

Our Inland Waterways

Opportunities & Challenges

Mark J. Carr
AEP River Operations



Inland Waterways Variety

- ◆ Upper Miss, IL, Ohio, Tenn, Ark, Ten-Tom
 - Dam pools support navigation, locks allow passage
- ◆ Lower Miss, Missouri
 - Open passage, no locks & dams, more dependant on rain/snow
- ◆ Gulf E & W, Atlantic Intracoastal Canals
 - Largely open passage, some locks, requires heavy dredging

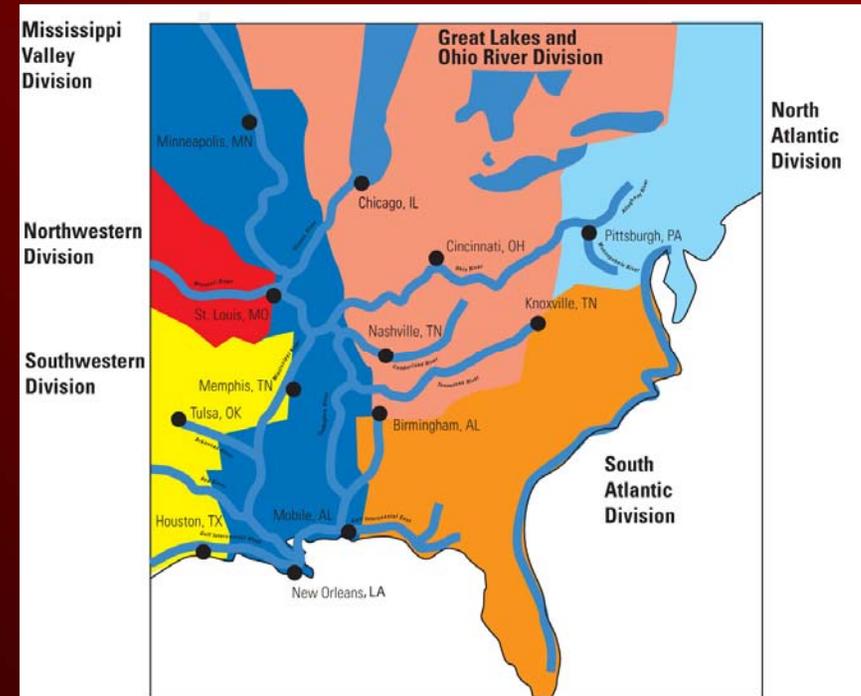


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Corps Divisions

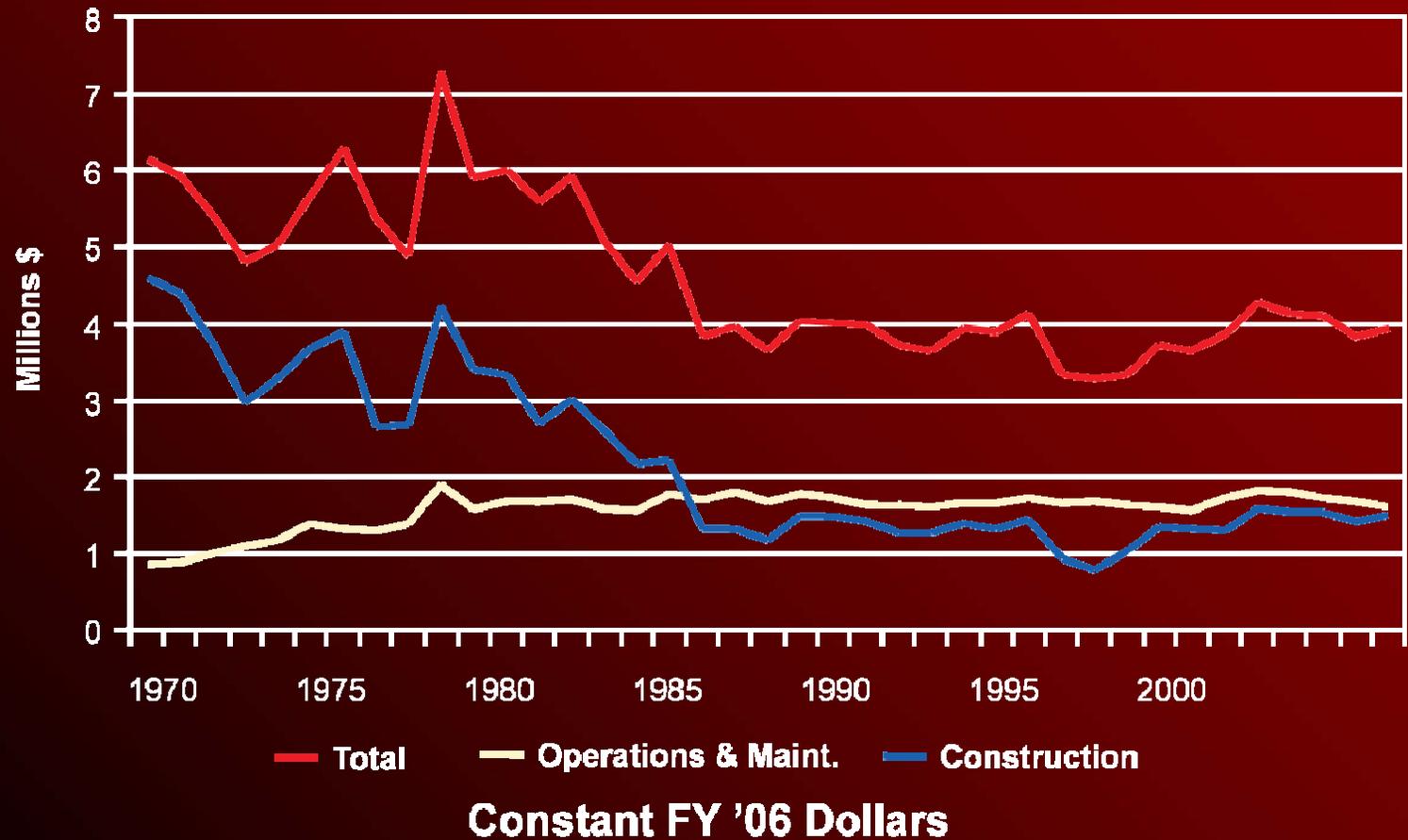
- ◆ Great Lakes & Ohio
 - Ohio River valley & Chicago
- ◆ Mississippi Valley
 - Mississippi, Illinois & some tributaries
- ◆ Southwestern
 - GIWW West
- ◆ South Atlantic
 - GIWW East & Atlantic Intracoastal
- ◆ Subdivided into 27 Districts supporting infrastructure



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Infrastructure Investments



Chronic underinvestment since 1970

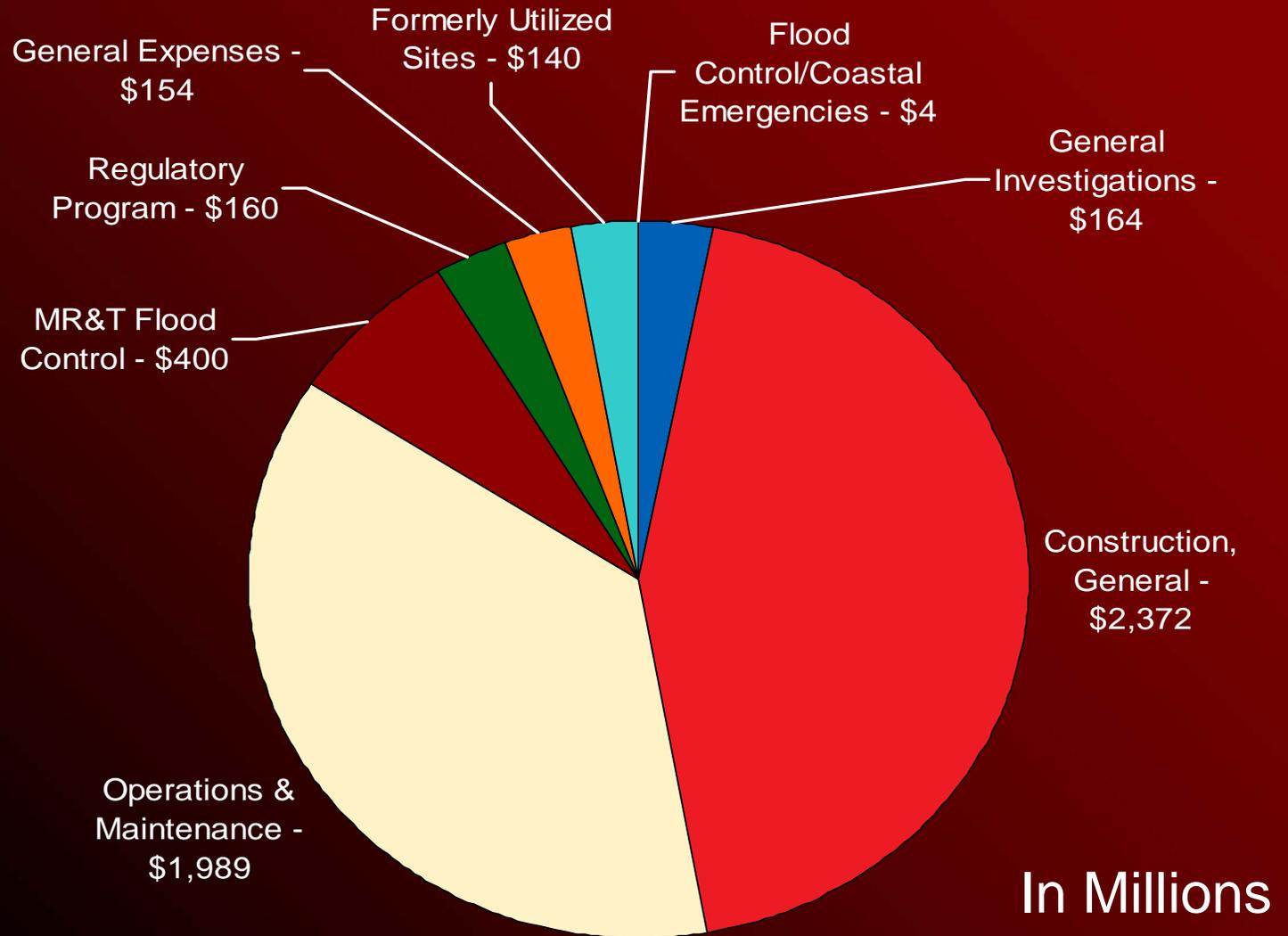
Slide 4

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Recreate from scratch

Chris Amelung, 9/4/2007

Corps Civil Works Budget



In Millions

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Commerce by River System

River System	Million Tons
OHR & tributaries (has 4-20mt tributaries)	270
LMR & tributaries	200
UMR	181
Gulf Canals E & W	123
ILR	45
Atlantic Canal	2



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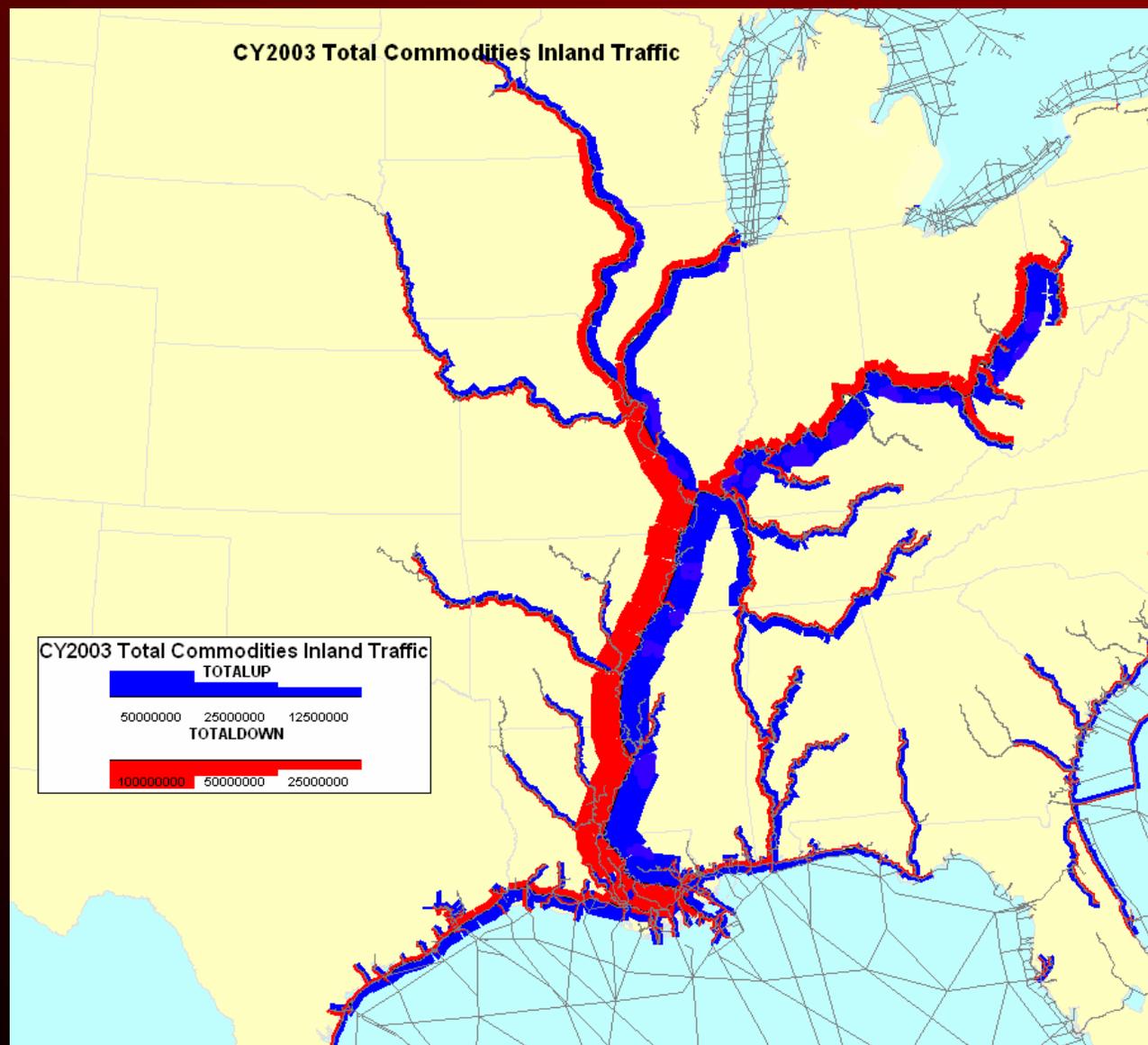
Commodities on the Rivers

Commodity	Million Tons
Coal	178
Agriculture	152
Petroleum	144
Crude Materials	125
Chemicals	55
Mfg Goods	43
Equipment	2
Other	1
	645

Blue Tons Up, Red Tons Down



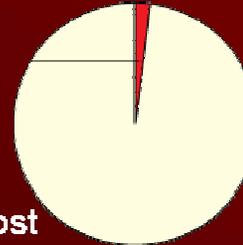
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Mode Comparisons

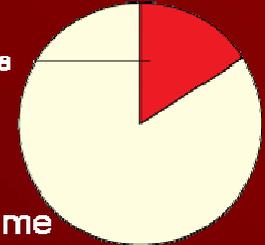
Barge Industry
vs.
Entire U.S. Shipping Industry

2% Barge



U.S. Shipping Cost

16% Barge



U.S. Shipping Volume

For 2% of cost, barges move 16% of intercity freight

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Get art from steve and modify to lose background

Chris Amelung, 9/4/2007

Mode Comparisons



Equivalent Units



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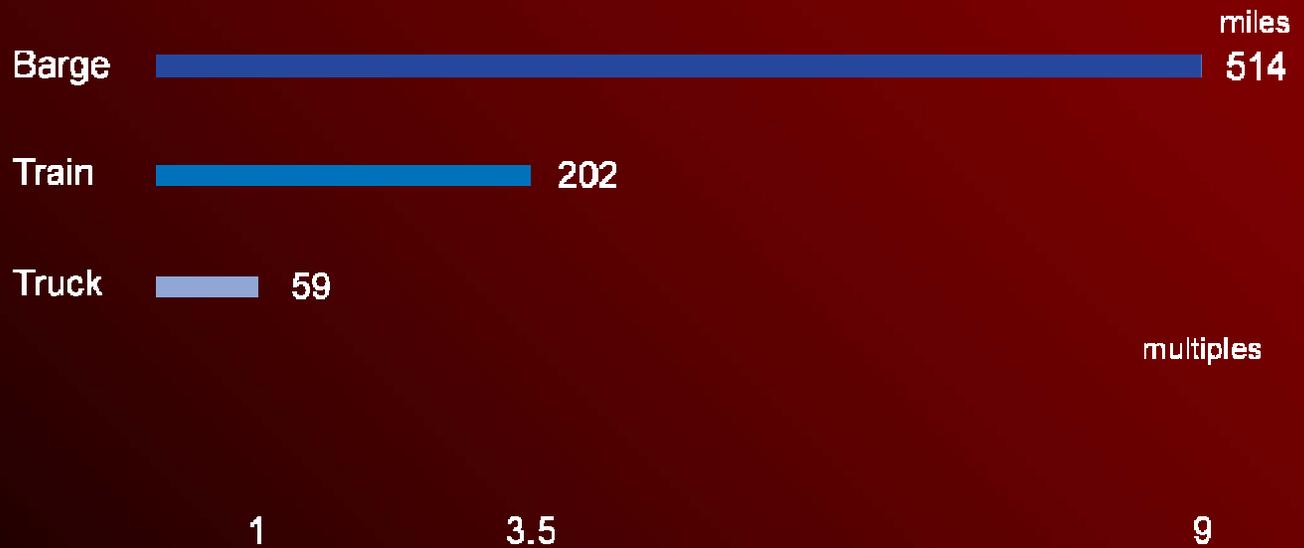
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Chris Amelung, 9/4/2007

Mode Comparisons

Ton Miles per Gallon by Mode



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cha4

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Chris Amelung, 9/4/2007

Corps Faces Challenges

- ◆ Slow pace of lock & dam improvements
- ◆ Using Inland Waterways Trust Fund
- ◆ Low Administration budget requests
- ◆ More unscheduled lock closures



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Aging Infrastructure

117 out of 240 locks
are over 50 years old



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Goal is Modern Lock & Dams



Inland Waterways Trust Fund

- ◆ User fees of 20¢ per gallon of fuel
 - Funds 50% of new construction & major rehabilitation
 - Balance \$283.3mm
 - Was \$334.7mm a year ago



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Top Trust Fund Projects

Construction

McAlpine L&D, Ohio River

Olmstead L&D, Ohio River

Inner Harbor Canal Lock, NOLA

Monongahela River L&D 2,3 & 4

Marmet L&D, Kanawha River

Kentucky L&D Tennessee River

Major Rehabilitation

L&D 11, Upper Mississippi River

L&D 19, Upper Mississippi River

L&D 27, Upper Mississippi River



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Trust Fund Spending

- ◆ 2007 Proposed \$394mm construction and major rehabilitation spending
 - \$197mm from Trust Fund
- ◆ Shows Administration is beginning to understand benefits of inland waterways



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O&M Priorities

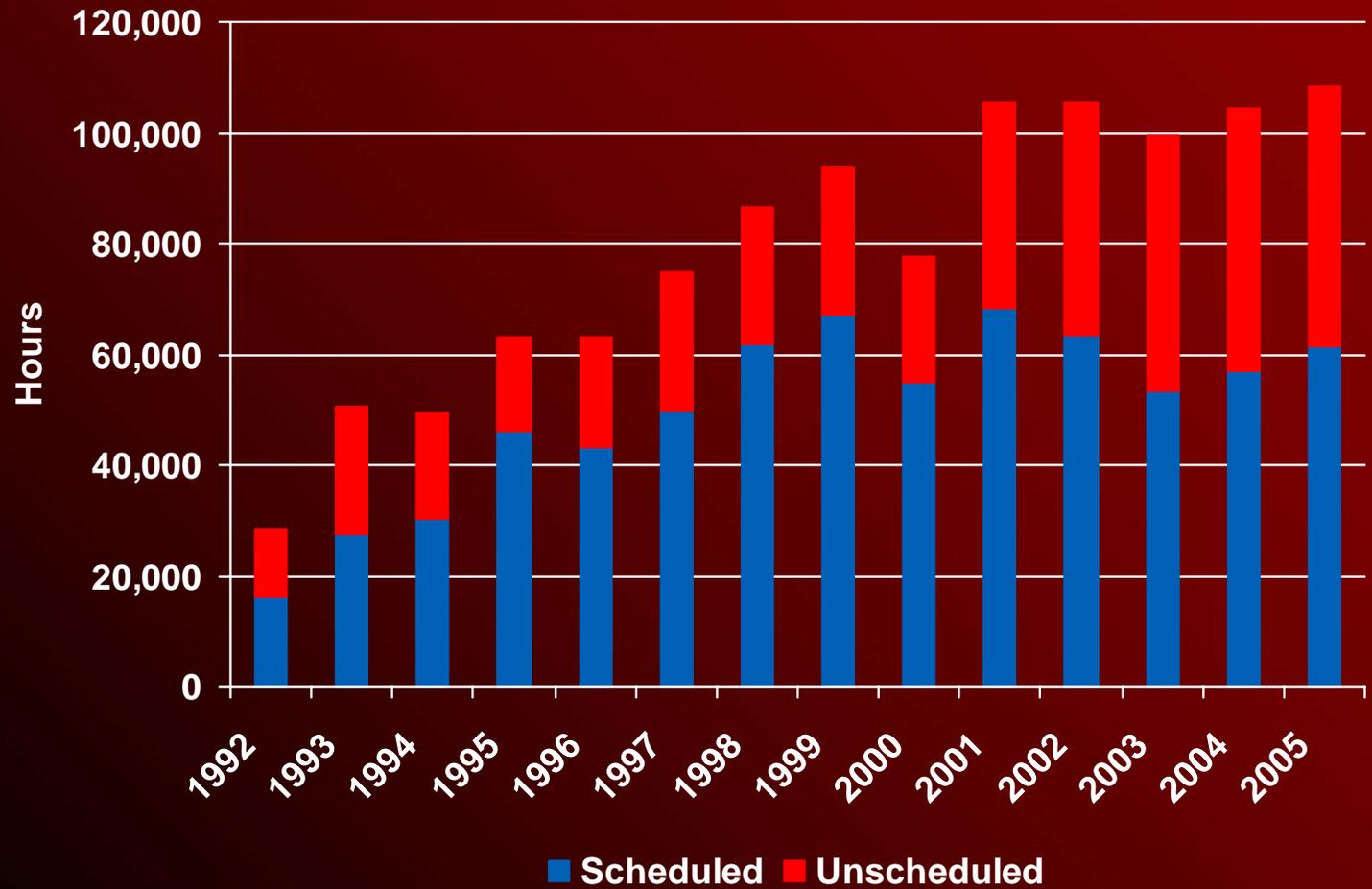
- ◆ Waterways Council, Inc. Priorities Task Force
- ◆ Risk & Reliability Workshops
 - 2005: Cincinnati, St. Louis, NOLA, Tampa
 - 2007: Cincinnati, Quad Cities, NOLA



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Locks Out 10% Annually



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Major Projects Underway



Project sites need efficient funding

- New Construction
- Major Rehabilitation

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cha1

Make yellow dots different color and make both yellow and red bigger.

Chris Amelung, 9/4/2007

2004 McAlpine Lock Closure

- ◆ 10 day repair severed navigation on Ohio River
- ◆ \$2.7mm cost to towing companies
- ◆ \$1.1mm cost to shippers
- ◆ \$665,000 lost sales



Inland Industry Advocacy

- ◆ Waterways Council, Inc.
 - National organization influencing policy on inland navigation and funding
 - Shipper & carrier leadership
 - Organized lobbying effort
 - Aggressive media & communications campaign



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WCI & the Corps Budget

- ◆ WCI seeks funding increases:
 - Construction to \$300mm annual minimum
 - Additional O&M of \$100mm

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Educating the Public

RiverWorks Discovery:
Show the public how the inland marine carriers, shippers, infrastructure, ports, and other maritime assets improve lives and communities.



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Going to Market

Entertain and educate kids & families:
over 35,000 folks to-date

Materials developed by education,
design and illustration professionals

Focus on ages 7-12

- ◆ Old enough to understand
- ◆ Highly curious
- ◆ Take materials to share with family

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Activities for Kids

Scavenger Hunt on the Mississippi River

Training for Wheelhouse Captains

Find the answers to these 20 questions. Be sure to stay with the grown-ups that you know. Be safe and have fun!

1. Find or ask the name of your river location.
2. Find out the date, day, and time.
3. What color is the river?
4. What does the river smell like?
5. What sounds do you hear at the river?
6. Find some boats and barges.
7. Find a full barge and an empty barge.
8. Find some river navigation markers. What do they mean?
9. Find signs of the river rising and falling.
10. How does the air temperature feel?
11. What do the sky and clouds look like?
12. What is the wind direction and how strong?
13. Find signs of recent precipitation.
14. Find some trees.
15. Find some wildflowers.
16. Find some insects or signs of insects.
17. Find some birds or signs of birds.
18. Find some fish or signs of fish.
19. Find a piece of litter and dispose of it properly.
20. Find out what the grown-ups who are with you observed at the river.

0 to 5 points = Your river training is off to a good start!
 6 to 9 points = You are a making many good river observations!
 10 points = You are half-way to being a Wheelhouse Captain!
 11 to 15 points = You have awesome powers of river observation!
 16 to 19 points = You are a kind of a river expert!
 20 points = Great job! Imagine being a Wheelhouse Captain!

RiverWorks™
www.RiverWorksDiscovery.org

For more information contact Cathy Mather at 636.530.2146 or cwmather@riverworks.org

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Nine examples of standard marine navigational markers as seen traveling down mainstream.

Port Side - Red
 (These markers are to your left as you head downstream.)

Starboard Side - Green
 (These markers are to your right as you head downstream.)

All Waters

Scavenger Hunt on the Banks of the Ohio River

Training for Wheelhouse Captains
 Fill in the squares below. If you cannot answer a question, then you may ask someone to help. Be sure to stay with grown-ups that you know. Be safe, have fun, and use your imagination!

What does the river smell like?	What are the huge rectangular containers that carry cargo on the river called?	Name one type of boat used on the river before steamboats.	Name one of the pioneers or explorers who traveled this river.	Name the famous pair of explorers that began their expedition on the Ohio River in 1803.
Name a tributary to the Ohio River.	What do you recycle when possible?	What is the type of boat called that is used to push barges?	When navigating on the river, what does port mean?	
When navigating on the river, what does starboard mean?	Free Space 	Does your location on the river have a special name? If so, what is it?	Find a piece of litter and dispose of it properly.	
What does the sky look like today?	Find a duck or other water bird.	The Ohio River empties into the	Do you promise to protect streams and rivers?	Name 3 of the

Rich, Deep Curriculum

Barge Works

Today, an average of 175 million tons of freight moves on the Mississippi River each year. The largest tonnage item moved is grain — corn, wheat, and soybeans. Petroleum products and coal rank second in overall tonnage. Other products shipped on the river include fertilizers, sulfur, cement, salt, and sugar.

One gallon of fuel can move one ton of cargo 522 miles by barge. That same gallon of fuel would move that same ton of cargo 386 miles by rail and only 53 miles by truck. Because barges require less fuel to move cargo, shipping by barge creates less pollution.



What is a watershed?



A **watershed** is an area of land that drains into a body of water, such as a stream or river. In other words, it's like a big bathtub of land. You can see an example when rain falls in your neighborhood and seeps into a local creek or stream. That creek may in turn join with other creeks to drain into a larger river. This is how small watershed areas become part of a larger watershed. The Mississippi River Watershed is made up of thousands of local watersheds—in fact, 41% of the land area of the continental U.S. (lower 48 states) drains into the Mississippi River. That's one giant bathtub!

We all live in a watershed. Whether we work and play in areas that drain water into a creek or a river, we are all part of a greater river system. What you do in your own backyard can have an impact on others who live there. We all have a responsibility to keep pollution out of our neighborhood, then you can keep it out of the river.

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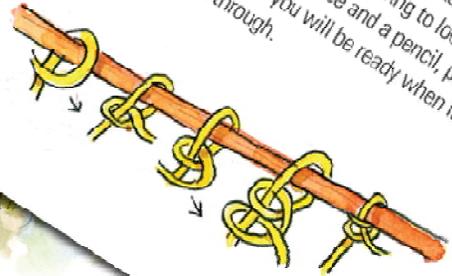
Mississippi River Fish

Did you know?

The Mississippi River and its floodplain are home to at least 260 species of fish—that's 25% of all fish species in North America.



Imagine that you are the Wheelhouse Captain of the Mississippi RiverWorks towboat which is preparing to lock through a lock on the river. Using your shoelace and a pencil, practice tying a half hitch knot so you will be ready when it's your group's turn to lock through.



Lock Toys



Large-Scale Puzzles



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Questions?

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