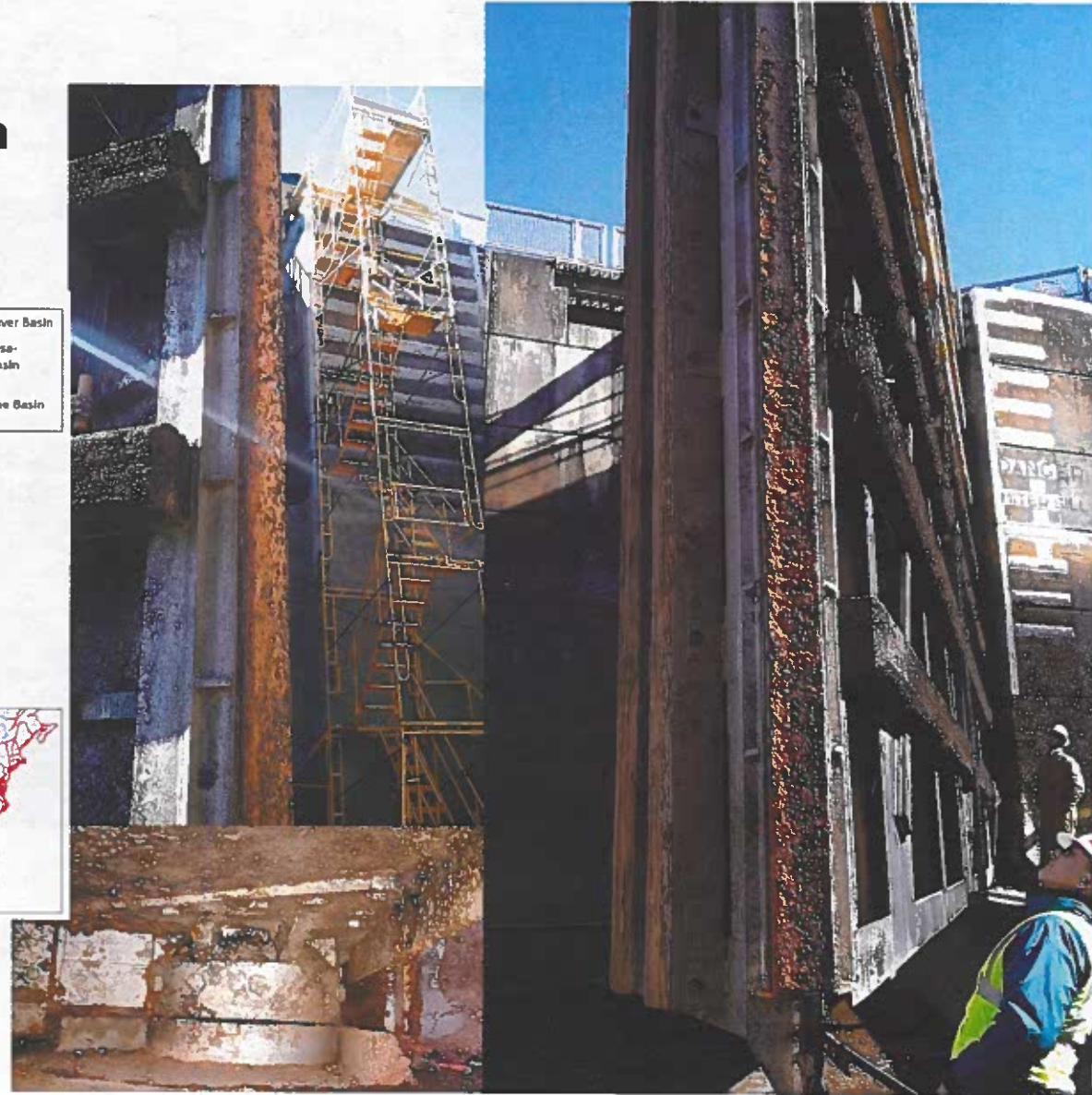
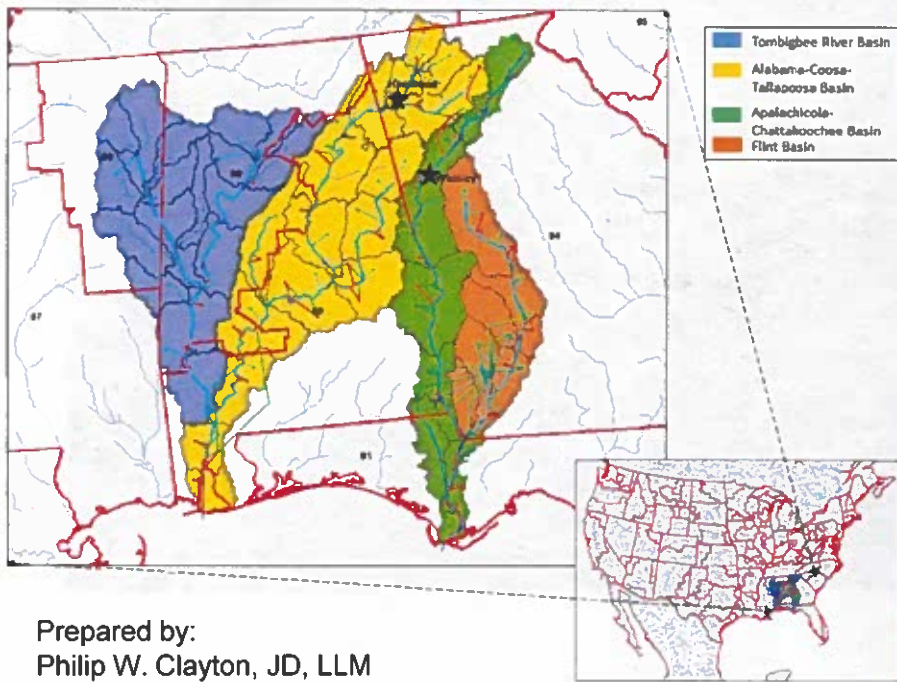


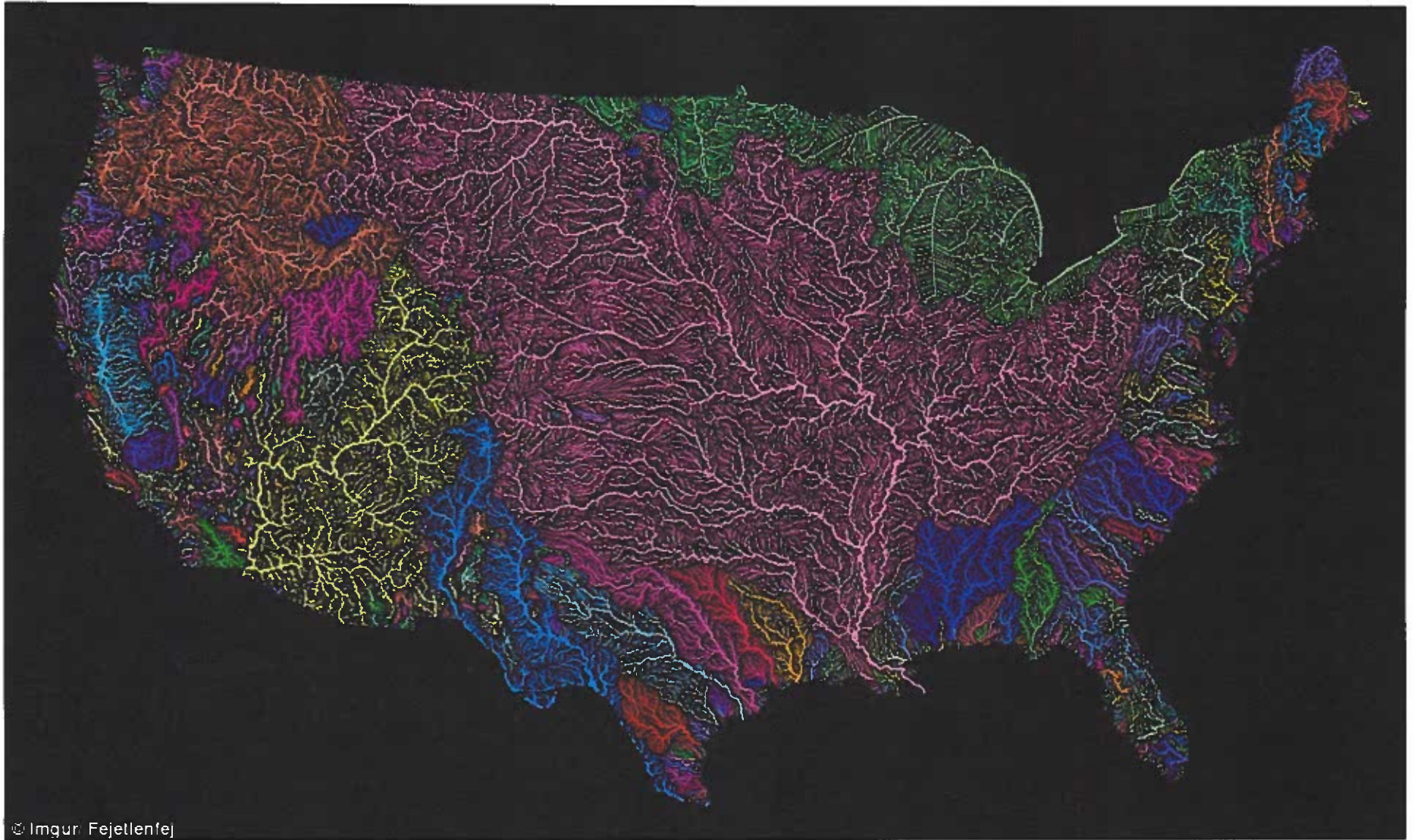
# Apalachicola Chattahoochee Flint River Basin (ACF)

**Economic Significance to SE  
Alabama, SW Georgia, and North  
Florida**



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# Waters of the United States

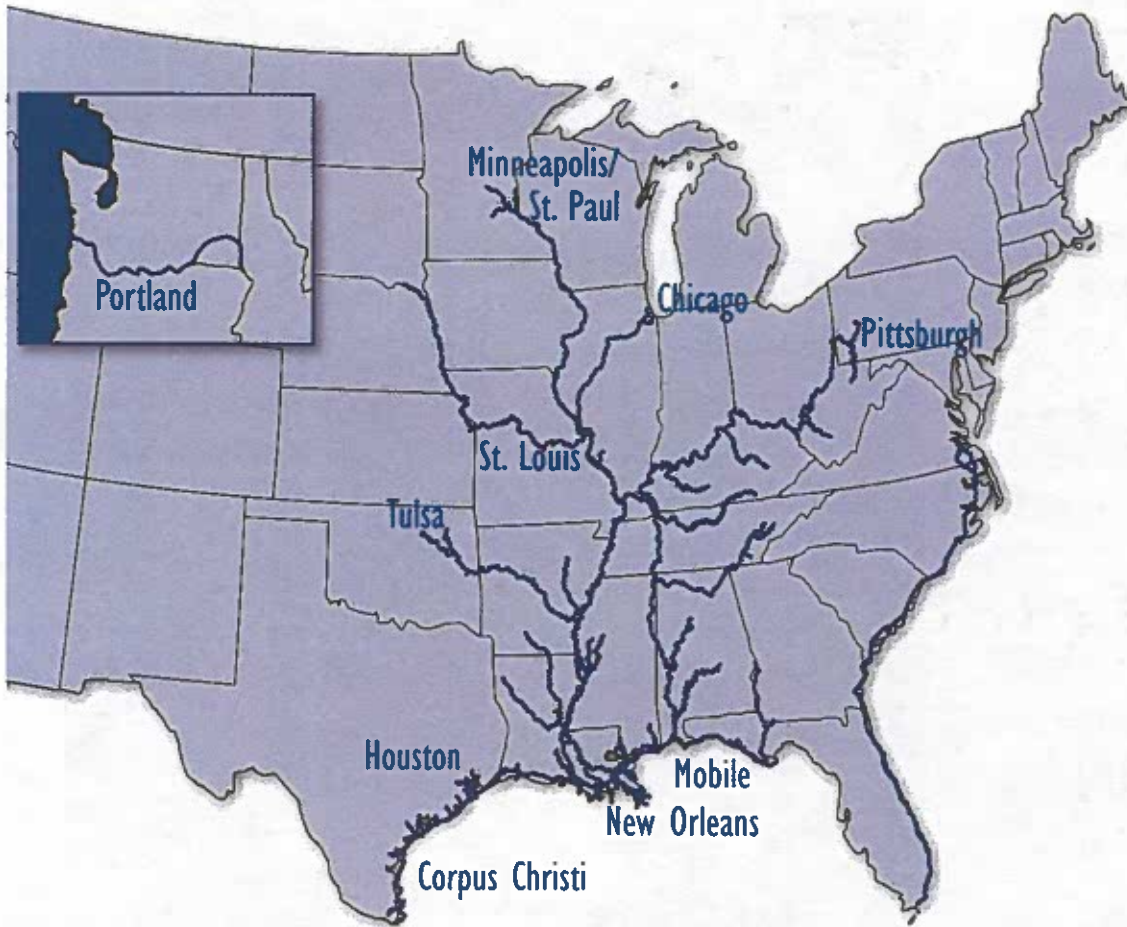


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<http://www.dailymail.co.uk/sciencetech/article-3860062/The-veins-America-Stunning-map-shows-river-basin-US.html>

America's Inland Waterways:

## An "Inland Marine Highway" for Freight Transportation



Our "inland marine highways" move commerce to and from 38 states throughout the nation's heartland and Pacific Northwest, serve industrial and agricultural centers, and facilitate imports and exports at gateway ports on the Gulf Coast.

- 12,000 miles of commercially navigable channels
- 192 lock sites



NATIONAL WATERWAYS  
FOUNDATION



# ACF Facts and Figures<sup>1</sup>

- ACF Drainage basis is 20,355 sq miles
- Avg daily water withdrawal is 1,645 Mgal/d.
  - 65% surface water
  - 35% ground water
  - 75% of withdrawals support agriculture
- ACF economic influence in the middle Chattahoochee, lower Chattahoochee, lower Flint, and Apalachicola sections:
  - Six Florida counties
  - Eleven Georgia counties
  - Six Alabama counties

# ACF Project Information

## Navigation

- ~\$6.2 B in lock infrastructure sitting unused and unmaintained since 2003
- 290 Miles of authorized channel from Gulf Intracoastal Waterway (GIWW) to Columbus, GA
- Dredging of Apalachicola segment (FL) last occurred in 2001
- US Army Corps of Engineers (USACE) will not allocate resources per the OMB utilization algorithm (**maintenance requirements X commercial utilization = annual funding**)
- USACE annual appropriation for all Civil Works is **~~\$8.7 Billion** (FY2022)
- USACE 2020 estimate of **\$94.2 mil** to repair all 3 locks and spillways (1.6% of the annual budget)
- Estimate includes \$43 mil to repair spillway gates (**Storage and Flows**)
- With locks repaired the system is **65-70% reliable** for commercial nav most years (Nov – Jul)
- Limited dredging may be required at Mile Marks 77.8, 40.5, and 36.5 (**~< 9 miles of channel**)
- Limited dredging, even to 7.5 feet, in the shallow areas improves reliability to **90-95%**
- \$10 mil annually needed to keep project at acceptable level of maintenance (utilization will allow funding through the annual civil works appropriation)

# ACF Project Information

## Economics<sup>2</sup>

- The tri-state region bounding the lower ACF is an economically depressed area
- **Poverty rates in the region are nearly twice that of the national average**
- The economic potential of commercial navigation are significant to the region
- Greatly reduces the wear and tear on existing road infrastructure due to heavy loads
- Current Industry and Water Supply – tristate \$7.1B and 39,000 jobs
- Current Tourism – tristate \$662M and 5,100 jobs
  
- Commercial Navigation – tristate<sup>3</sup>
  - ▶ Currently **27 potential users** identified – includes National Defense, renewable energy (wood pellets and nuclear)
  - ▶ Est. 80 to 416 barge shipments per year (**23,296 truck equivalent loads**)
  - ▶ Potential for over 3.33 million tons of cargo annually
  
  - ▶ At 2.1 mil tons, potential for over 29,400 new jobs and \$1.99 billion in total economic impact over 10 years
  
  - ▶ Yields an additional \$2.4 billion in tax revenue over ten years (18:1 ROI for government investment of \$136 million for repairs)

## Rate of Return and Net Increase in Total Economic Impact of Lower ACF Basin Restoration Under Alternative Assumptions

Growth Assumption	Tons	Direct Employment Impact (JOBS)	Direct Output Impact	Output Total Impact	Net Increase in Output	Average Annual Rate of Return (Present Value)	Return for \$1 in Spending (Present Value)
27.5%	446,250	6,266	\$235m	\$423m	\$91m	0%	\$1.0
50%	525,000	7,372	\$277m	\$498m	\$166m	4%	\$2.0
75%	612,500	8,600	\$323m	\$581m	\$249m	18%	\$3.0
100%	700,000	9,829	\$269m	\$664m	\$322m	24%	\$4.0
500%	2,100,000	29,487	\$738m	\$1,994m	\$1,700m	178%	\$18

Source: Deravi, M. Keivan, PhD. Economic Research Services, Inc., August 2021, The Economic Impact of Restoration of Infrastructure on the Lower Apalachicola-Chattahoochee-Flint River Basin.



# FUTURE LOCKAGE INFORMATION

## REQUEST FOR LOCKAGES

- Floodgate for New Orleans District, Catfish Bayou  
→ Steward Machine, Bainbridge (Woodruff/Seminole Lock)
- Bauxite from Port St. Joe to Columbia State Dock (Eufaula State Dock at future date)  
→ Material Manufacturing Corp (Woodruff/Seminole Lock, GW Andrews Lock, and WF George Lock)

## POTENTIAL LOCKAGES

- Farley Nuclear  
→ Reactor parts due to size and weight – 75' x 250' barge
- Mobile District  
→ Spillway gate for Tenn-Tom Waterway

# TAINTER GATE – STENNIS LOCK & DAM



US Army Corps  
of Engineers



# ACF RIVER BASIN - LOCK OPERATIONS AND STATUS



US Army Corps of Engineers



## JIM WOODRUFF

- Operating at LOS 6, lockages by appointment only
- Operator on duty Monday-Thursday from 0600-1600 for maintenance activities
- Recreational lockage by appointment & if coincides with maintenance activities when lock operators on site
- Movement LS upper gate anchor arm/pin. Limited use of gate. 41 ft limit on width.
- Lock has a substantial backlog of unfunded maintenance

## GEORGE W. ANDREWS

- A cast steel gimbal mount that allows the hydraulic cylinder to move while operating the valve sheered apart from corrosion and fatigue cracks
- Cracks were found in the gimbal mounts of the other 3 valve cylinders
- Lock will remain closed to navigation until repairs are affected and preserve remaining existing machinery for emergency lockage of Government assets
- Lock has a substantial backlog of unfunded maintenance
- Estimated repair costs are \$300K/cylinder. Not funded in current or future budgets.

## WALTER F. GEORGE

- Currently closed to commercial and recreational traffic due to identified deficiencies on the lower miter gates
- Estimated budget to repair is \$3.5 million. Not funded in current or future budgets.
- Will remain closed to navigation until repairs are affected
- Lock has substantial backlog of unfunded maintenance

## IMTS LEVELS OF SERVICE

### Definition of Levels of Service

Level	Title	Description
1	Full Service 24/7/365	24 hours/day, 7 days/week, 365 days/year
2	Reduced Service - Two Shifts Per Day	16-20 hours/day, 7 days/week, 365 days/year (two shifts of either 8 or 10 hrs)
3	Limited Service - Single Shift	8-12 hours per day, 7 days/week, 365 days/year
4	Scheduled Service - Set times per day	Lockages (including recreation craft) at set times per day. For example 8 am and 4 pm.
5	Weekends & Holidays	Lockages on weekends and holidays only
6	Service by Appointment	Commercial lockages by appointment

### Guide to Levels of Service

Level	Title	Guideline for Range of Lock Operation Data
1	Full 24/7/365	More than 1,000 commercial lockages per year
2	Two Shifts Per Day	Between 500 to 1,000 commercial lockages per year.
3	Single Shift	Less than 500 commercial lockages per year or greater than 1,000 recreational lockages per year
4	Set times per day	Limited commercial and/or substantial recreational traffic, with a more consistent pattern of lockage
5	Weekends & Holidays	Little to no commercial lockages with significant recreational lockages (500 or more per year) with no consistent pattern.
6	Appointment	Limited commercial traffic with no consistent pattern of lockage.



Broken Spillway Components



# ISSUES FOR THE LOCKS AND WATERWAY

## WOODRUFF/SEMINOLE LOCK

- Upper Landside Anchorage Pin – Movement in anchorage assembly/limits ability to swing gate
- Only one fill valve and one drain valve operational

## GW ANDREWS LOCK

- Chamber silted in at lower gates limits opening width the 42 ft.
- Chamber silted in at upper gates limits draft of vessel when chamber lowered

## WF GEORGE LOCK

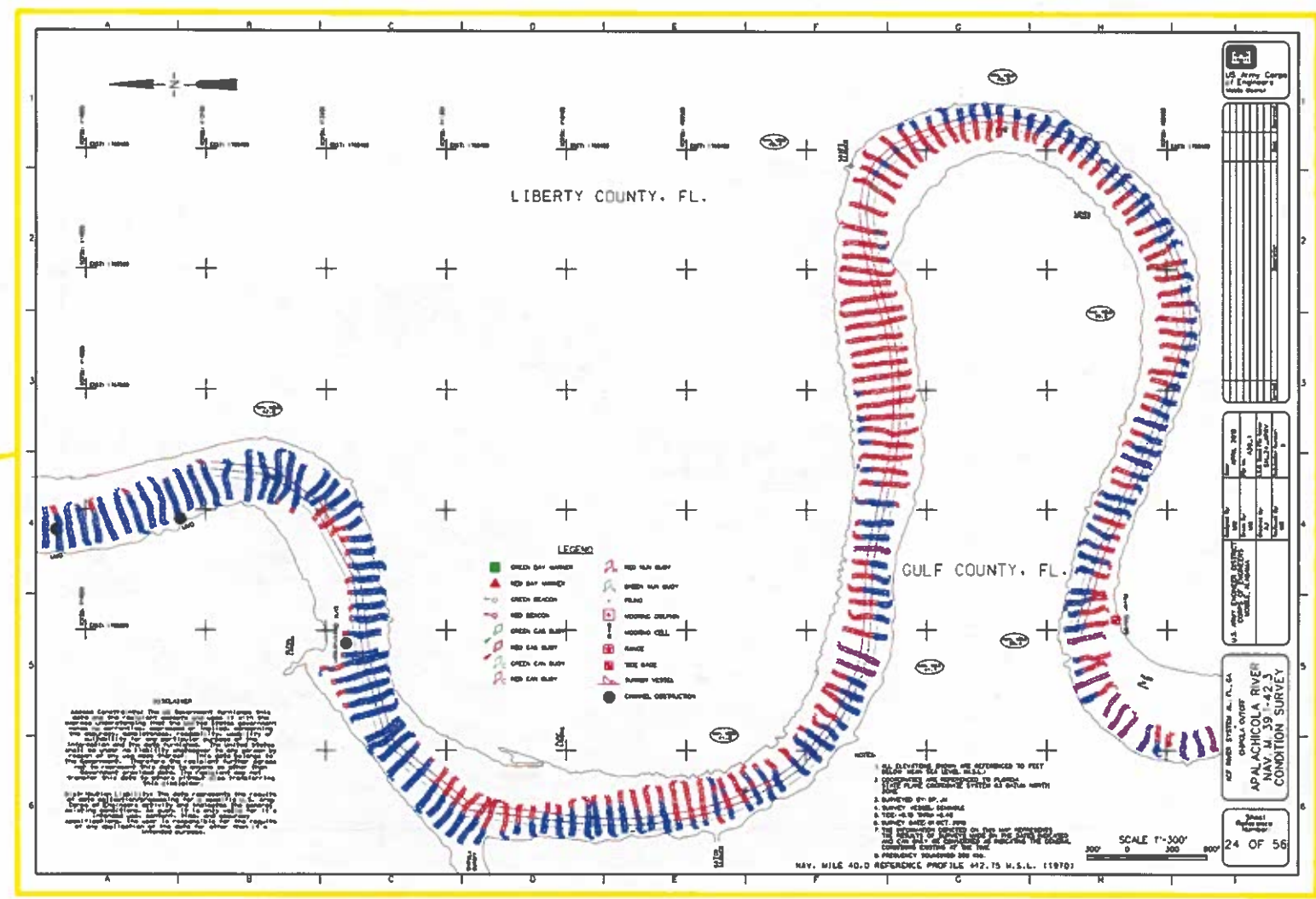
- Major concerns with swinging lower gate – banging noises and difficulty getting proper miter
- High lift lock (84') safety concerns with locking vessels. Engineering support required for each lockage

## WATERWAY

- Apalachicola River - Mile 4.5 shifting channel hard to raise lake level, Blountstown, Chipola, & Wewahitchka
- Chattahoochee River – Lower approach to GW Andrews shoaling

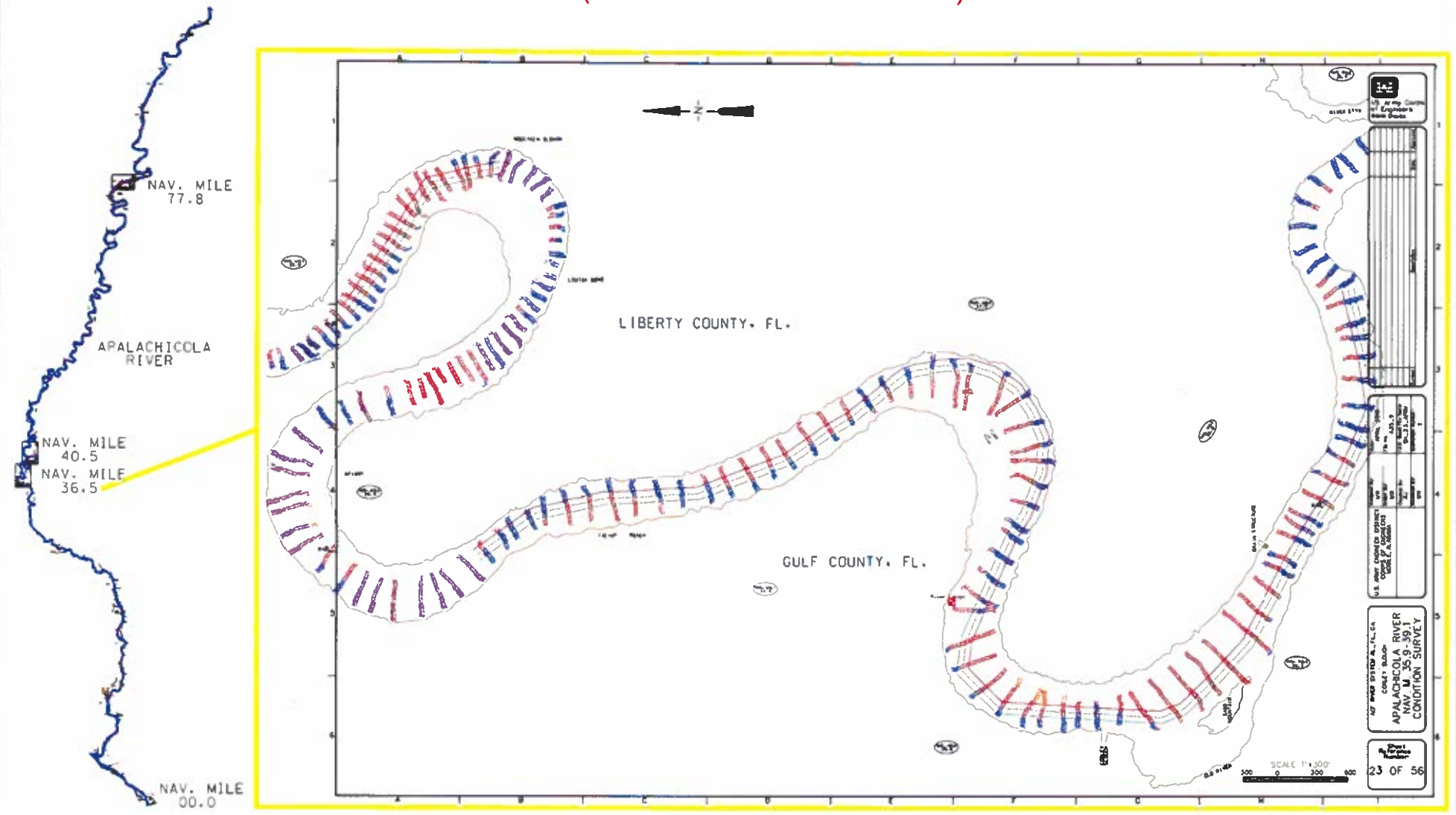


# Shallow location on the lower Apalachicola (MM 40.5) (Red indicates shallow water)

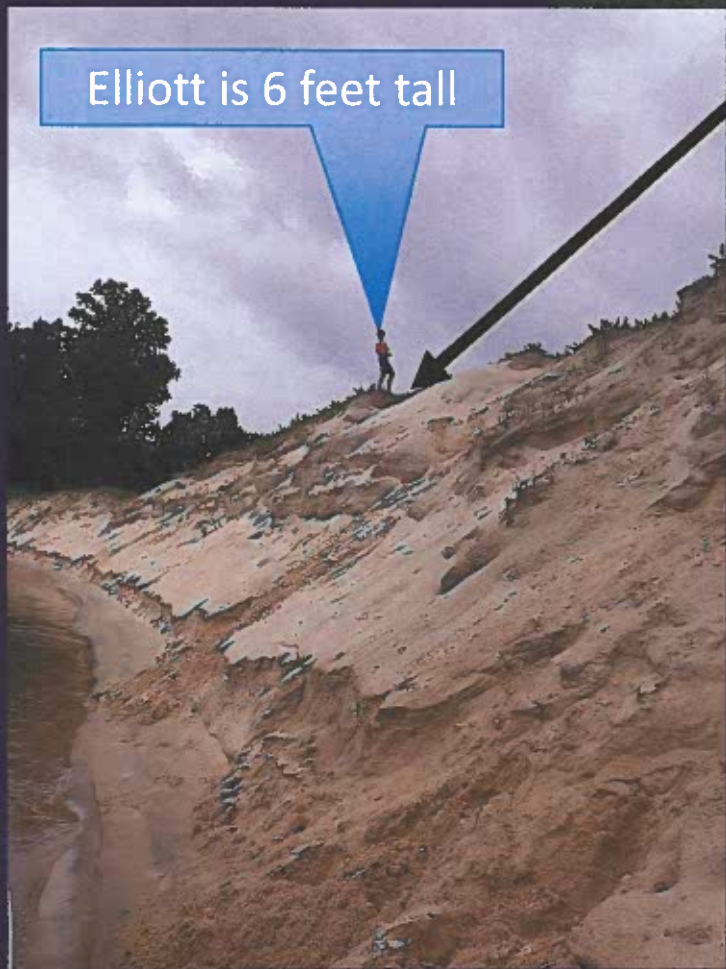


# Shallow location on the lower Apalachicola (MM 36.5)

(Red indicates shallow water)



# Environmental Restoration Opportunity



Elliott is 6 feet tall

Corley Slough

Apalachicola River

## Corley Slough "Sand Mountain"

Apalachicola River

Apalachicola River

Migrama Cut

Migrama Cut

- Site 39 (Liberty Co) is 14.8 acres and 300,000 cu yds
- Site 40 (Gulf Co) is 9.7 acres and 500,000 cu yds
- Mineral Manufacturing Co is willing to remove the materials and contribute funds for site restoration
- One of many possible locations (Within bank disposal areas) for material removal and restoration of native trees and grasses

Advantages of Inland Waterways Transport:

## Easing Rail and Highway Congestion in Our Communities

Units to Carry  
1,750 Short Tons of Dry Cargo



1 barge



16 rail cars



70 trucks



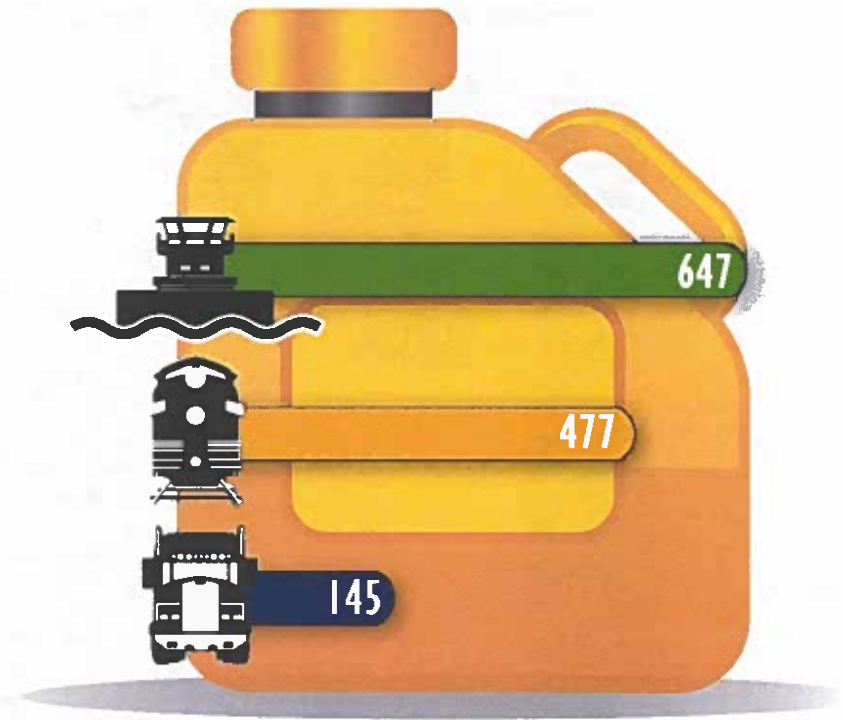
One loaded covered hopper barge carries 58,333 bushels of wheat, enough to make almost 2.5 million loaves of bread.

Advantages of Inland Waterways Transport:

## Moving Freight Efficiently Throughout America

**Transporting freight by water is also the most energy-efficient choice.**

Barges can move one ton of cargo 647 miles per gallon of fuel. A rail car would move the same ton of cargo 477 miles, and a truck only 145 miles.

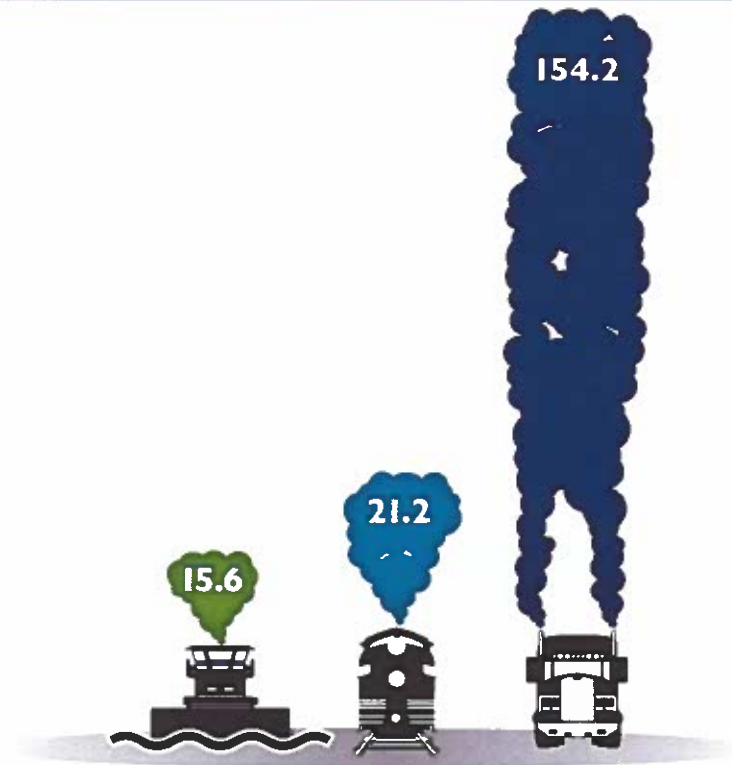


Ton-miles Traveled per Gallon of Fuel

## The Greener Way to Move America's Cargoes

**Barges have the smallest carbon footprint among other transportation modes.**

To move an identical amount of cargo by rail generates 30% more carbon dioxide than by barge, and 10 times more emissions by trucks than by barge.



Tons of CO<sub>2</sub> per Million Ton-miles

# ACF Conclusions and Recommendation

- Full potential for over 3.33 million tons of cargo annually
- A \$136 million repair investment yields over 29,400 jobs and \$1.99 billion in total economic output over 10 years.<sup>4</sup>
- Environmental representatives need to be a part of the conversation as to whether dredging is even needed and how dredging might be accomplished
- Shallow draft vessels are part of the solution
- The ACF is a crucial infrastructure asset to the nation and should be adequately maintained for ecological concerns, health and safety of downstream residences, industrial users, water supply, recreation, and commercial navigation

## References:

1. Fuller, Wynne, 2016, Feb 18, Presentation, Chief of Operations Division, Mobile District, US Army Corps of Engineers.
2. Mixon, Phillip PhD., Associate Prof of Economics, 2020, January 7, Economic Impact of the Mid/Lower Apalachicola-Chattahoochee-Flint Waterway.
3. Clayton, Philip JD, LLM, 2020, Aug 20, ACF Customer Utilization Survey, unpublished, Eufaula Barbour Co. Chamber of Commerce.
4. Deravi, M. Keivan, PhD. Economic Research Services, Inc., August 2021, The Economic Impact of Restoration of Infrastructure on the Lower Apalachicola-Chattahoochee-Flint River Basin.

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