



Port of Cleveland Debris Management Program

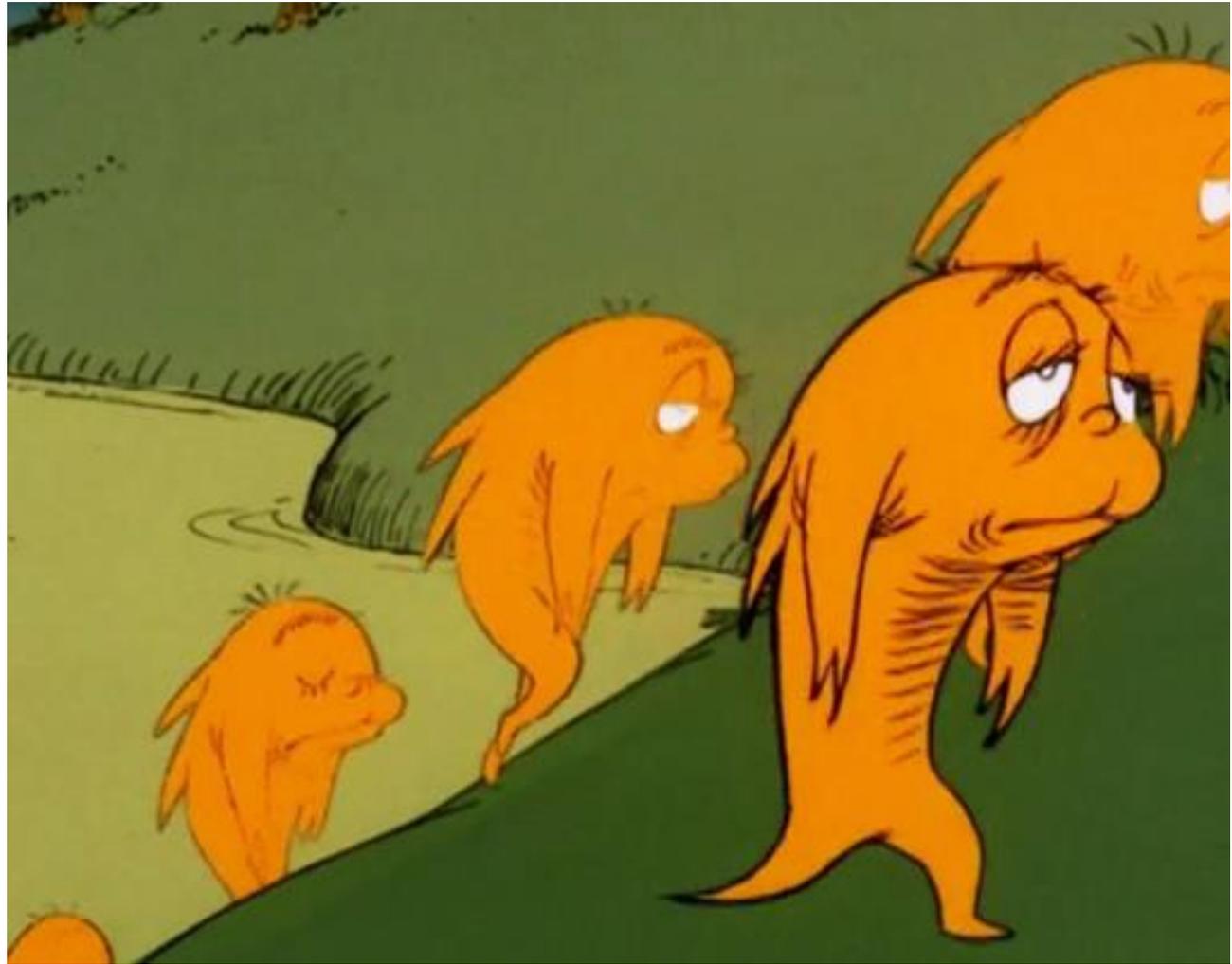
Jared Magyar

Cleveland- Cuyahoga County Port Authority

Director, Facilities & Operations

You're glumping the pond where the Humming-Fish hummed!
No more can they hum, for their gills are all gummed.
So I'm sending them off. Oh, their future is dreary.
They'll walk on their fins and get woefully weary
in search of some water that isn't so smeary.
I hear things are just as bad up in Lake Erie.

— *The Lorax*, by Dr. Seuss





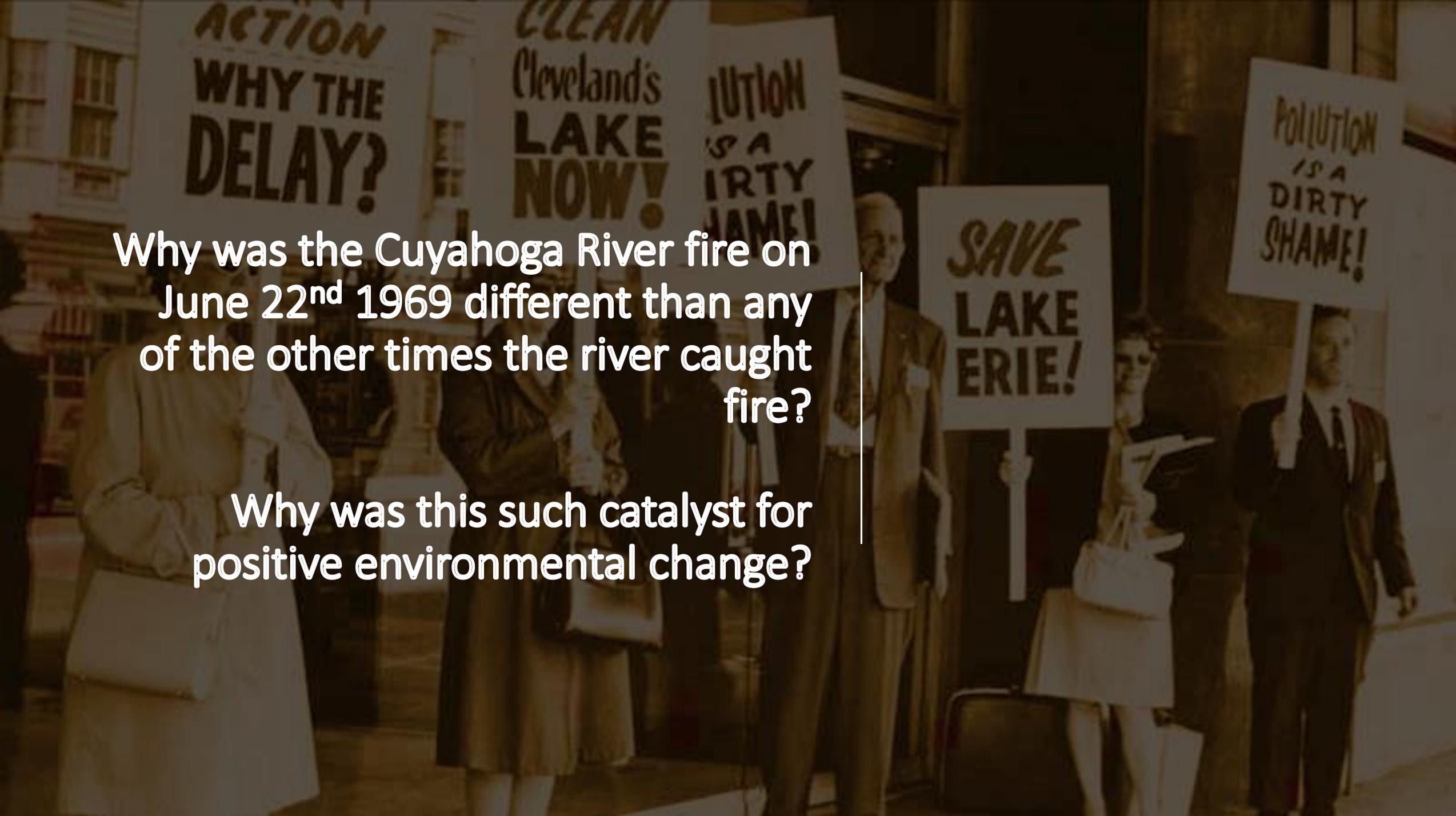
*The aftermath of the June 22, 1969 fire as the fire boat continues to be
(Photo courtesy of The Cleveland Public Library Photograph Collec*





ENOUGH IS ENOUGH!

- From 1868 until 1969 the Cuyahoga River caught fire a total of 13 times
- Caused millions of dollars in damages and 5 human lives
- Industries along the Cuyahoga River dumped all of their waste into the river
- The Cuyahoga River was declared “ecologically dead”
- “... an open sewer through the center of the city”
Brenton Babcock, Mayor of Cleveland 1888



Why was the Cuyahoga River fire on June 22nd 1969 different than any of the other times the river caught fire?

Why was this such catalyst for positive environmental change?



- Richard Nixon had made air and water pollution a top priority
- Time Magazine cover story
- Carl Stokes was mayor of Cleveland
- People were fed up
- The City of Cleveland became the symbol for out of control pollution with no regulations

The Outcome

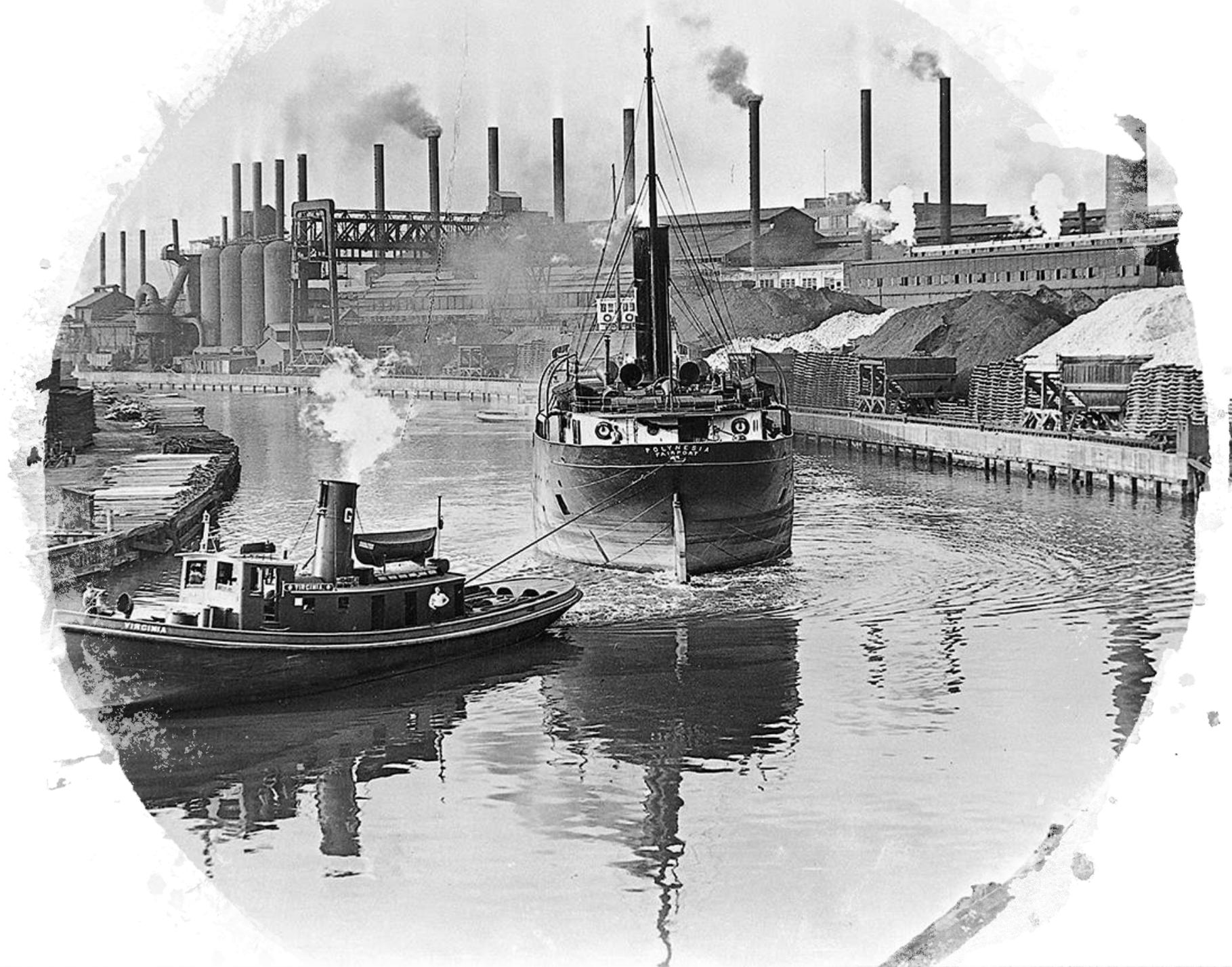
The **Environmental Protection Agency (EPA)** was established on December 2, 1970 to consolidate in one agency a variety of federal research, monitoring, standard-setting and enforcement activities to ensure environmental protection.

The **Clean Water Act (CWA)** is the primary federal law in the United States governing water pollution. Its objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.



Cleveland, OH

Google earth



Let's get to work



Flotsam and Jetsam

- Sister vessels designed to handle Cuyahoga debris which consists of: 95% organic debris and 5% litter/trash
- Construction funded by EPA through Great Lakes Restoration Initiative (GLRI) grant (\$460,000)
- Operations and Maintenance funded by Port Authority
- Partner with Downtown Cleveland Alliance to provide training and labor
- Designed by Port Authority to work in tight spaces along Cuyahoga River





Flotsam carries a bobcat excavator and a custom shovel with mesh for small debris which is loaded into Bagsters (fabric dumpsters)

Jetsam carries a crane for grabbing and lifting heavy bulky items (4,000) lbs

Vessels are constructed of marine grade aluminum, 25'10" LOA x 10' beam, displace 17,000 lbs; 160hp Volvo diesel outdrive



- Crew of five DCA employees work on Flotsam and Jetsam from May thru October
- Port trains, certifies, and supervises
- Safety and seamanship are priorities
- Form positive partnerships with maritime stakeholders

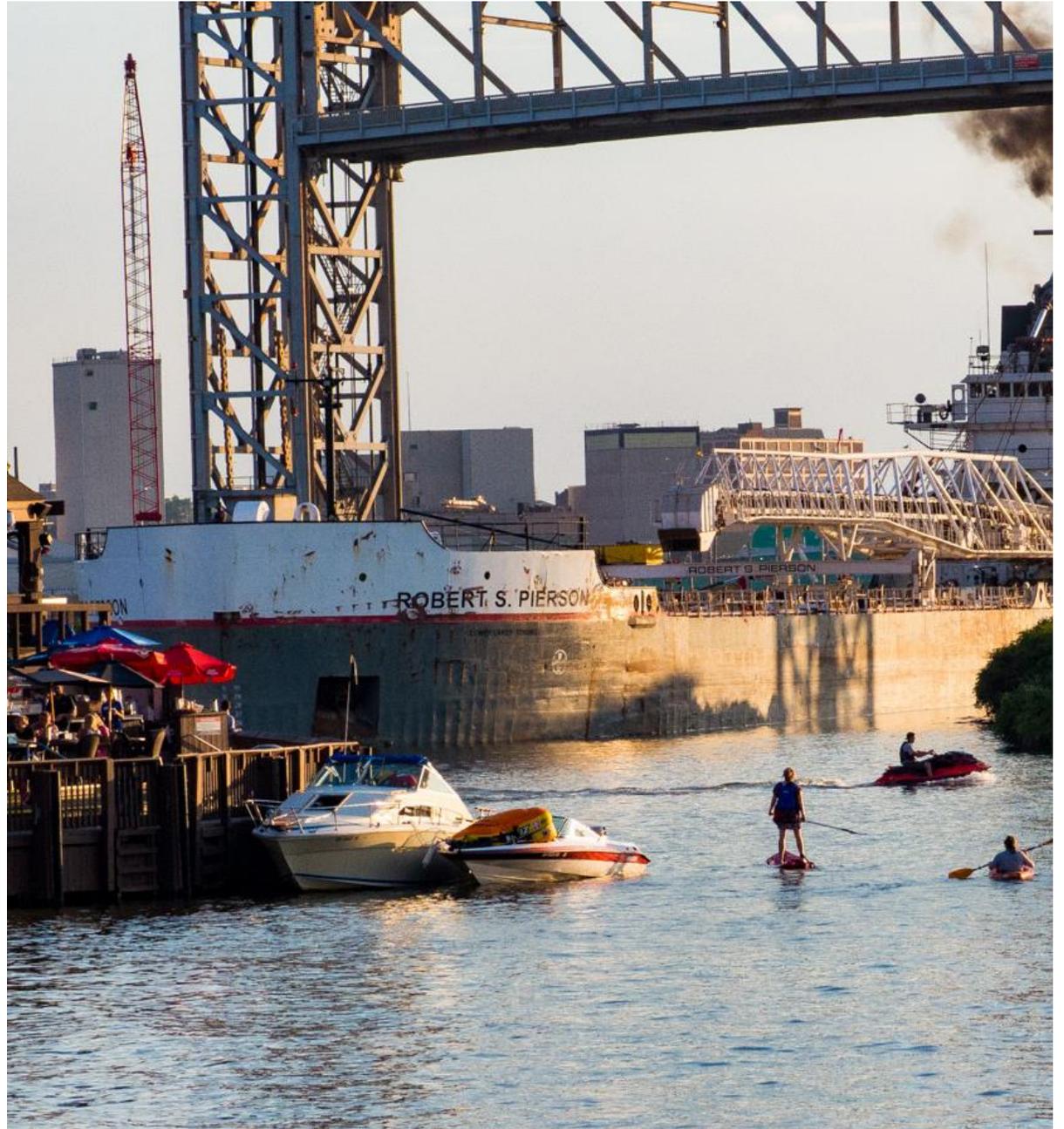
Mission &
Objectives

Stewardship of the Cuyahoga
River and the Cleveland
Harbor District

Creating a safer, cleaner, and
greener waterway for
industry and recreation
beneficiaries







Government Partnerships

Flotsam and Jetsam (Port Authority) work closely with USCG, City of Cleveland, Cuyahoga County, and Cleveland Metroparks to assist with identifying and removing hazards and obstructions from the Cuyahoga River and Cleveland's Harbor District along with conducting inspections of bulkheads and infrastructure.

We have also assisted with maintenance of regulatory harbor lights, floating boom systems, and maintenance and installation of regulatory signage.

Partnership Benefits

Combining resources:

- Keeps costs down for labor and equipment
- Saves time and increases productivity
- Increases manpower
- Increases problem solving capabilities and regional knowledge
- Work toward common goals together to make a bigger impact
- Provide a bigger benefit and greater service for the public



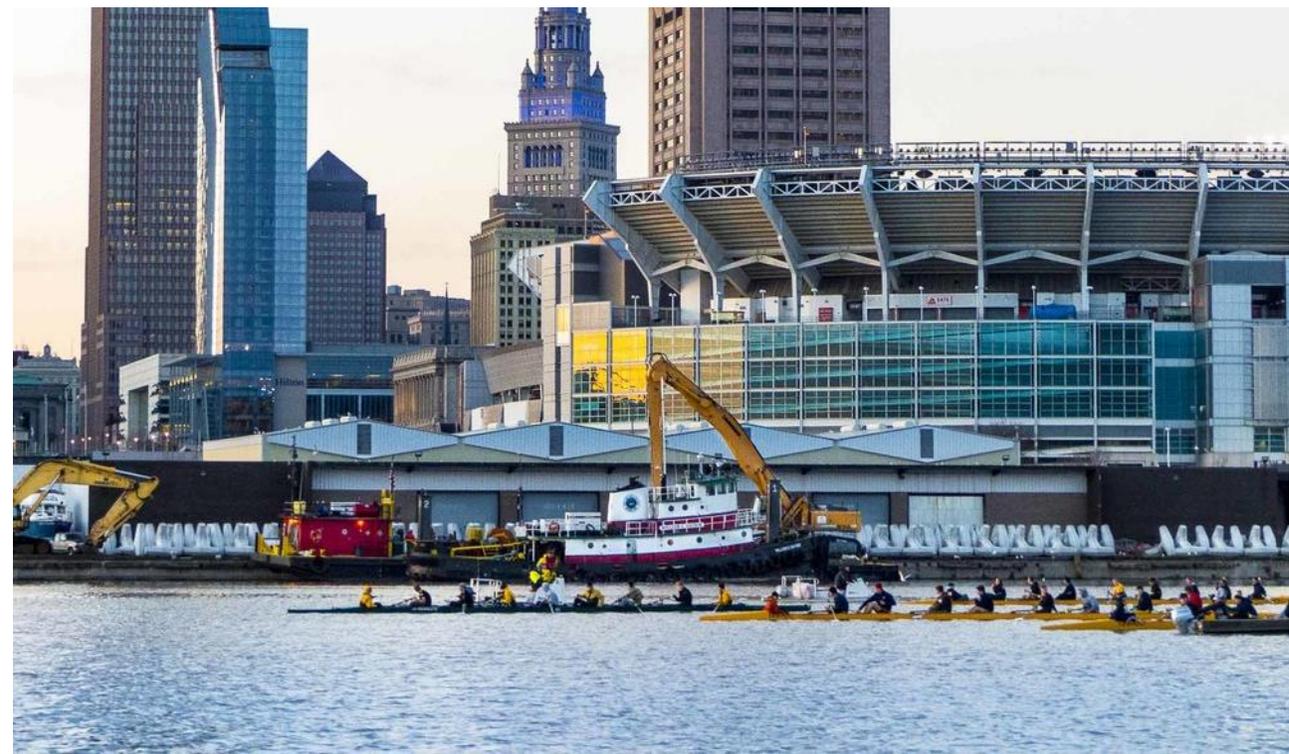
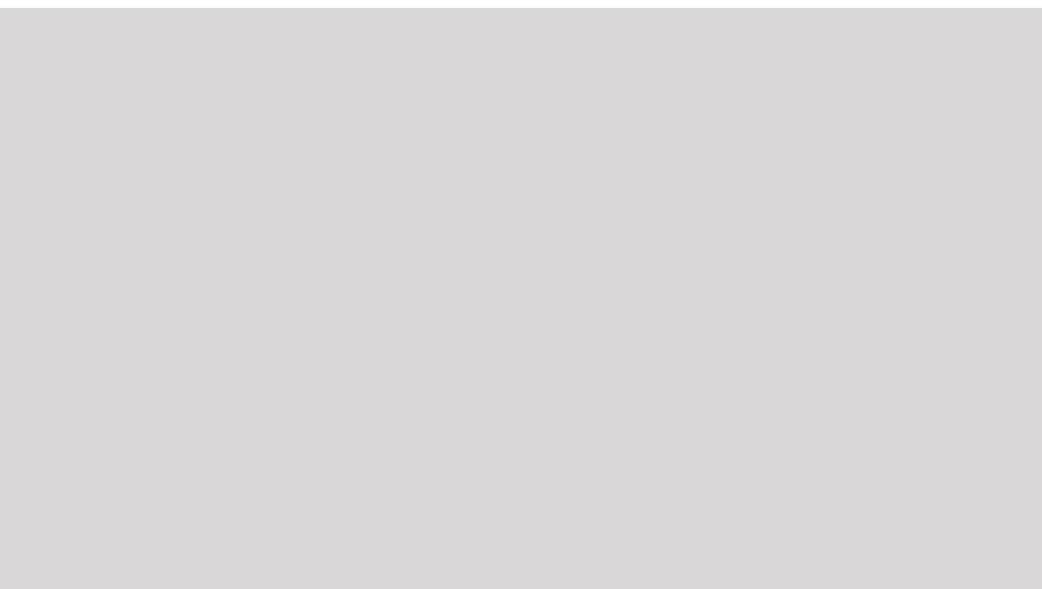


Public Events

Flotsam and Jetsam have taken part and assisted in maritime related events creating a clean and safe environment for recreation.

Public education and outreach are also important at these events.

Promoting environmental best practices and safety on the water is a priority.





Debris

Bagsters

Bagsters are an efficient and effective way to collect and dispose of smaller pieces of floating debris. The bagsters are loaded up and brought back to the marina where F & J dock and are loaded onto Waste Management trucks and hauled away.



Loose, Large Debris

Large floating debris is removed from the water using Jetsam's crane. It is taken to public boat ramps where it is cut up and pulled from the water. It is loaded into 40 yard containers with a front end loader.

Debris in Numbers

Each bagster holds 3 cubic yards of material.

Flotsam and Jetsam filled 76 bagsters in 2017

Total- 228 Cubic Yards

39,000 lbs

\$7,600

Flotsam and Jetsam filled 22 forty yard containers with large debris.

Total- 100.85 tons

201,700 lbs

\$7,466

Port's Annual Operating Budget for Debris Harvesters

- Crew and labor related costs
- Spring commissioning
- Winterization
- Fuel, oil, grease
- Bagsters and disposal
- Maintenance & supplies
- Repairs
- Insurance

Approximately \$160,000





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