

Fish Passage at the New Savannah Bluff Lock and Dam

Prepared By the Savannah District Team

US Army Corps of Engineers

14 November 2018

NOTE:

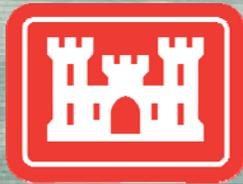
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U.S. ARMY



US Army Corps of Engineers
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Overview



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- SHEP Fish Passage Project Area
- NAA – Original SHEP Plan
- WIIN Act Requirements
- Evaluation Criteria
- Evaluation Matrix
- Recommended Plan
- Final Array of Alternatives
- Schedule





Fish Passage Project Area



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187 Miles to Savannah Harbor

Georgia

19 Miles to Augusta Shoals, Historic Sturgeon Spawning Grounds

Savannah River

South Carolina

New Savannah Bluff Lock & Dam

Completed in 1937 to improve commercial navigation between Savannah and Augusta, Georgia

Lock operations ceased in 2014 due to concerns over structural stability of the lower lock wall

Sources: Esri, DigitalGlobe, GeoEye, (satellite), USDA, USGS, AeroX, GeoEye, AeroVista, IGN, IGP and the GIS User Community



WIIN Act Requirements



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- De-authorized the Lock and Dam
- Constructs an in channel fish passage
- Preserves upstream pool for purposes 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)



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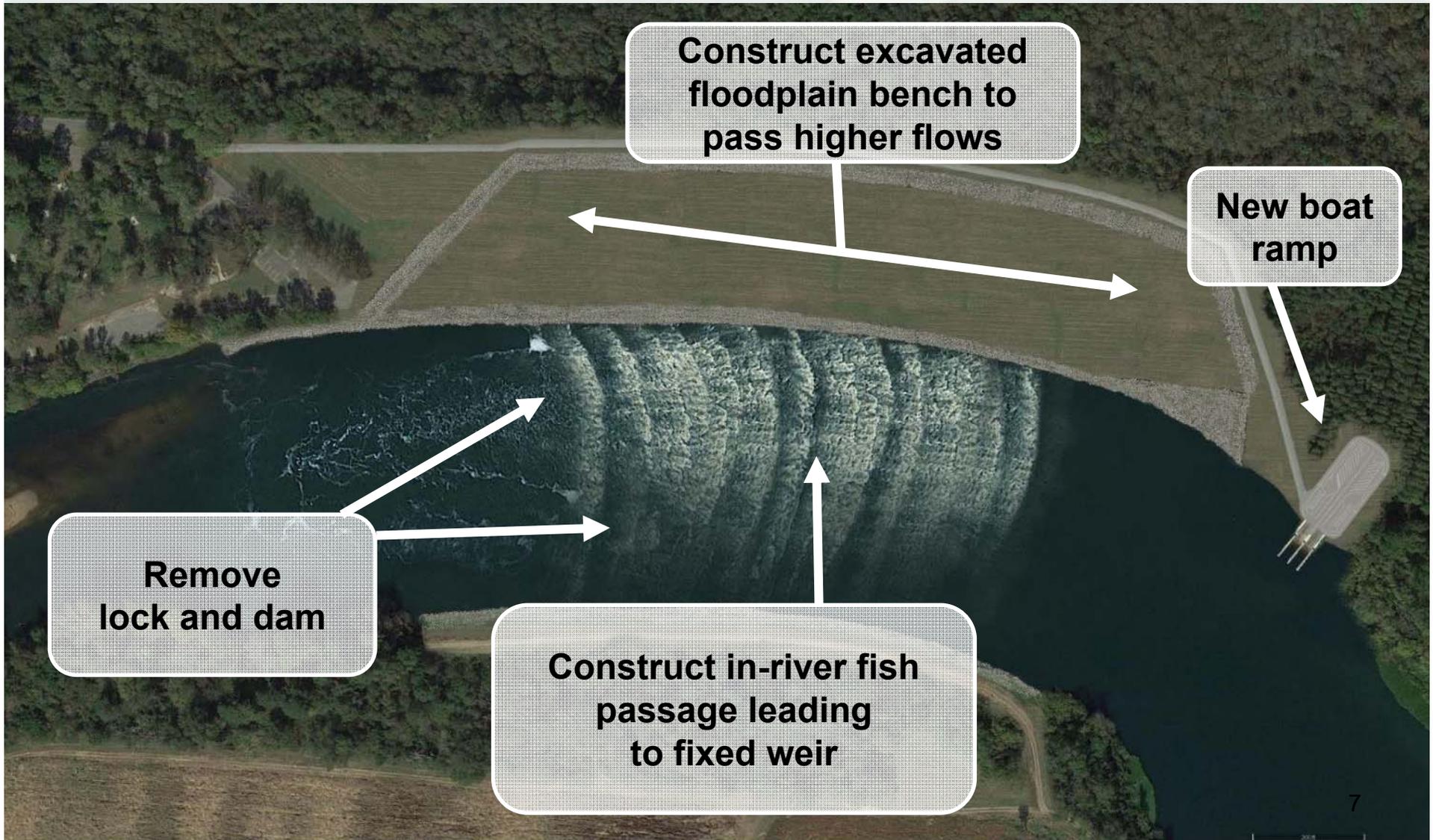
Final WIIN Alternatives



Recommended Plan: Fixed Weir with Floodplain Bench



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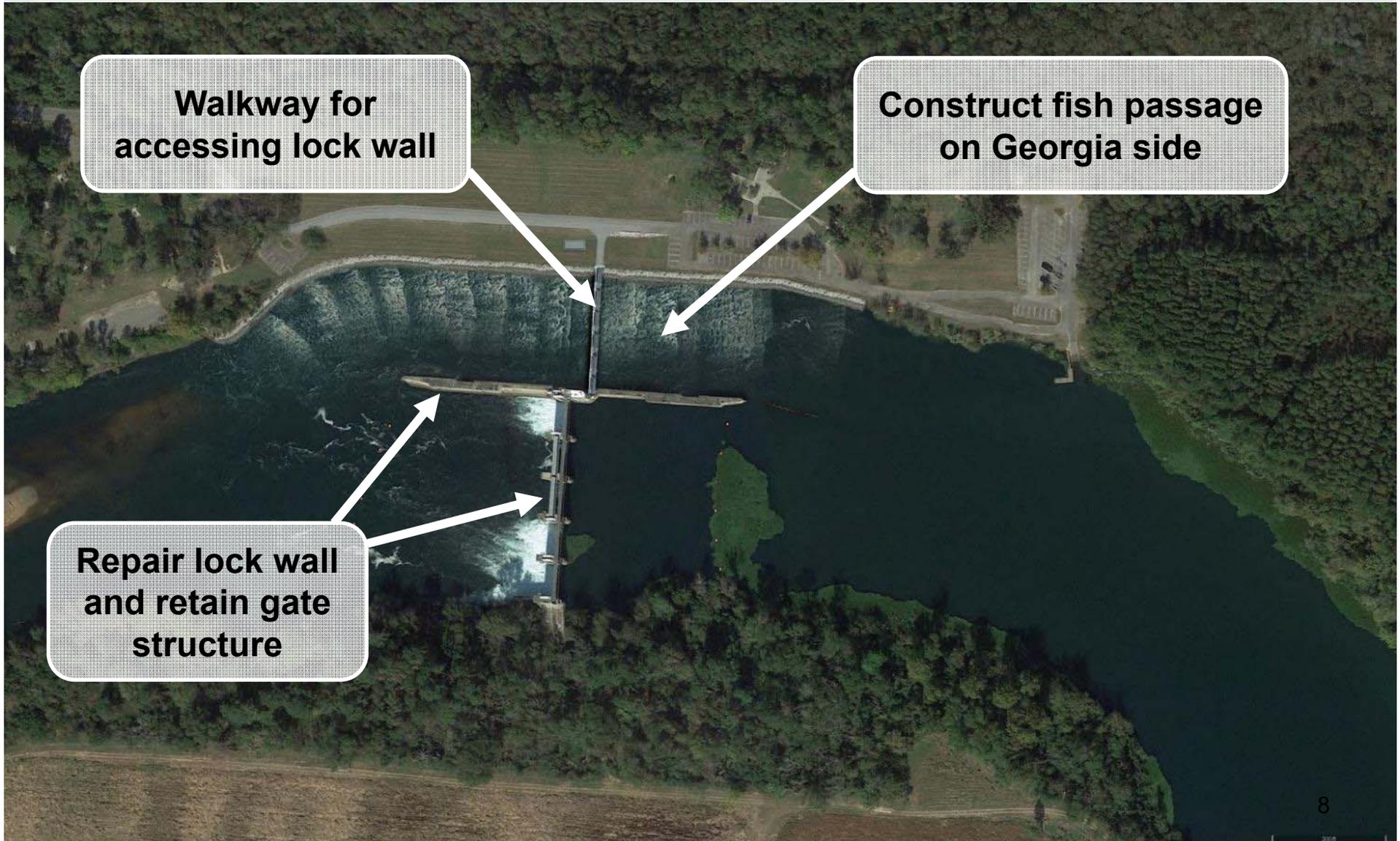




Retain Dam with GA Side Fish Passage



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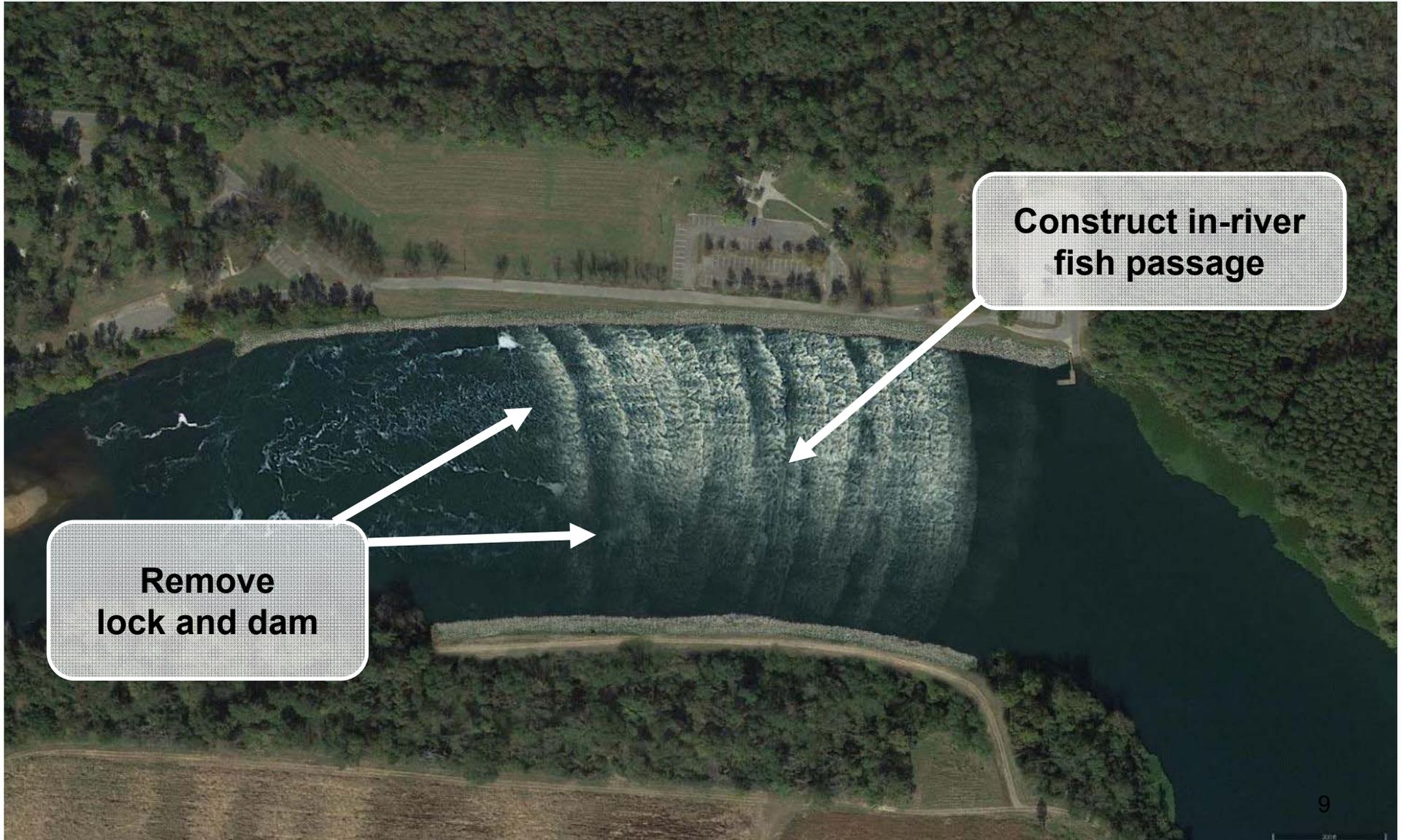




Fixed Weir



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**Remove
lock and dam**

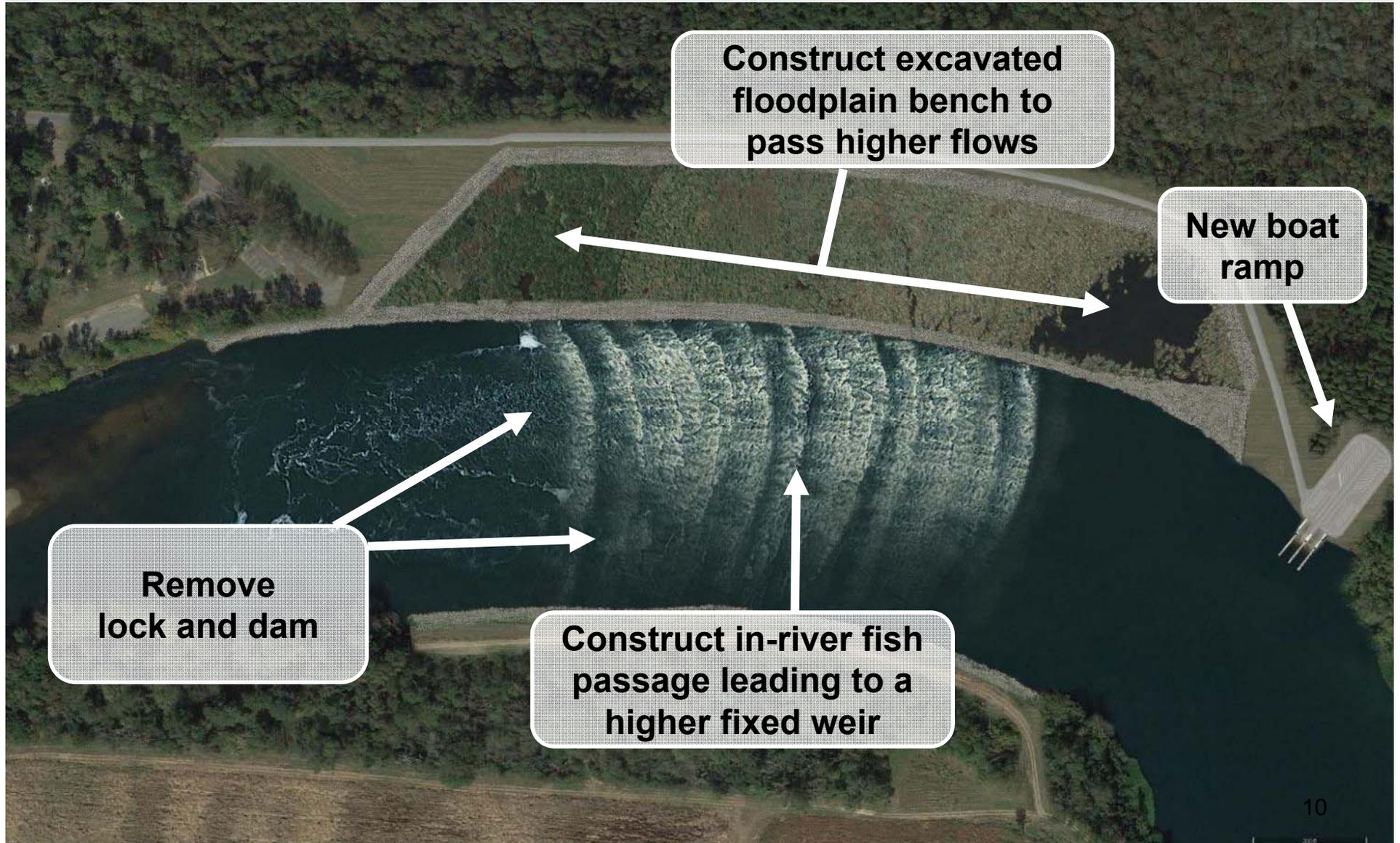
**Construct in-river
fish passage**



Fixed Weir with Floodplain Bench



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**Remove
lock and dam**

**Construct excavated
floodplain bench to
pass higher flows**

**New boat
ramp**

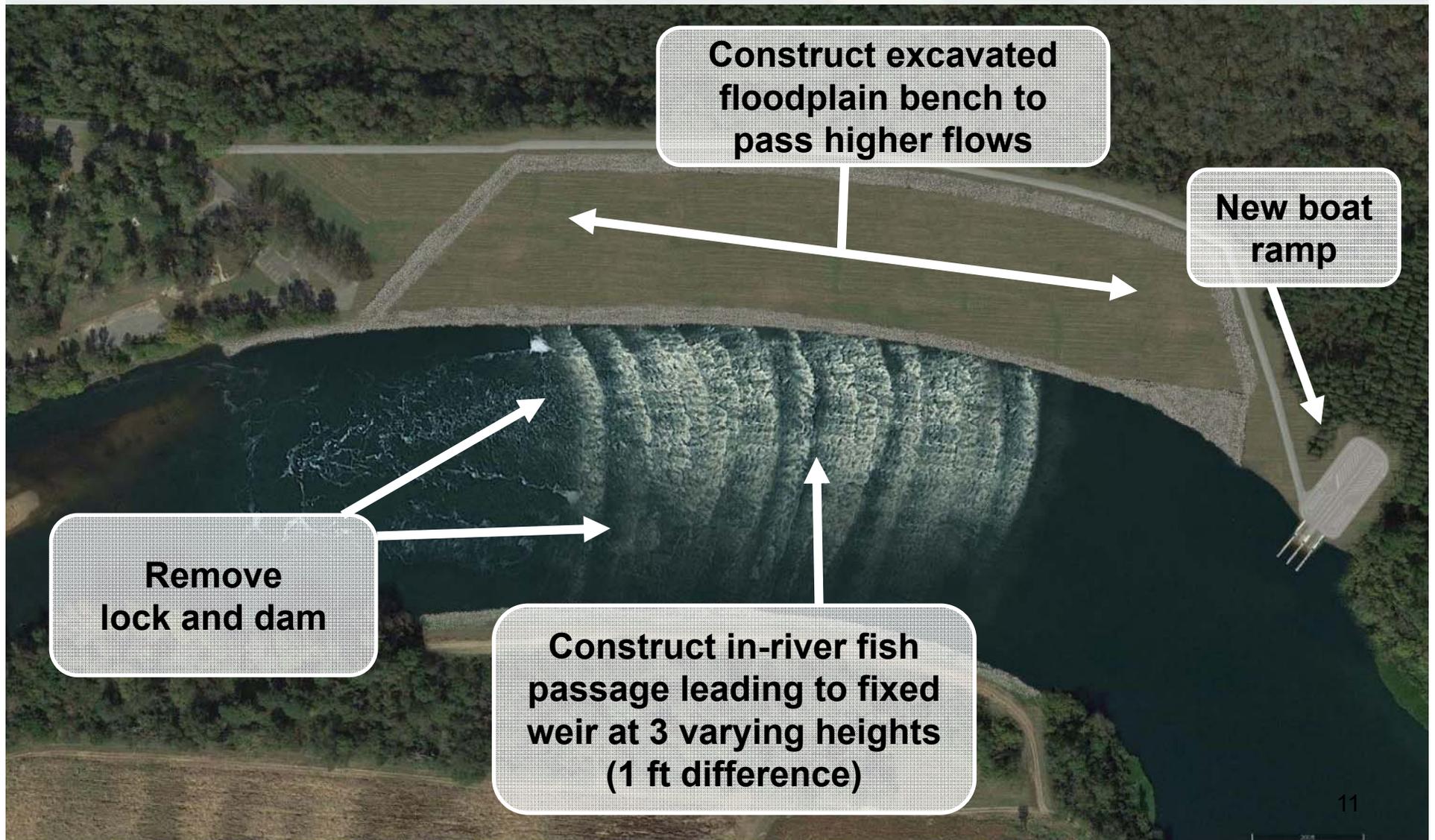
**Construct in-river fish
passage leading to a
higher fixed weir**



Fixed Weir with Dry Floodplain



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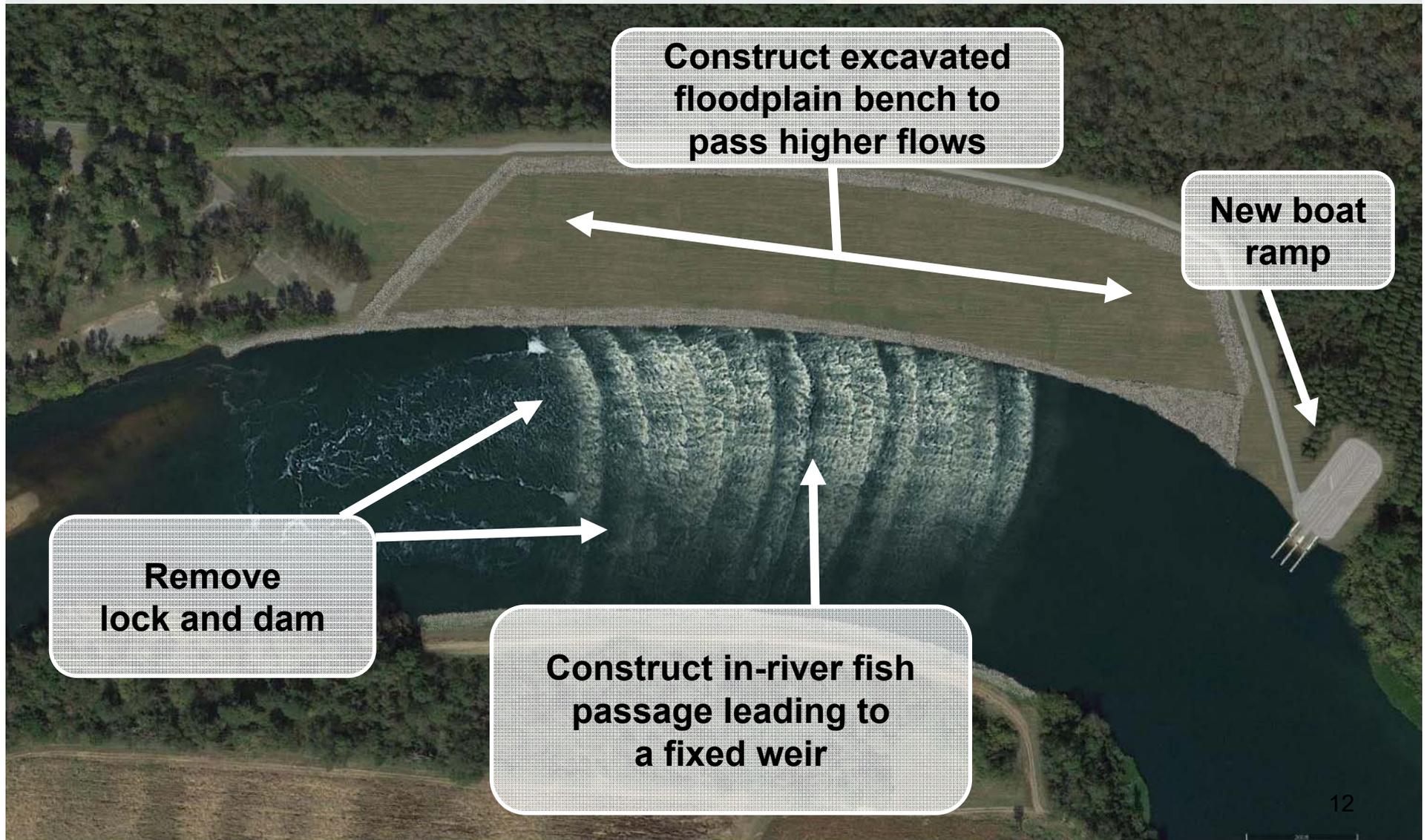




Recommended Plan: Fixed Weir with Dry Floodplain



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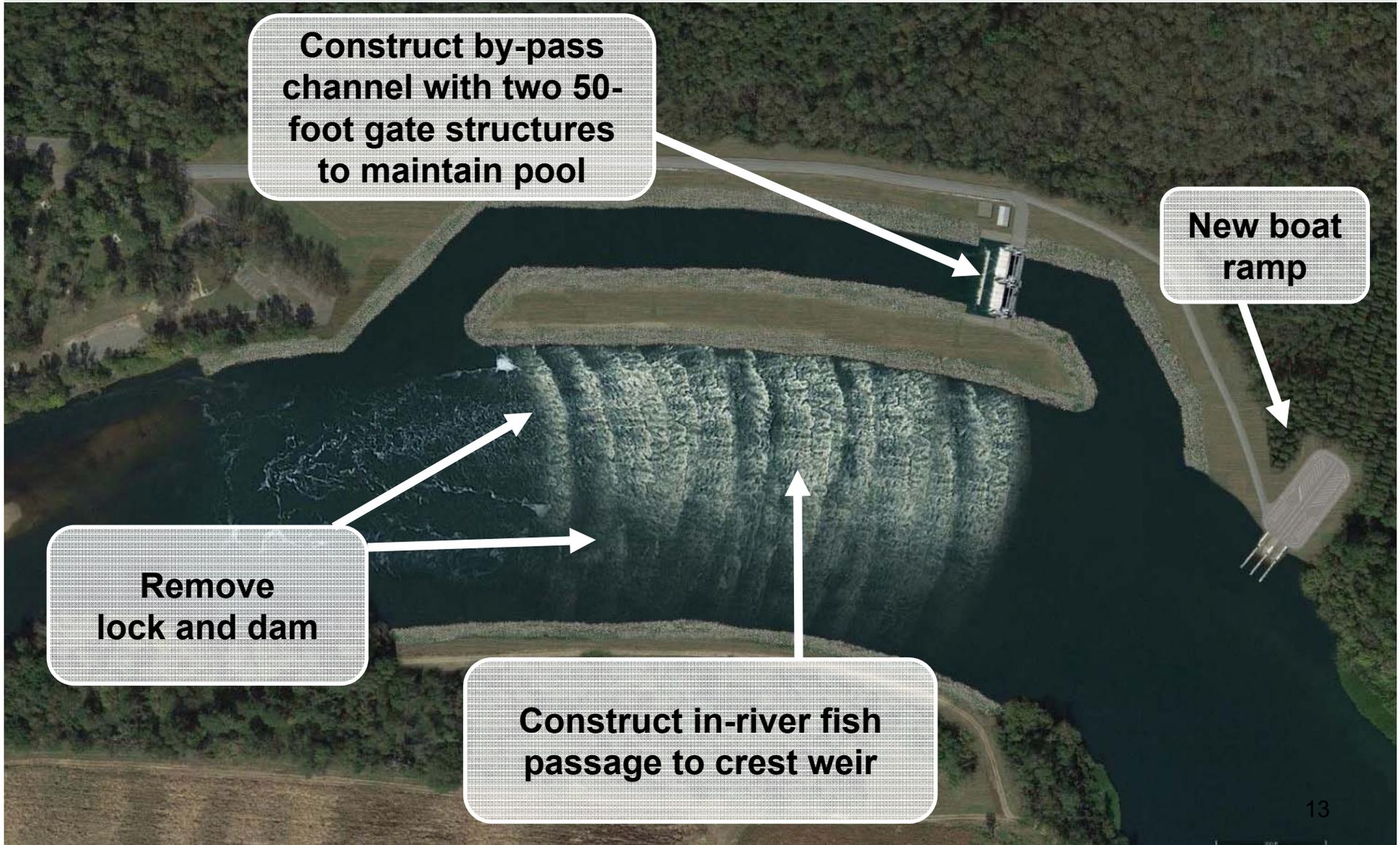




Gated Bypass Channel



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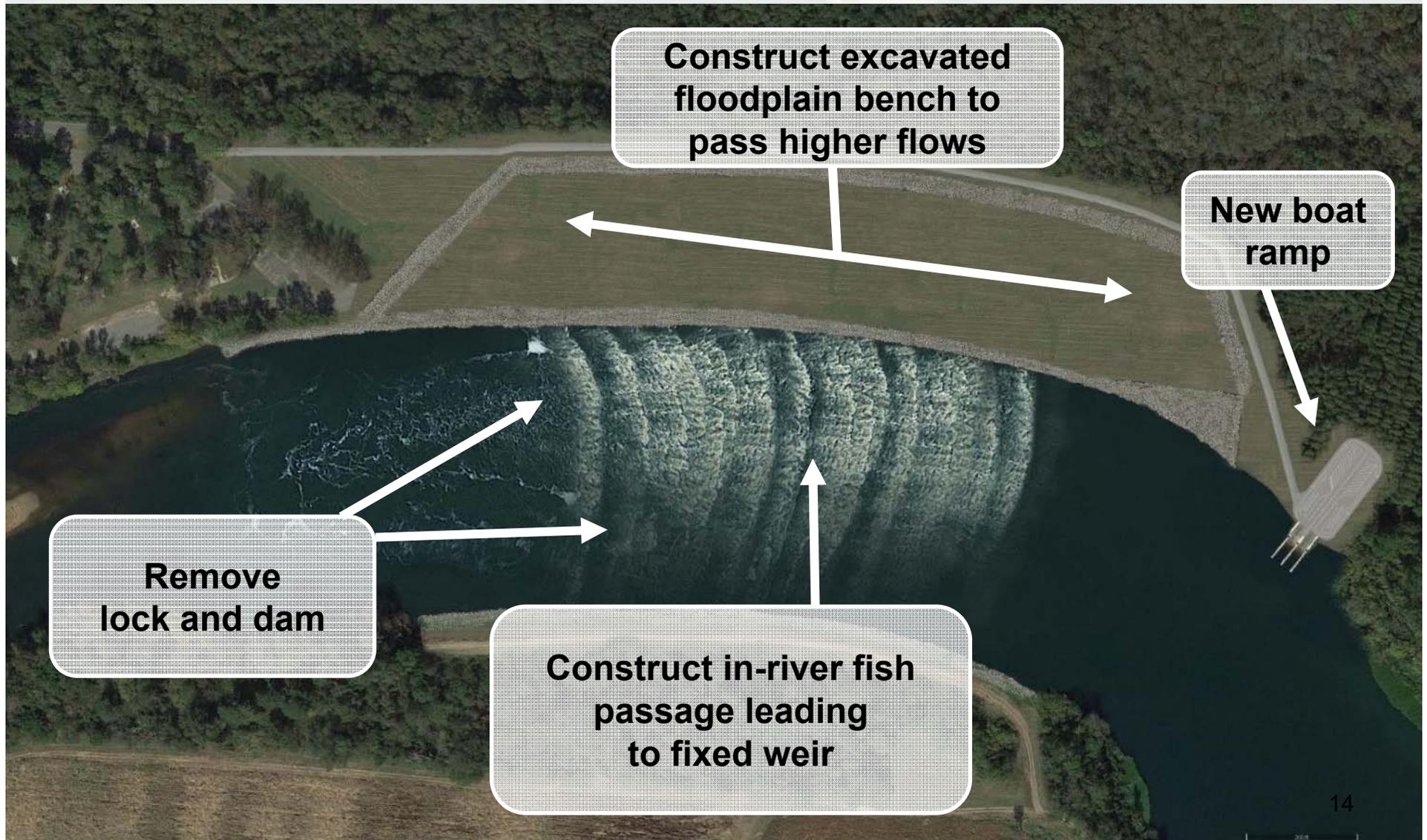




Recommended Plan: Fixed Weir with Dry Floodplain



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Evaluation Criteria Rules



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Required Criteria

- Pass Fish
- Cost
- Navigation
- Water Supply
- Recreation

Evaluation Scale

+1 = positive

0 = neutral

-1 = negative (not viable)

Constraints:

- Flooding
- Time



Evaluation Criteria



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Fish Passage	{	+1 = Successful migration, no delay 0 = Successful migration, delay possible -1 = Inability to pass fish
Cost	{	+1 = Most cost effective fish passage 0 = Less than the SHEP Plan -1 = Greater than the SHEP Plan
Navigation	{	+1 = 3.5 feet of water or more, great boating 0 = Between 2 and 3.5 feet of water -1 = Less than 2 feet of water, no boating
Water Supply	{	+1 = 0-1 water users impacted 0 = 2-4 water users impacted -1 = 5 or more water users impacted
Recreation	{	+1 = Less than 10 docks adversely impacted (<2 ft water) 0 = Between 10 and 19 docks adversely impacted -1 = Greater than or equal to 20 docks adversely impacted
Land Inundation	{	+1 = 0 Acres 0 = Parcels need flowage easements -1 = Impact to structures or 100 year flood plain



Evaluation Matrix



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Alternative	Fish Passage	Navigation	Recreation	Water Supply	Additional Flowage Easements Required	Total Score	Average Annualized Cost Project	Initial Investment Cost	Average Annualized Cost O&M and Major Rehab
No Action Alternative (NAA): SHEP Plan A 112-115 ft NGVD29							\$2,808,000	\$62,734,742	\$960,000
1-1: Retain Dam with GA Fish Passage 112-115 ft NGVD29	0	1	1	1	1	4	\$2,716,000	\$61,483,069	\$950,000
2-3: Fixed Crest Weir 107 ft NGVD29	1	1	-1	0	1	2	\$1,870,000	\$62,296,732	\$35,000
2-6a: Fixed Crest Weir with Floodplain Bench 110 ft NGVD29	1	1	0	1	0	3	\$2,166,000	\$72,000,854	\$45,000
2-6b: Lowered fixed crest weir with dry floodplain bench 107 ft NGVD29	1	1	-1	0	1	2	\$2,032,000	\$67,464,767	\$45,000
2-6c: Lowered fixed crest weir with dry floodplain bench 108 ft NGVD29	1	1	-1	1	1	3	\$2,039,000	\$67,694,767	\$45,000
2-6d: Lowered fixed crest weir with dry floodplain bench 109 ft NGVD29	1	1	0	1	1	4	\$2,077,000	\$68,977,176	\$45,000
2-8: Fixed Crest Weir with Gated Bypass Channel 109 ft NGVD29	0	1	1	1	1	4	\$4,880,000	\$144,923,397	\$611,000



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Total Costs Comparison



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Alternative	Total Life Cost
2012 SHEP Plan	\$142,560,000
GA Side Fish Passage (1-1)	\$140,021,000
Fixed Weir (2-3)	\$65,636,000
Fixed Weir w/ Floodplain (2-6a)	\$76,313,000
Low Fixed Weir w/ Dry Floodplain (2-6b)	\$71,800,000
Fixed Weir w/ Dry Floodplain (2-6c)	\$72,028,000
Fixed Weir w/ Dry Floodplain (2-6d)	\$73,308,000
Gated Bypass Channel (2-8)	\$190,129,000



Recommended Plan



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Fixed Weir with floodplain



- Highest weir without land inundation
- Most cost effective

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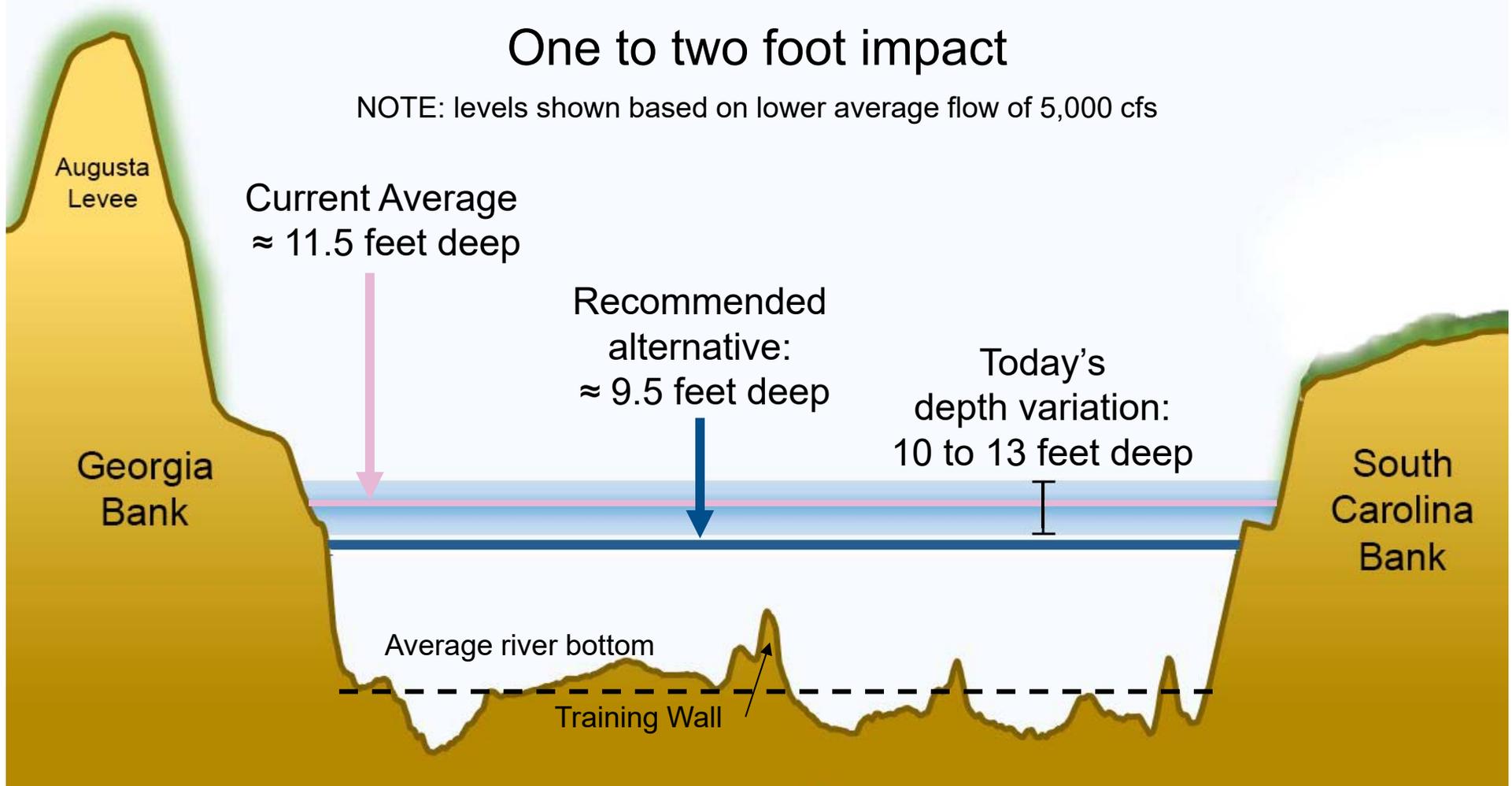
Impacts: 5th Street Bridge

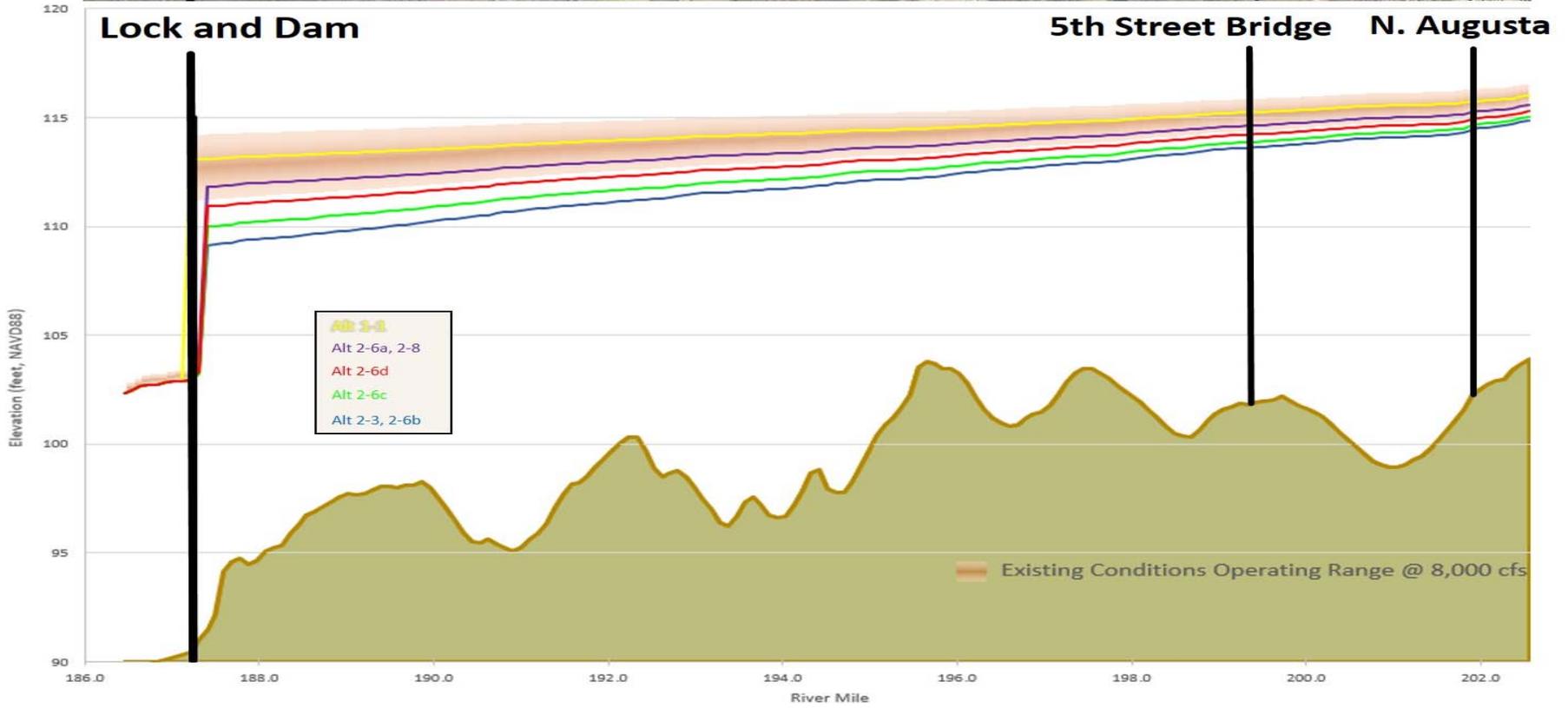


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One to two foot impact

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



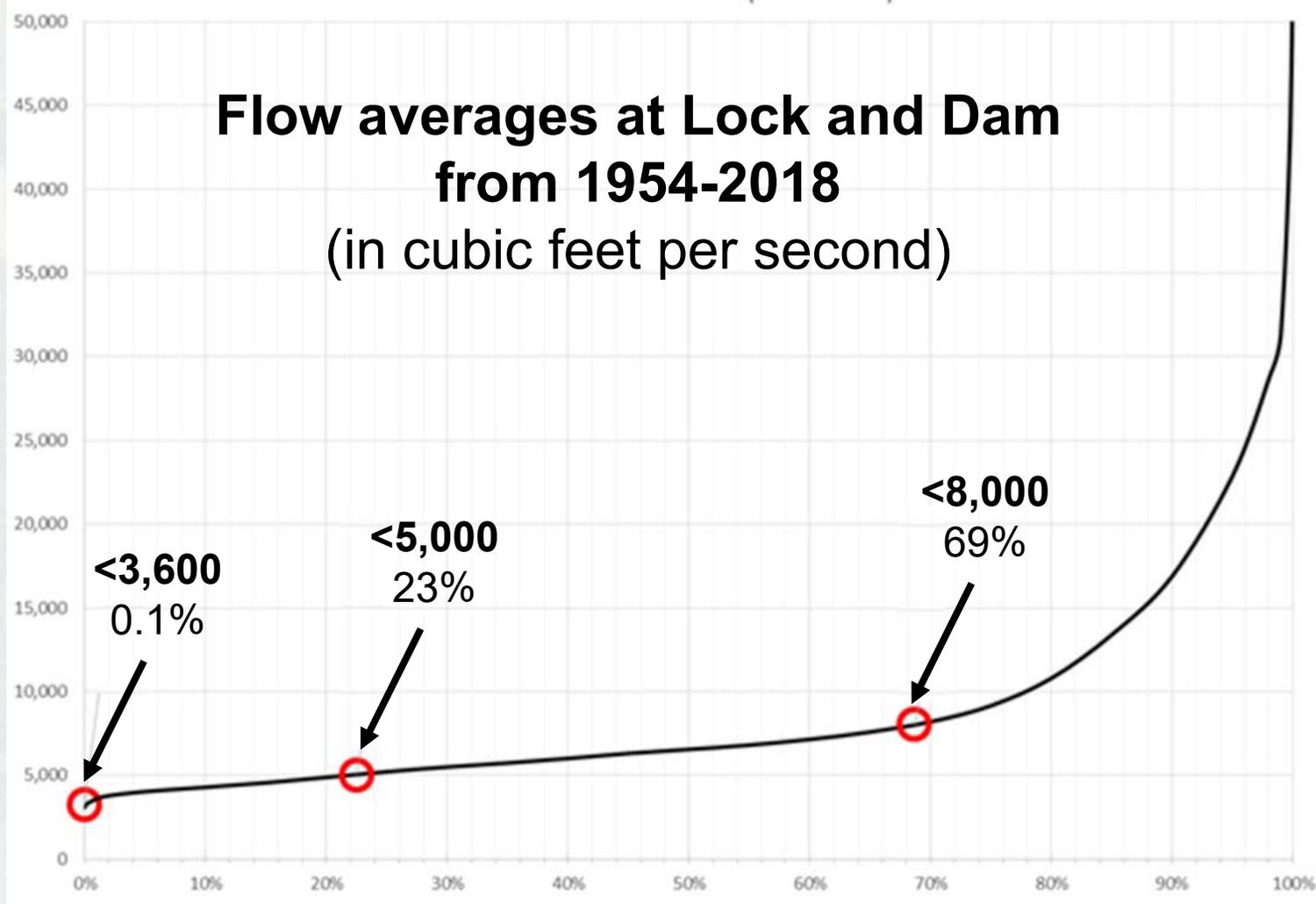




Based on Flow Volumes



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Shoreline Mapping Tool



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Map Satellite

US Army Corps of Engineers

ALTERNATIVE PROFILES

- 5000 CFS Existing
- 5000 CFS ALT-1-1
- 5000 CFS ALT-2-3
- 5000 CFS ALT-2-6A
- 5000 CFS ALT-2-6B
- 5000 CFS ALT-2-6C
- 5000 CFS ALT-2-6D (Recommended)
- 5000 CFS ALT-2-8
- Pile Training Wall

Show Docks Hide Docks
See All

SELECT DOCK OF INTEREST

Show Disclaimer

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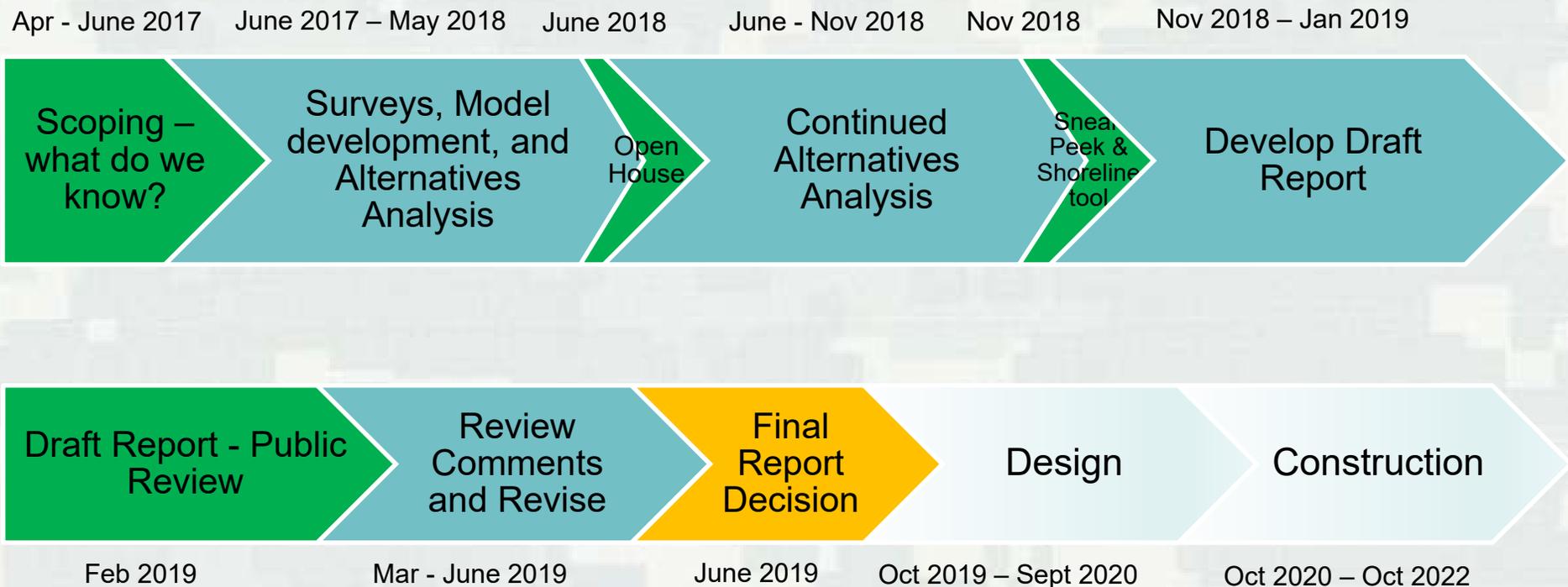
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Post Authorization Analysis Schedule



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- Public
- USACE Analysis
- SAD Decision



Public Information



TRONG

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

The screenshot shows the US Army Corps of Engineers website for the SHEP Fish Passage project. The page header includes the Corps of Engineers logo, the text 'US Army Corps of Engineers', and a search bar. Below the header is a navigation menu with links for HOME, ABOUT, BUSINESS WITH US, MISSIONS, LOCATIONS, CAREERS, MEDIA, LIBRARY, and CONTACT. The main content area features a large image of the lock and dam with the title 'SHEP Fish Passage at New Savannah Bluff Lock and Dam'. Below the image are three columns of text and three buttons. The 'Overview' column contains three paragraphs of text. The 'Important Links' column contains three buttons: 'Getting to a Solution', 'Historic Overview', and 'Stay Informed, Get Involved'.

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US Army Corps of Engineers

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SHEP Fish Passage at New Savannah Bluff Lock and Dam

Overview

The New Savannah Bluff Lock and Dam, operated and maintained by U.S. Army Corps of Engineers, opened in the late 1930s to aid in river navigation between Augusta and the deep water ocean port in Savannah. Commercial vessel navigation ceased in 1979. Since the cessation of commercial navigation, the lock and dam also ceased to deliver on its Congressionally-authorized purpose. As a result, funding for the project dwindled. The facility was moved into caretaker status in 1985 when federal funding was further curtailed. Today, the project incidentally provides a pool of water upstream of the lock and dam. This pool is used as water supply for municipal and industrial uses in Augusta, Georgia, and North Augusta, South Carolina. The pool also enables recreation and waterfront development. The project funding received on an annual basis allows for minimal maintenance of the lock and dam by the Corps' Savannah District. As a result, the lock and dam continues to deteriorate significantly.

The Savannah Harbor Expansion Project (SHEP), which lies 180 miles downstream of the New Savannah Bluff Lock and Dam, is currently under construction. In compliance with the Endangered Species Act, the Corps is required to reduce or mitigate impacts to sturgeon, a species of fish found in the harbor and listed as endangered under the Endangered Species Act. No mitigation solution could be implemented within the project's footprint. Therefore, the Corps was required to examine other opportunities to reduce impacts.

Removal of the New Savannah Bluff Lock and Dam would benefit sturgeon by providing access to historic spawning areas. This would satisfy the requirement to mitigate for SHEP's impacts on sturgeon. Click here for additional history on finding a fish passage solution.

Important Links

Getting to a Solution

Historic Overview

Stay Informed, Get Involved

<https://go.usa.gov/xQRwS>



Questions



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