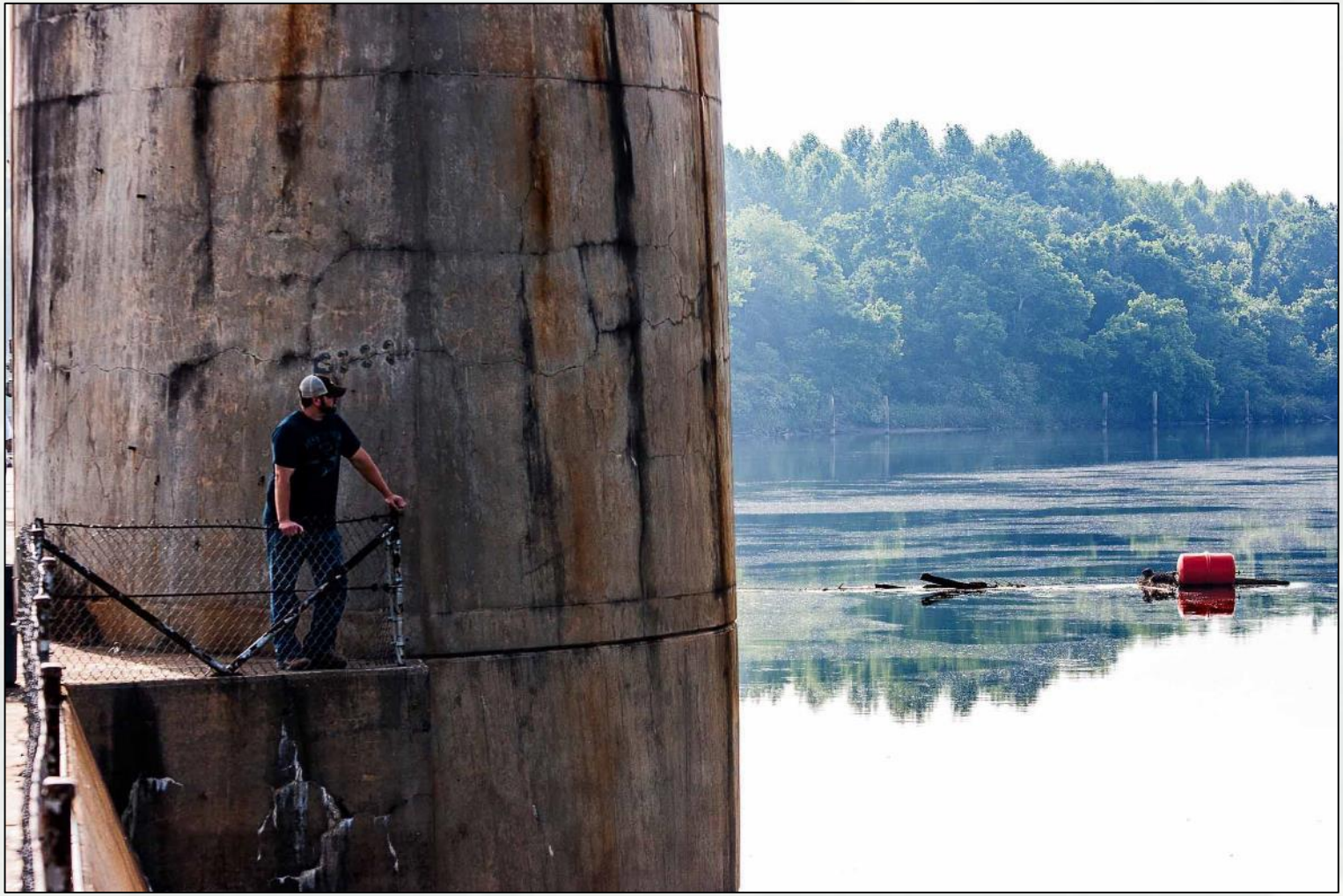

Original SHEP Plan

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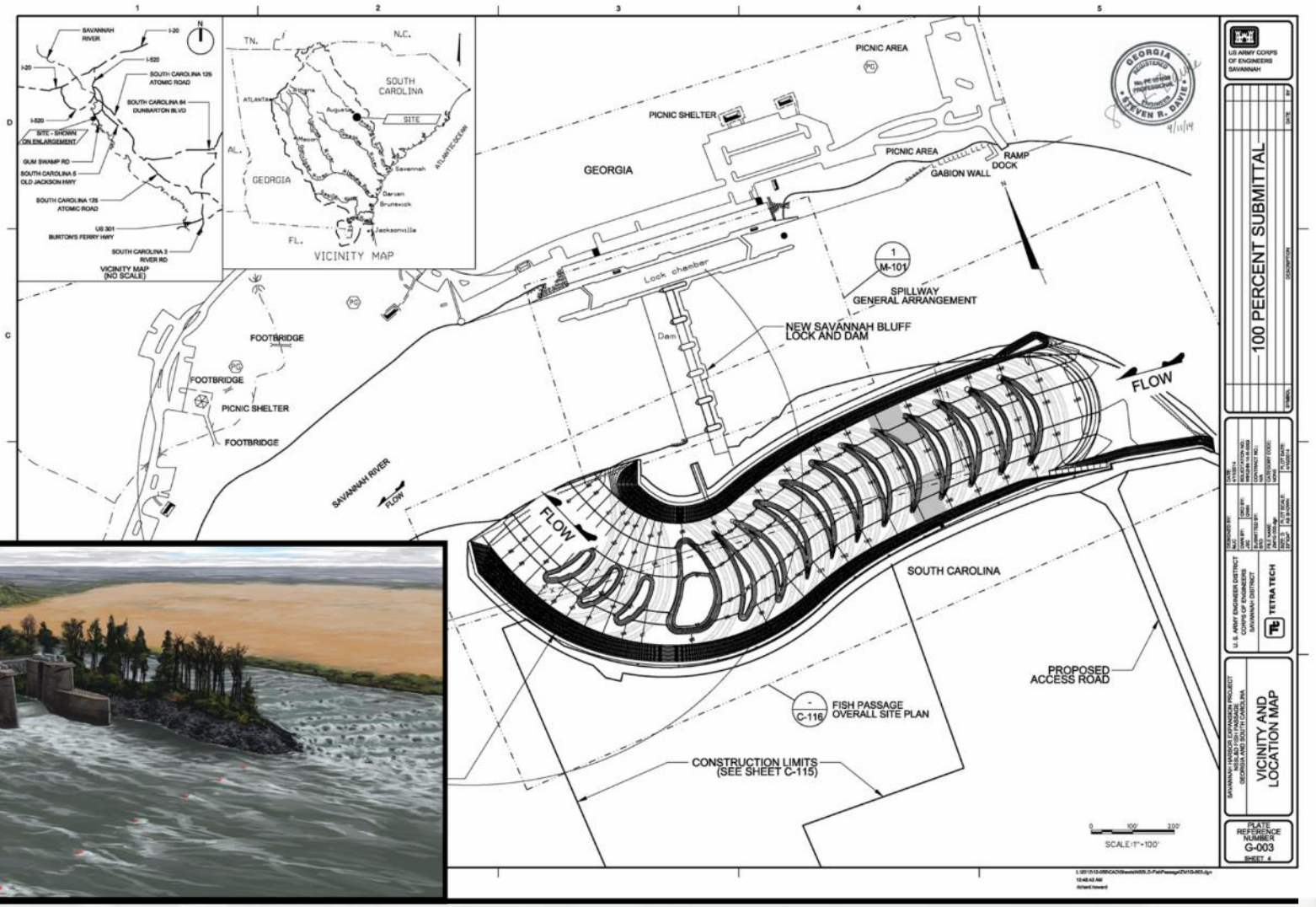

The WIIN Act (Dec 2016)

- De-authorized the Lock and Dam
- Constructs an in channel fish passage
- Preserves upstream pool for purposes and function of navigation, water supply, recreation, and directs analysis of two options:

EITHER

Repair of the lock wall and modify the structure

OR

Remove entire lock and dam after constructing a water damming structure (or weir)

Addressing Concerns
In Alternatives Development

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- Goal
  - Engineering Feasible, Environmentally Acceptable, and Cost Effective Fish Passage
- Public Scope
  - May 2017 - Feedback from In-Person Workshop in Augusta
- Model Analysis
  - Impacts from Low Water
  - Impacts from Flooding
- Water Intakes Analysis

Evaluation Criteria

1. Pass Fish
2. Cost
3. Navigation
4. Water Supply
5. Recreation

Evaluation Criteria Cont'd

- Criteria: Pass Fish, Cost, Navigation, Water Supply, Recreation, Real Estate Required

- Evaluation Scale:
  - +1 for positive
  - 0 for neutral
  - -1 for negative

- Constraints:
  - Flooding - no alternatives carried forward with a negative or "high" result
  - Time – Fish Passage construction start NLT January 2021

Example Evaluation Matrix: A Deliberative Process

Alternatives	Ability to Pass Fish	Navigation in pool	Water Supply	Recreation	Additional Flowage Easements Required	Average Annual Cost Compared to Original SHEP Plan	Total Score	Average Annualized Cost	Initial Investment Cost	Avg Annualized Cost O&M and Major Rehab
Example 1	-1	+1	+1	+1	+1	0				
Example 2	+1	+1	-1	0	+1	+1				
Example 3	+1	+1	+1	0	0	+1				
Example 4	+1	+1	0	+1	+1	+1				
Example 5	-1	+1	+1	+1	+1	-1				

Note: Values for illustration only

Hydraulic Model Development

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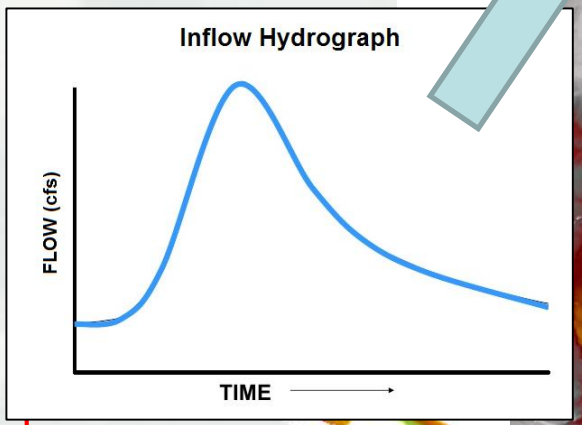

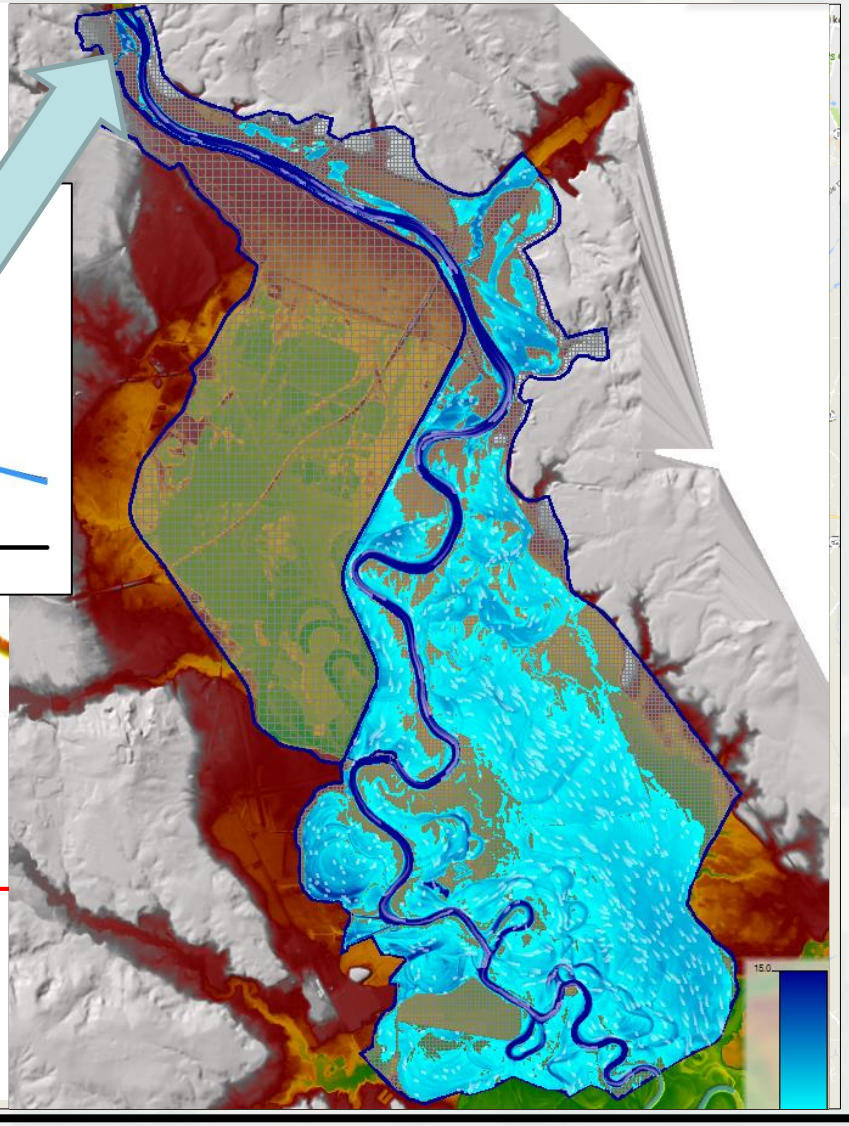

1) FEMA Model
2) Georeferenced HEC-RAS Model
3) Study Area
4) LiDAR Topography
5) Channel Bathymetry
6) Training Wall Survey
7) 2D HEC-RAS Model
8) Sample Inundation (10-yr Flood)

Based on Flow Volumes

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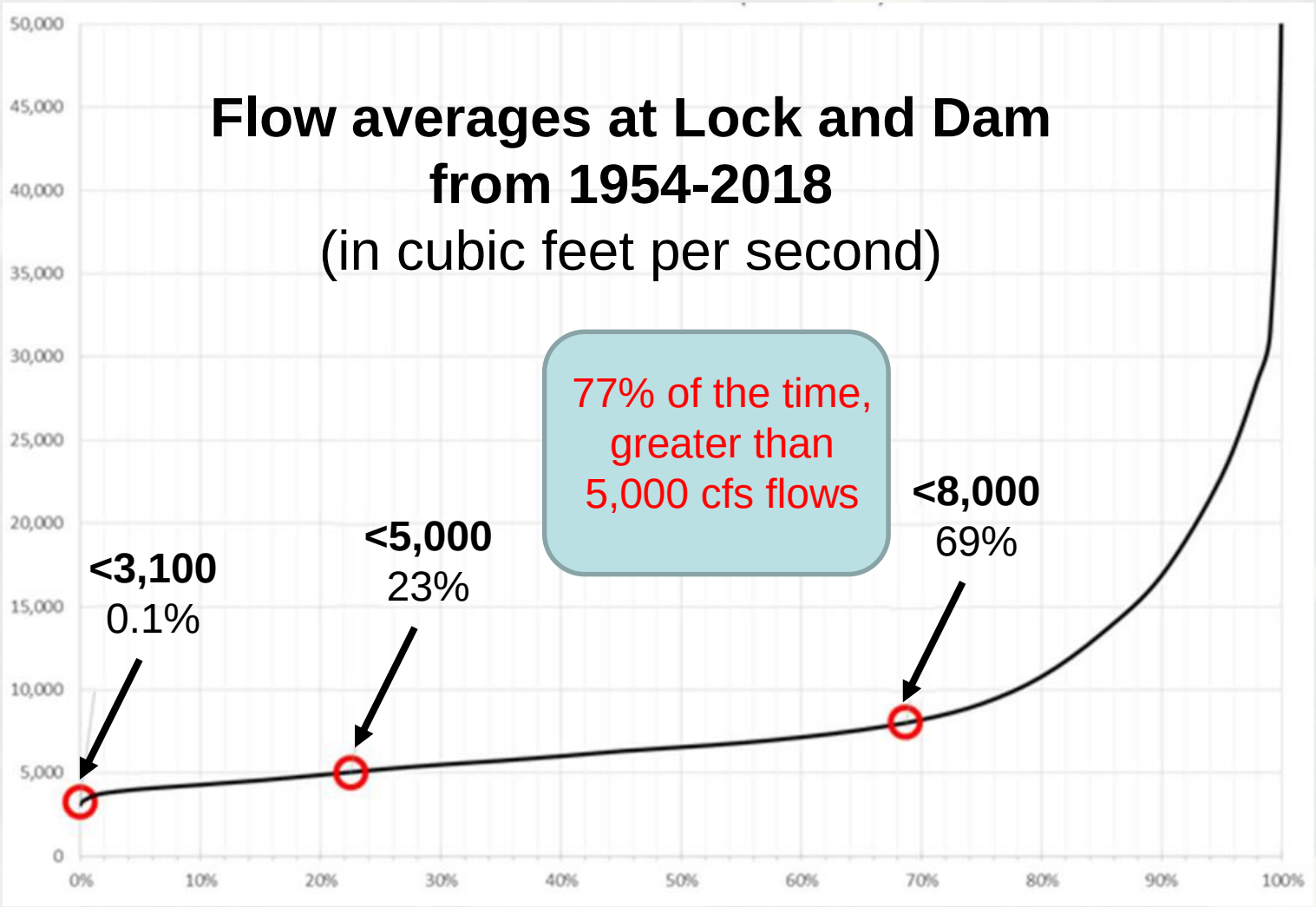
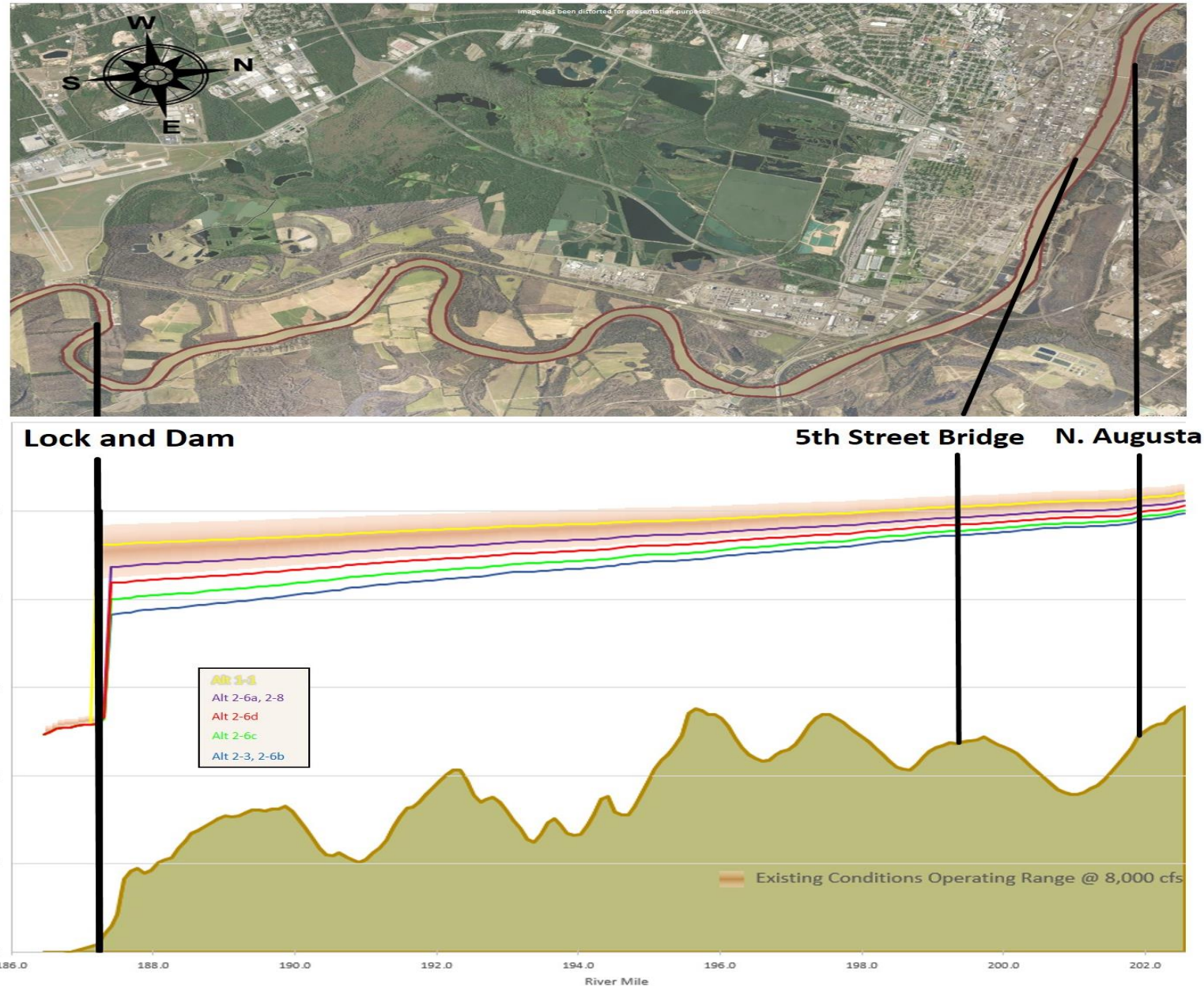


Depth Attenuation



Final WIIN Alternatives And Concept Designs Under Analysis

Retain Dam with GA Side Fish Passage

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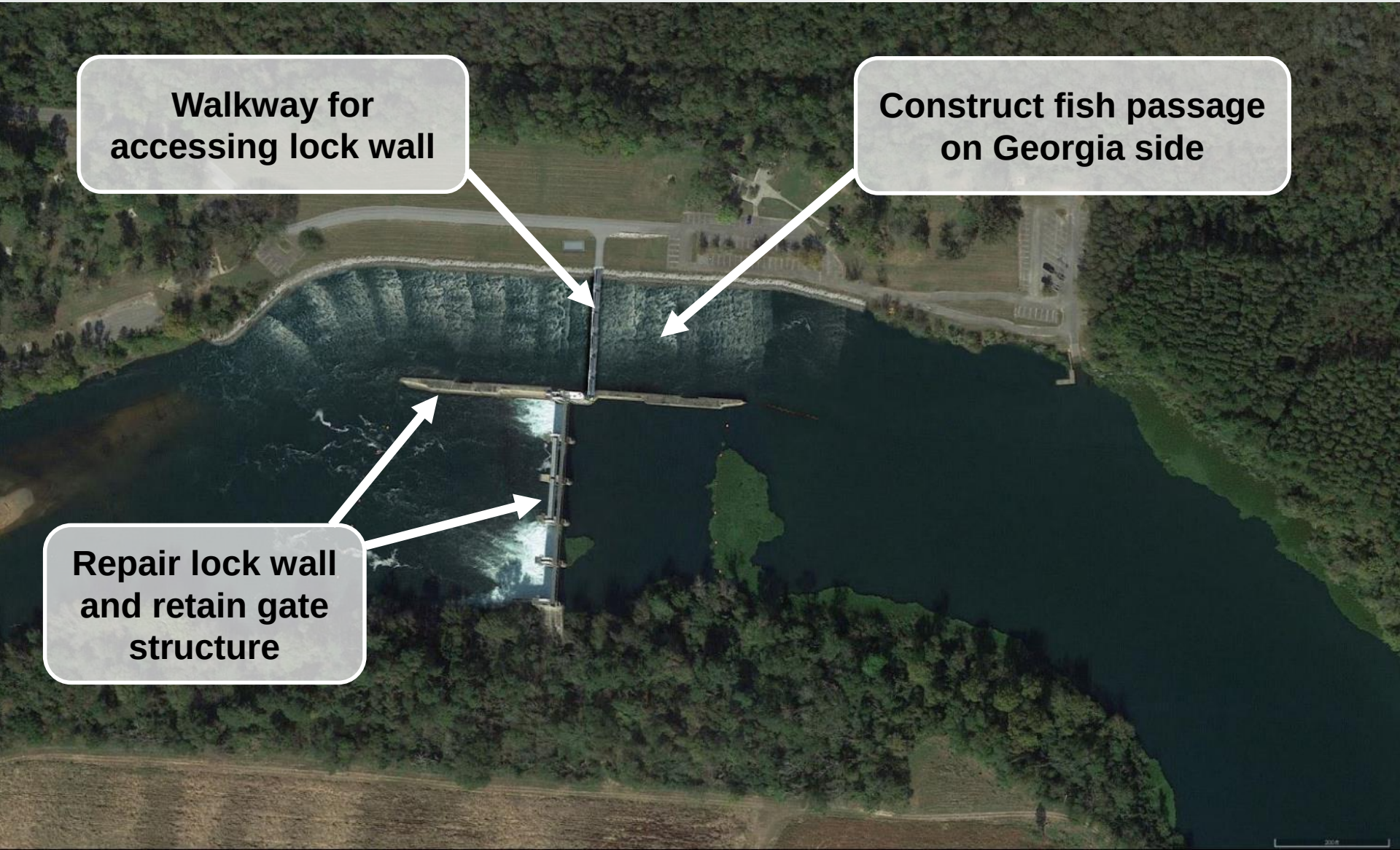

Impacts: 5th Street Bridge

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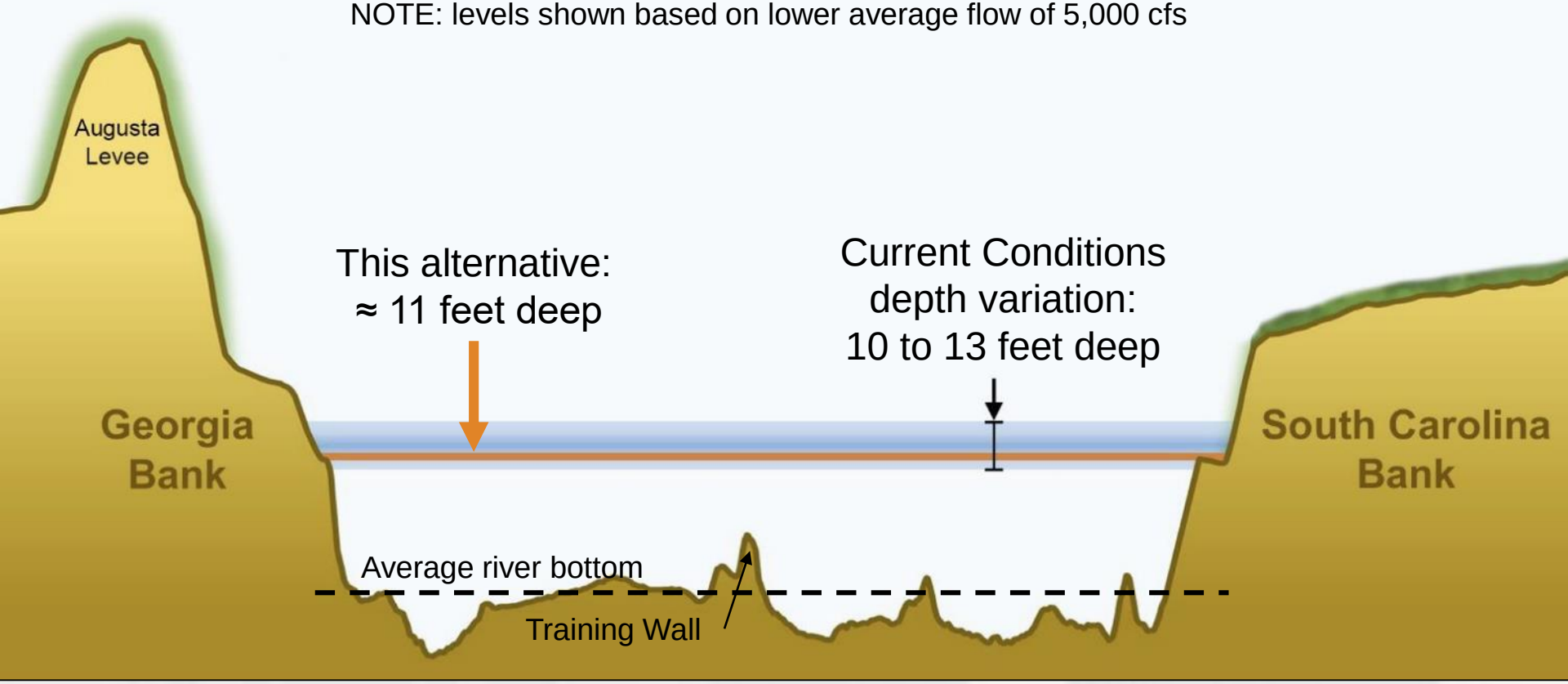
Retain Dam with GA Side Fish Passage

NOTE: levels shown based on lower average flow of 5,000 cfs



Shoreline Tool for Alt 1-1

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Fixed Weir

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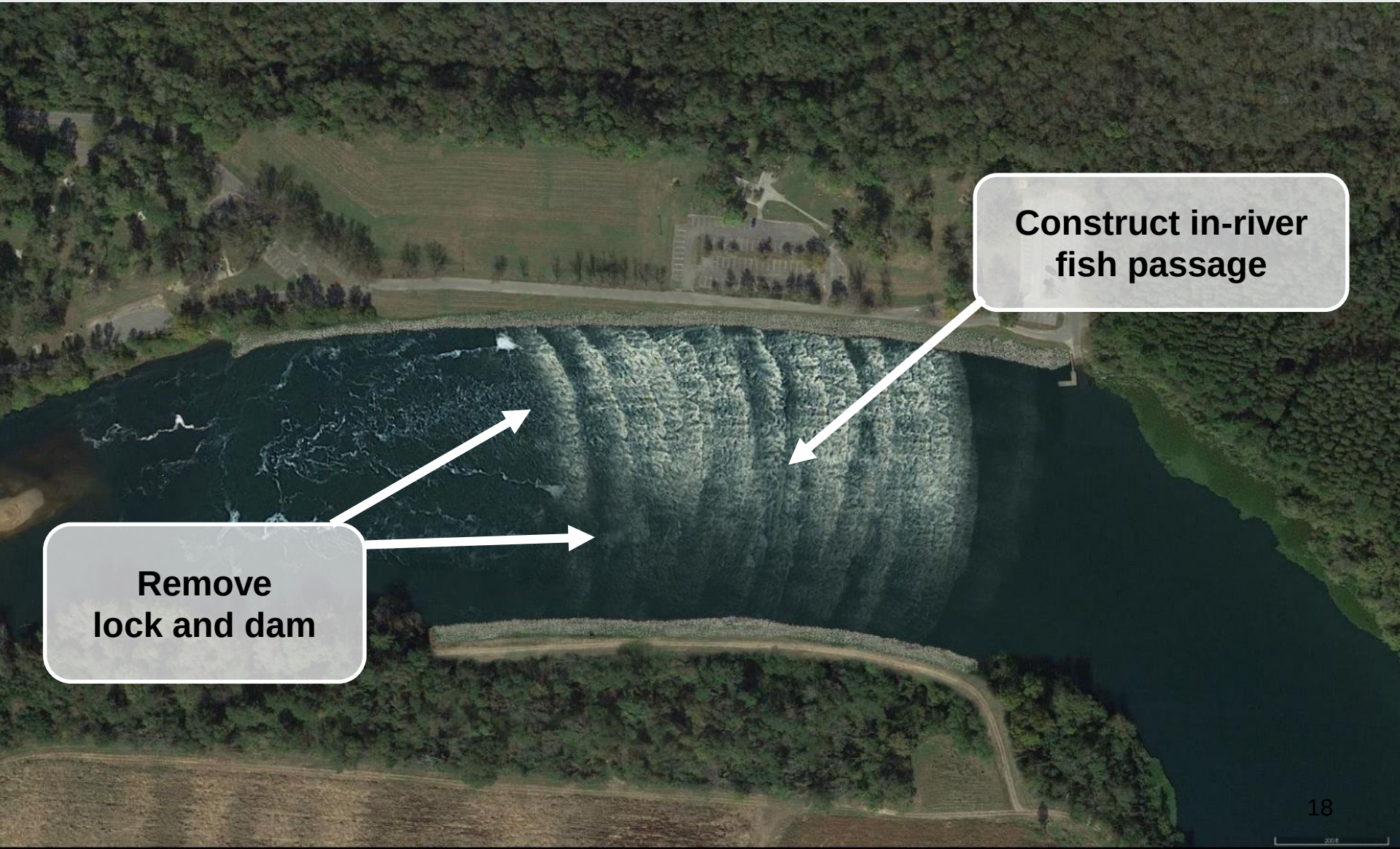

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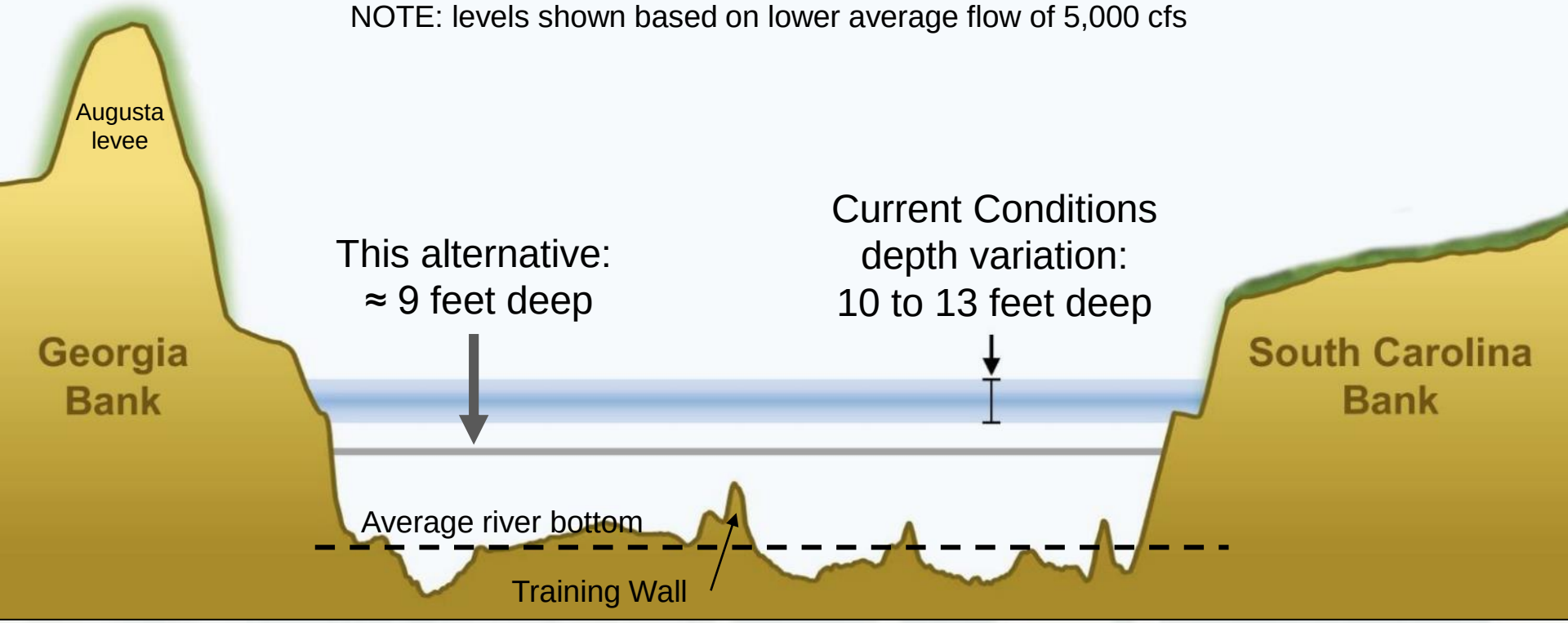
Fixed Weir

NOTE: levels shown based on lower average flow of 5,000 cfs



Shoreline Tool for Alt 2-3

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Fixed Weir with Wet Floodplain

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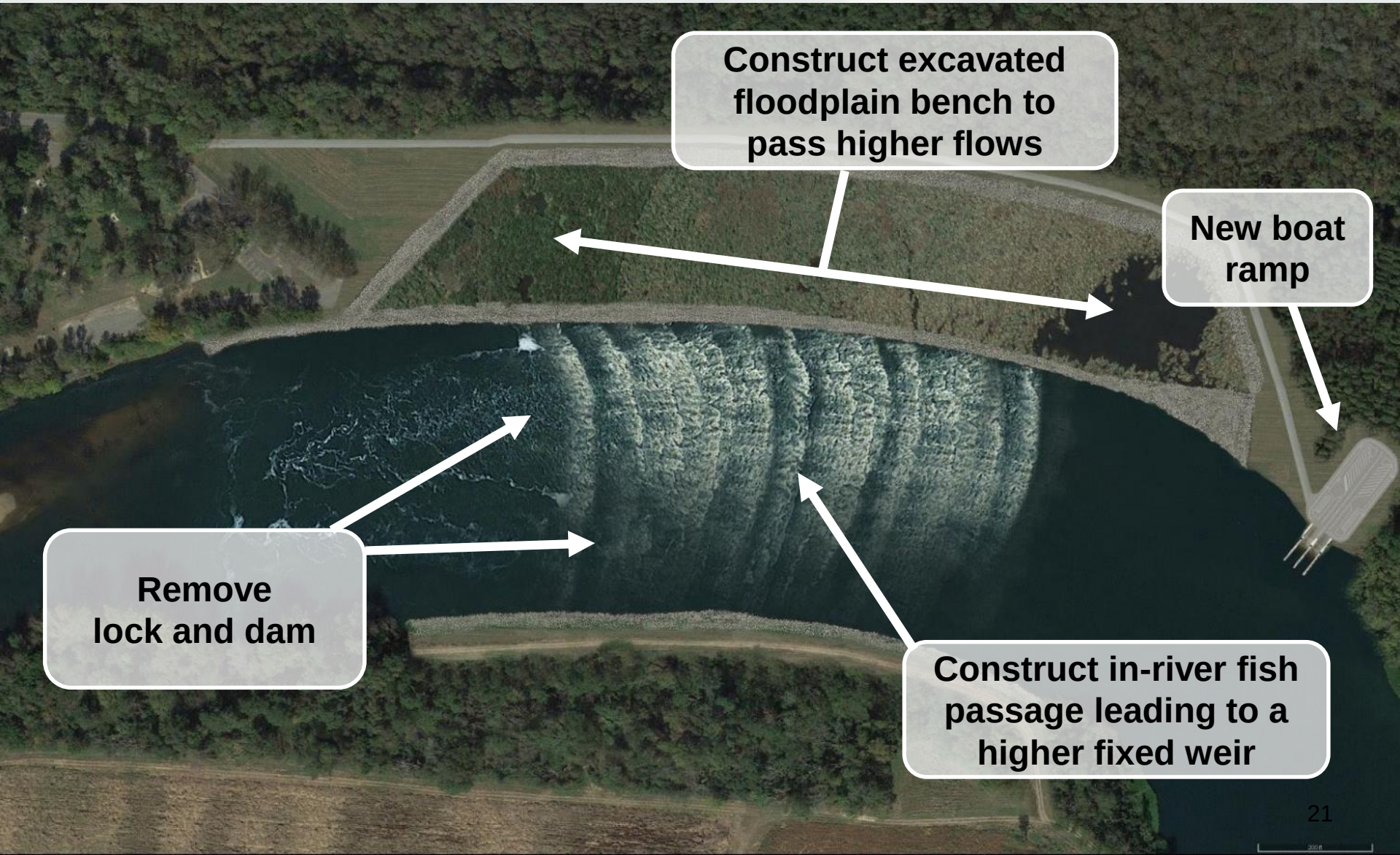

Impacts: 5th Street Bridge

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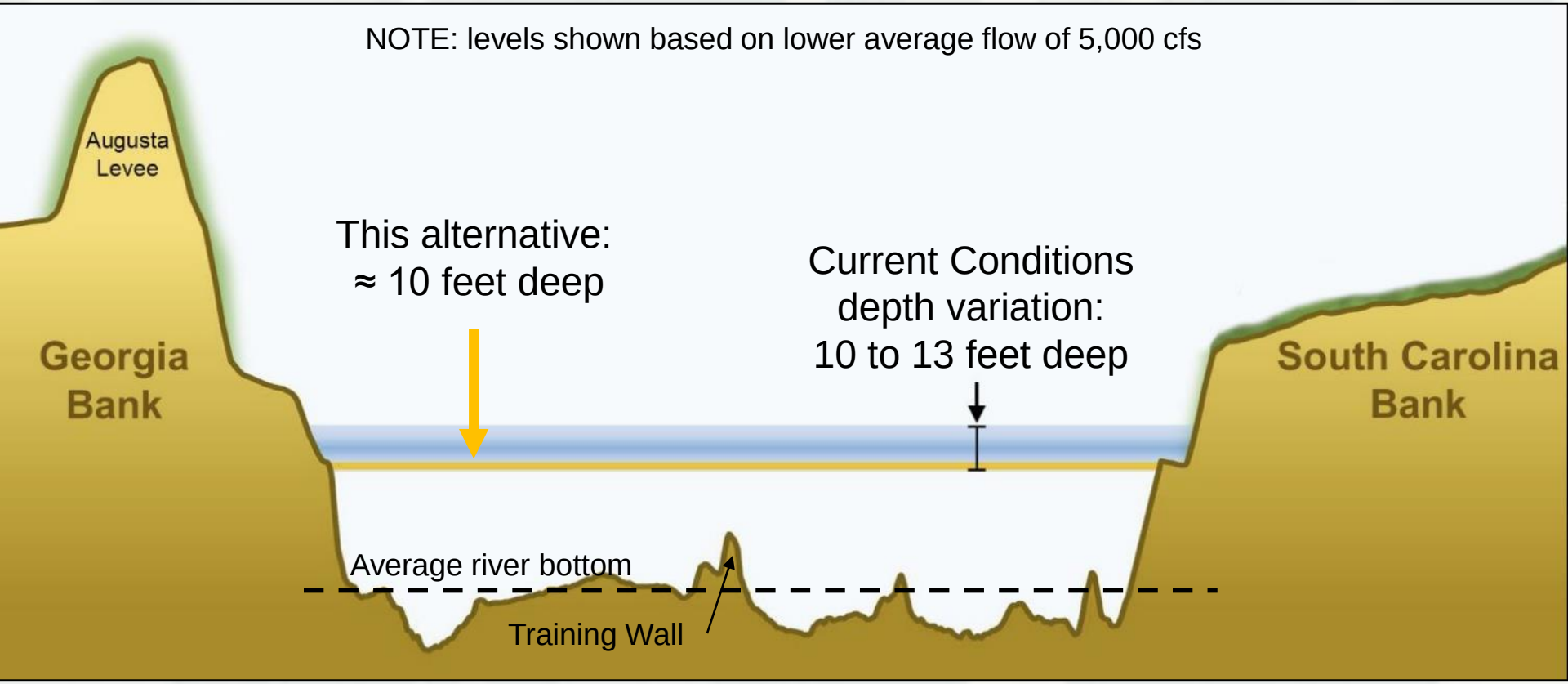
Fixed Weir with Floodplain



Shoreline Tool for Alt 2-6a

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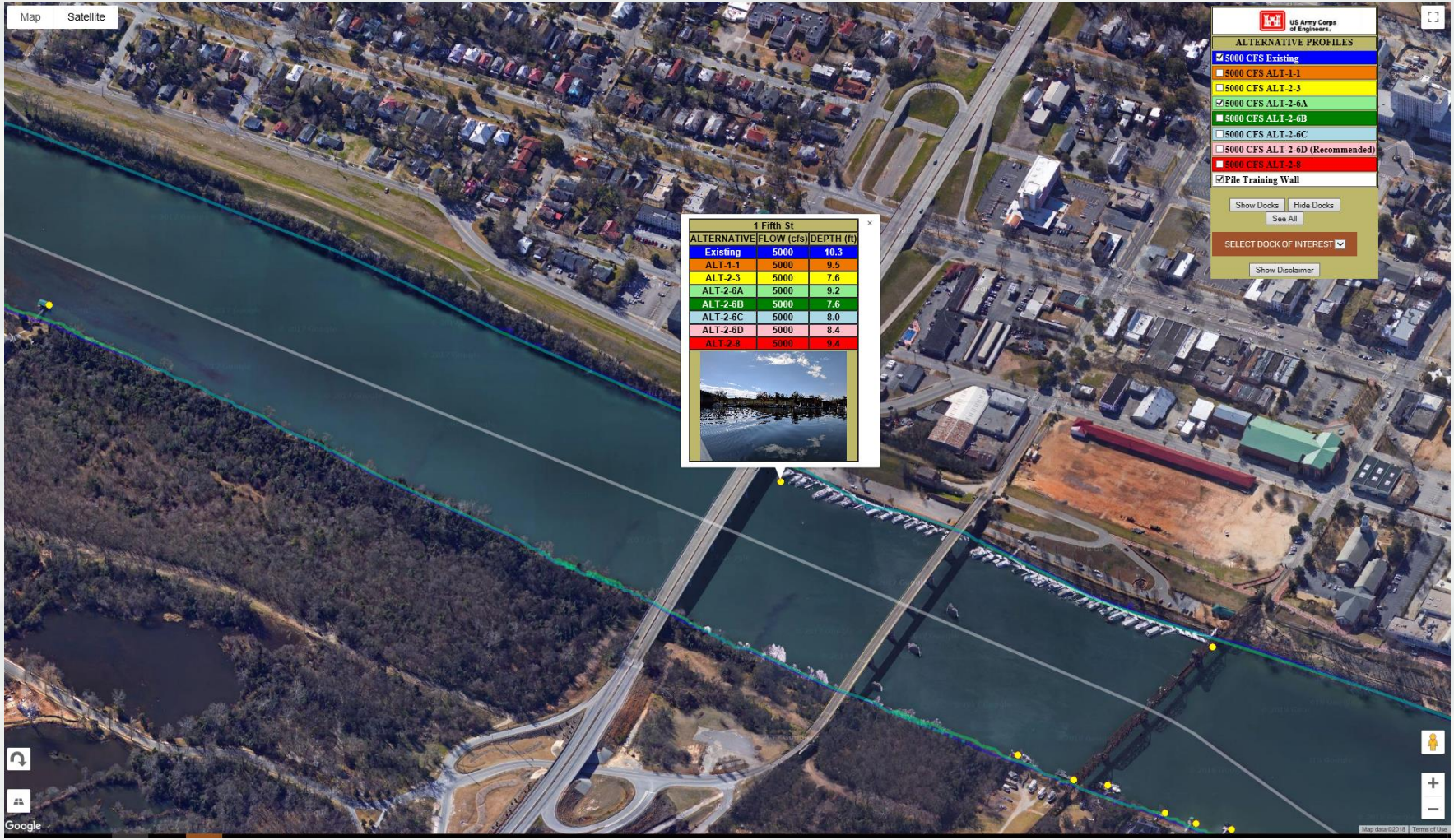

Fixed Weir with Dry Floodplain

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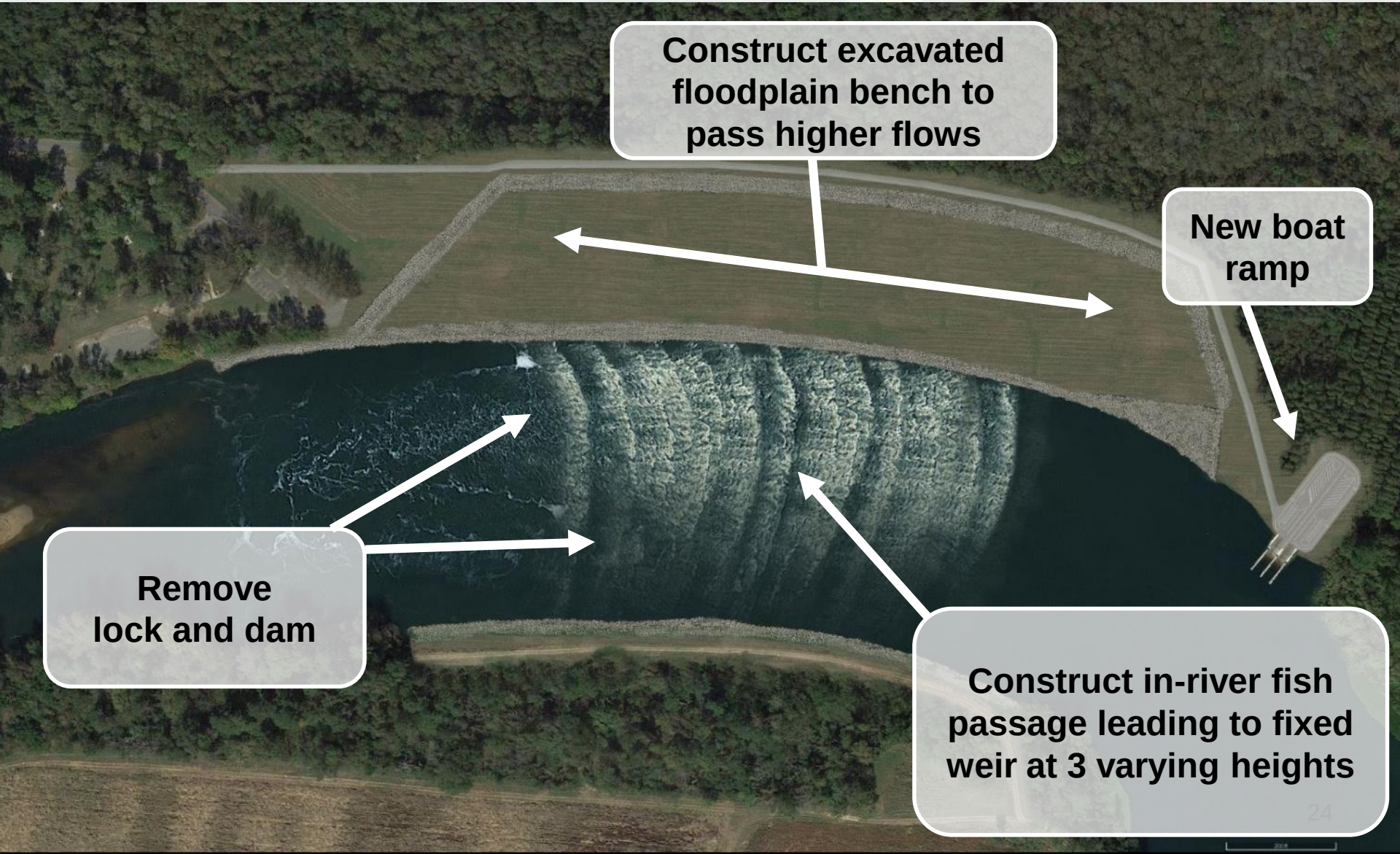

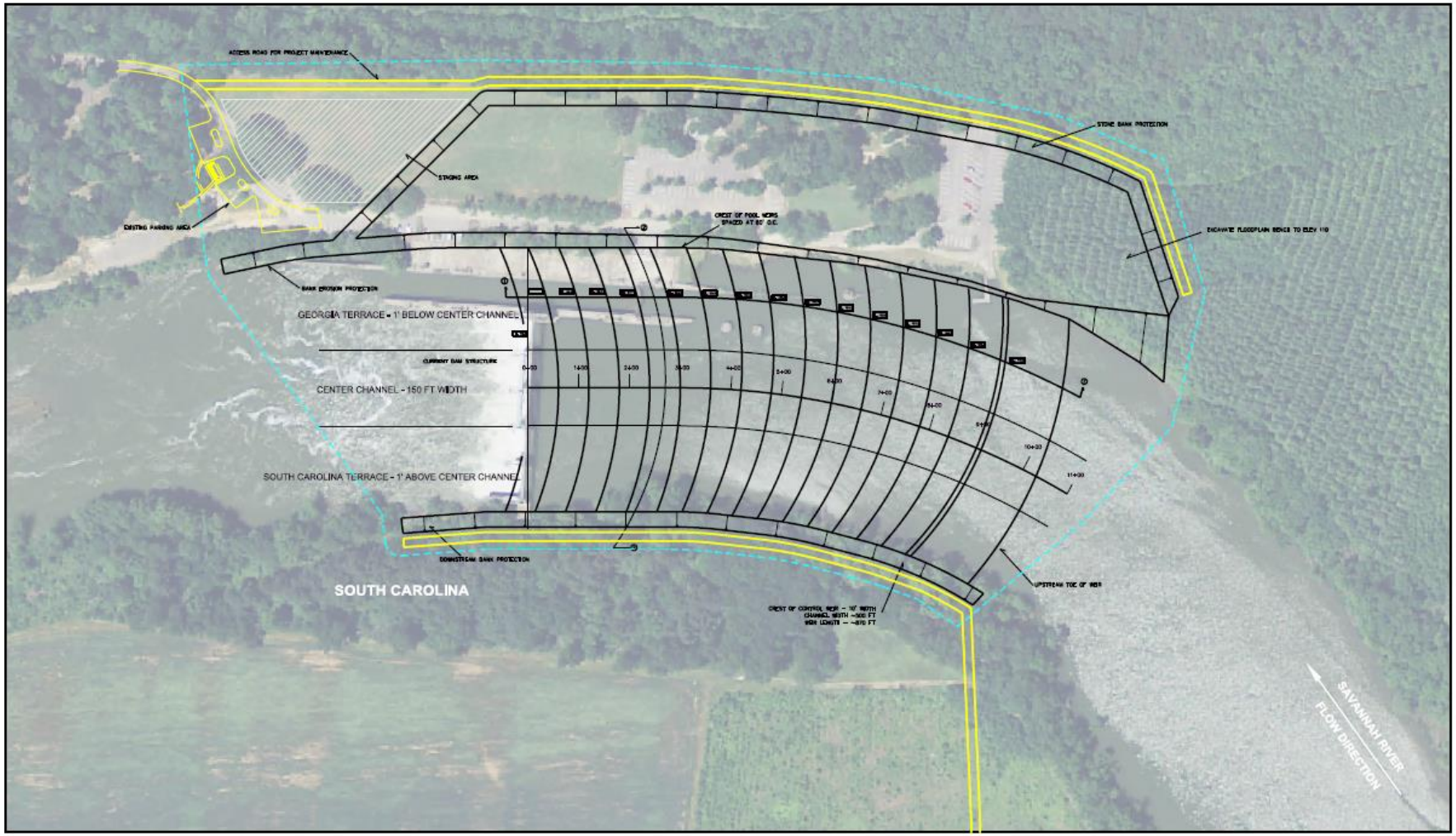

CONCEPTUAL FISH PASSAGE SYSTEM

NEW SAVANNAH BLUFF LOCK AND DAM
FISH PASSAGE SYSTEM
ALTERNATIVE 2-6

SHEET NUMBER
SHEET 1 OF 2

Impacts: 5th Street Bridge

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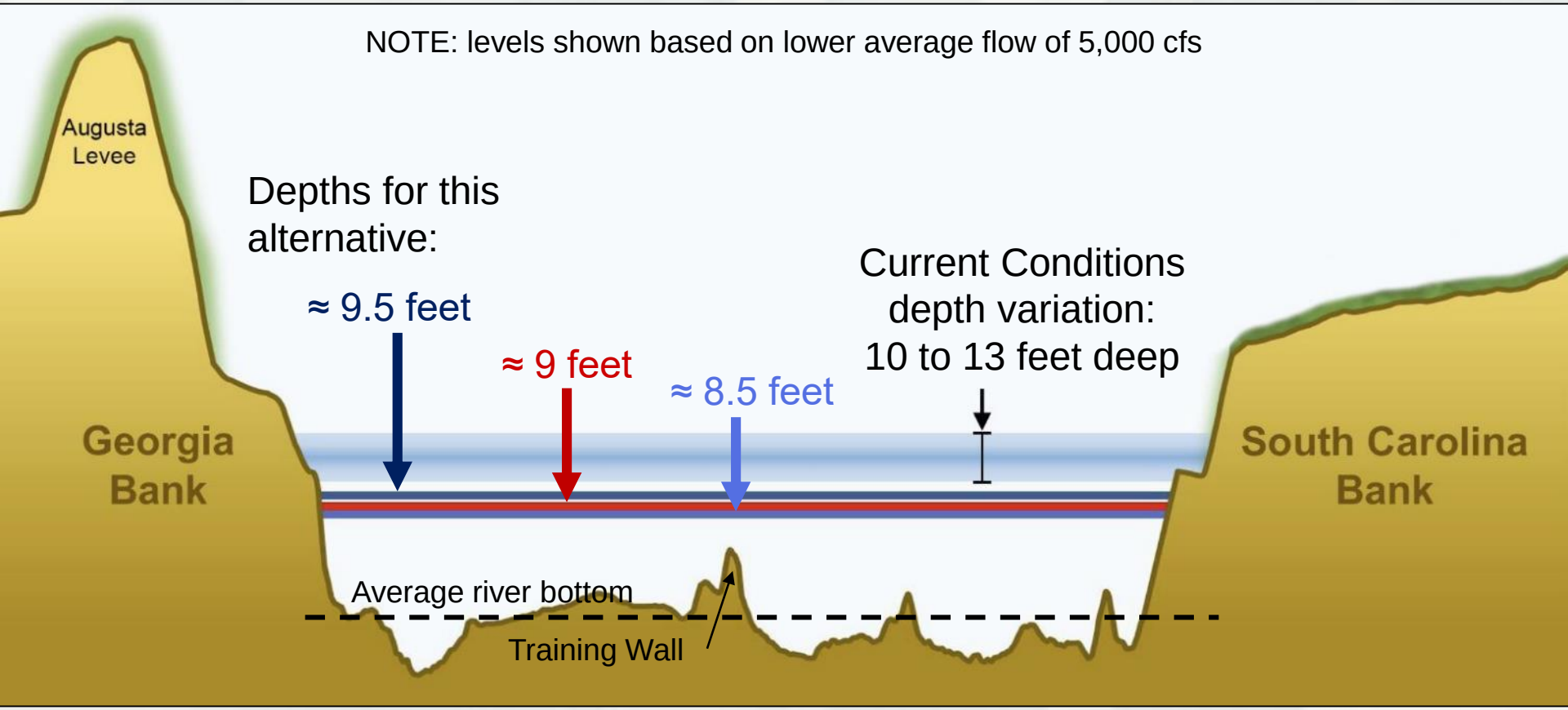
Fixed Weir with Dry Floodplain: Varying Heights



Shoreline Tool for Alt 2-6 b,c,d

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Gated Bypass Channel

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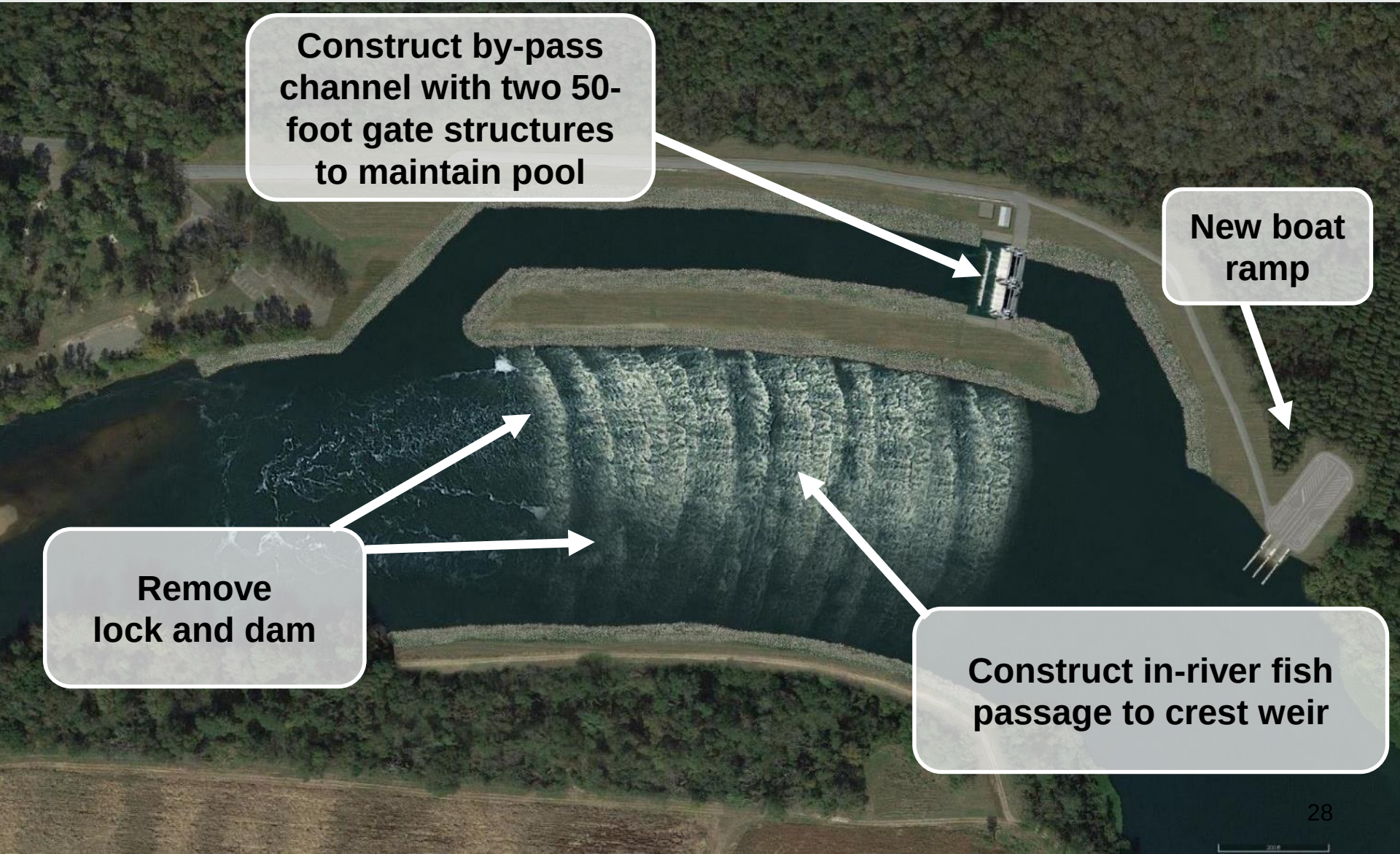

Impacts: 5th Street Bridge

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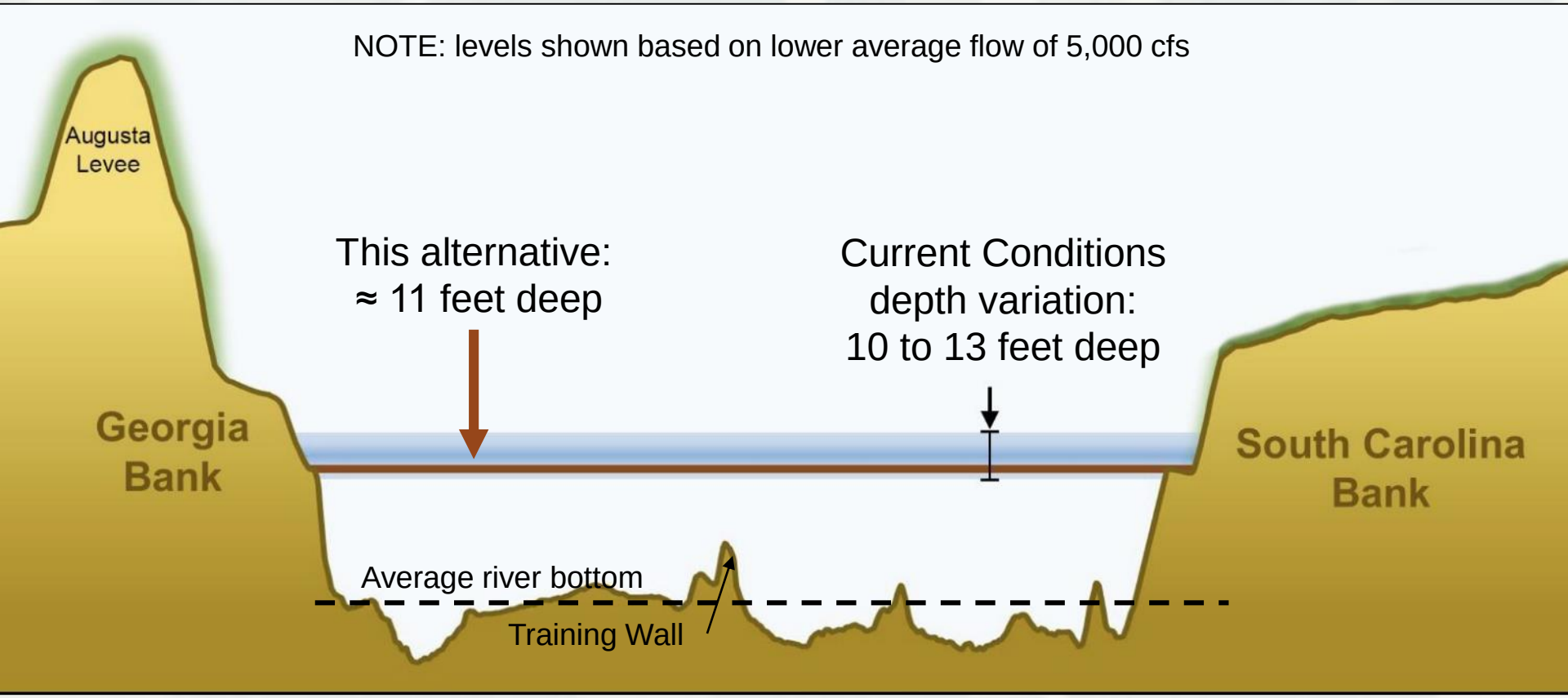
Gated Bypass Channel



Shoreline Tool for Alt 2-8

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Post Authorization Analysis Schedule

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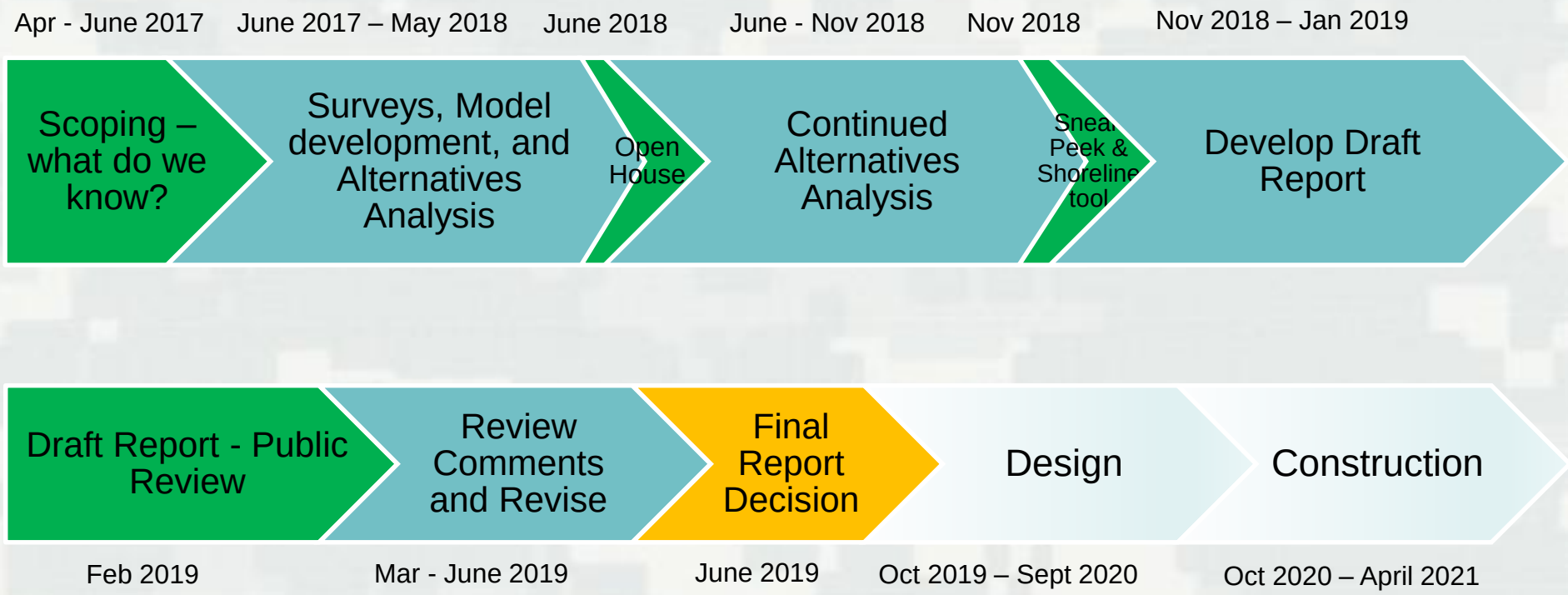
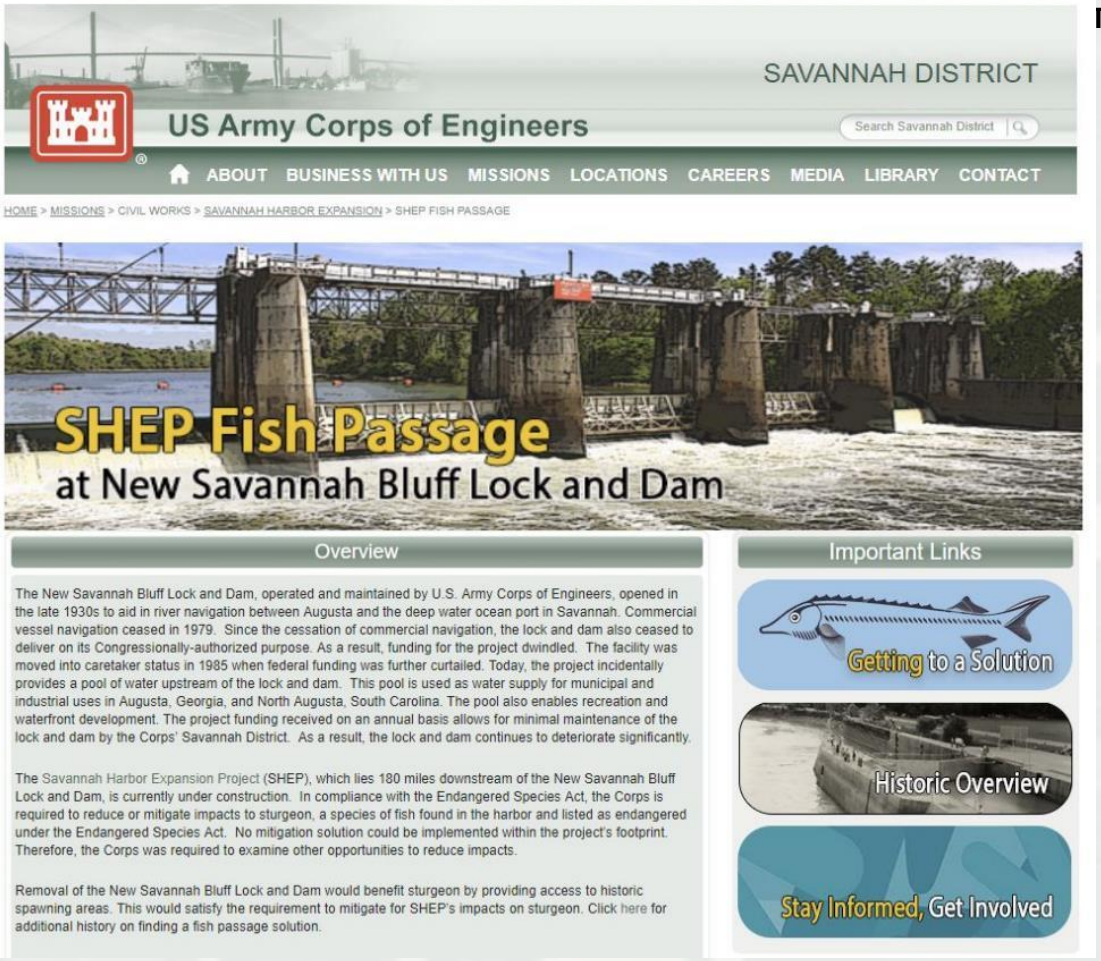


Public Information

The SHEP Fish Passage Web page went live in May and provides information and updates for the public



https://go.usa.gov/xQRwS

Questions

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