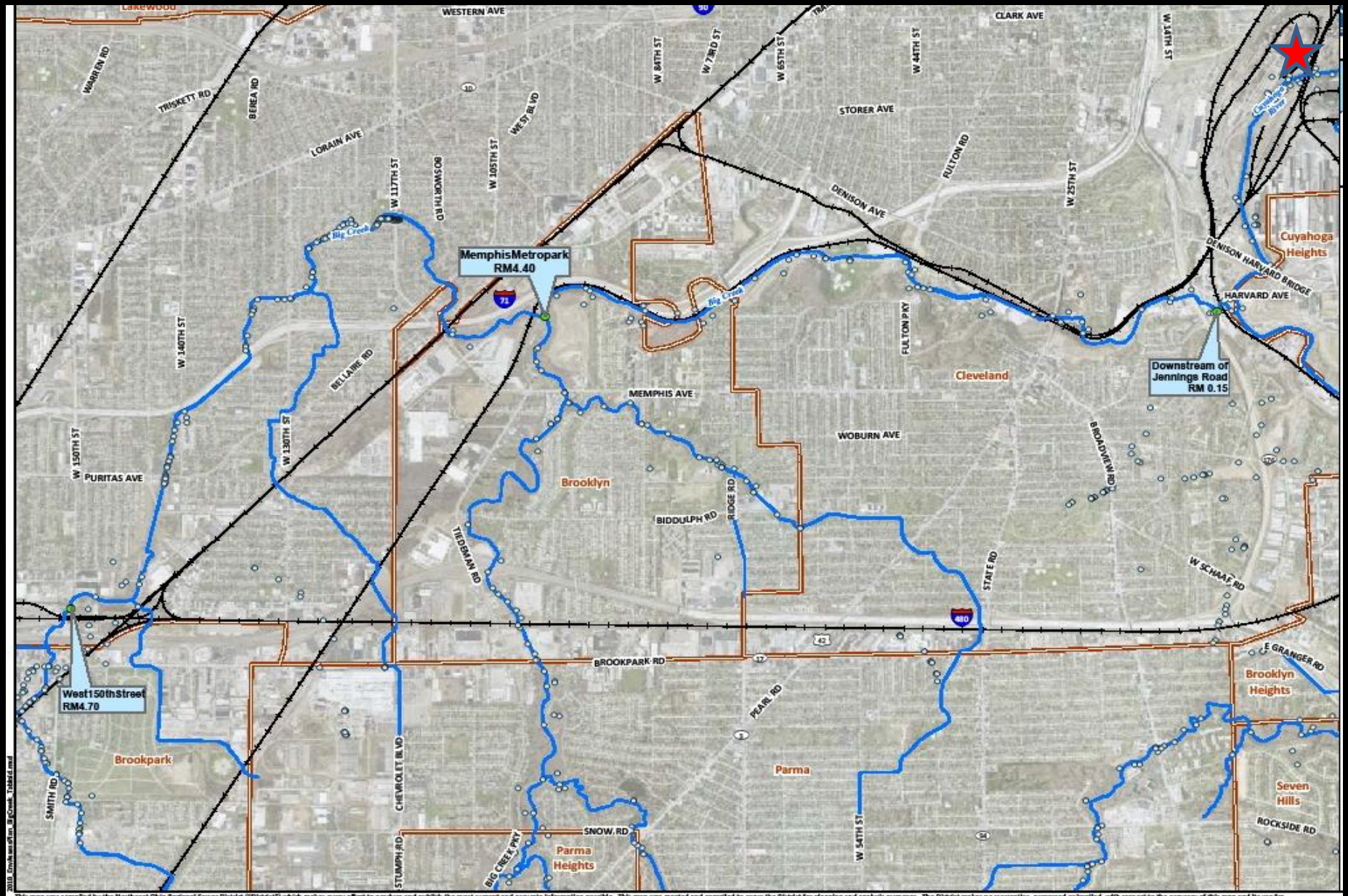
Big Creek 1970 to 1985

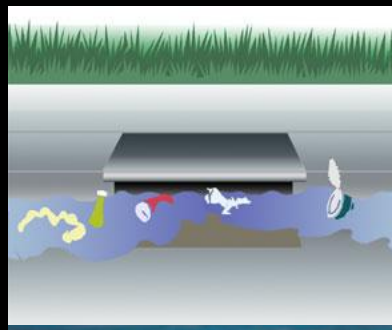


Ed Kelly
Storm Water Control Services, LLC

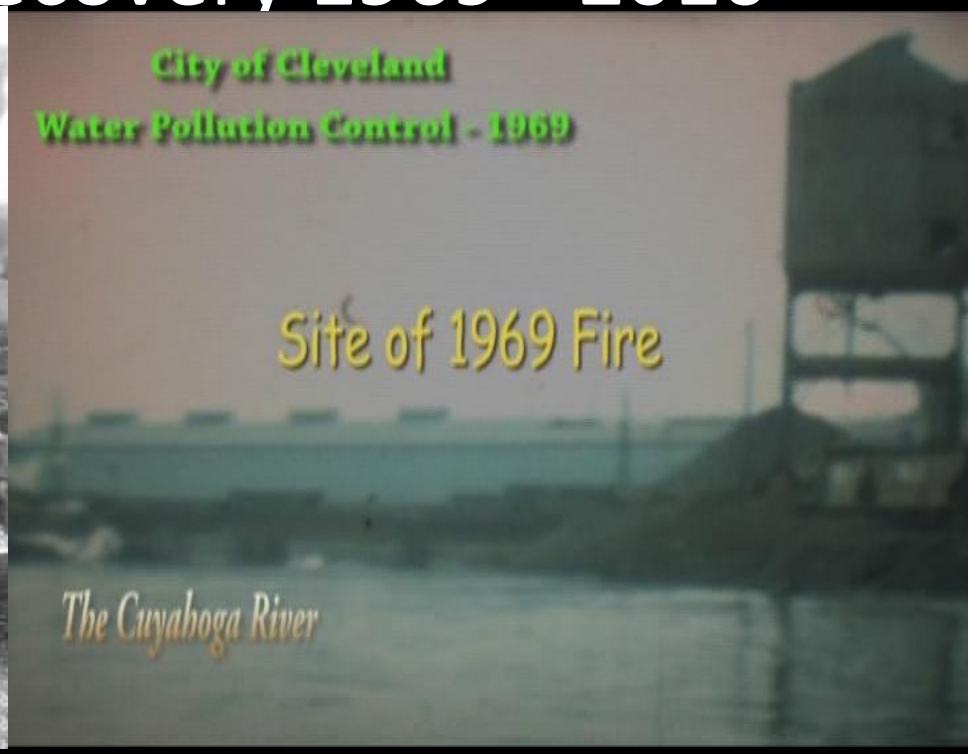
- 8 years as Public Utility Employee (City of Cleveland & NEORSD), 30 years with Consulting Engineers, 2 years as a Storm Water/Waste Water Utility Contractor
- Author of Water Environment Federation, Chapter 5, Manual of Practice, Storm Water Infiltration/Inflow Source Detection
- Has Provided over 20 OEPA Contact Hour Presentations on I/I Identification and Removal
- Present Owner and Manager of **Storm Water Control Services, LLC**
- Chairman of Rocky River Watershed Council

Why Should We Care About Big Creek?

- No matter where a person lives, they live in a Watershed.
- A Watershed is simply the area of land that drains to a specific point of water, whether it is a lake, stream, river, or ocean.
- In our case, the Big Creek Watershed is an important area that should be monitored and protected by the residents of the watershed
- Although residents may not think about it, their individual actions affect everyone “downstream” in the watershed



How Does Big Creek Relate to the Cuyahoga River Recovery 1969 - 2010



Ed Kelly, Chairman of the Rocky River Watershed Council
Manager, Storm Water Control Services, LLC
edkelly2005@msn.com

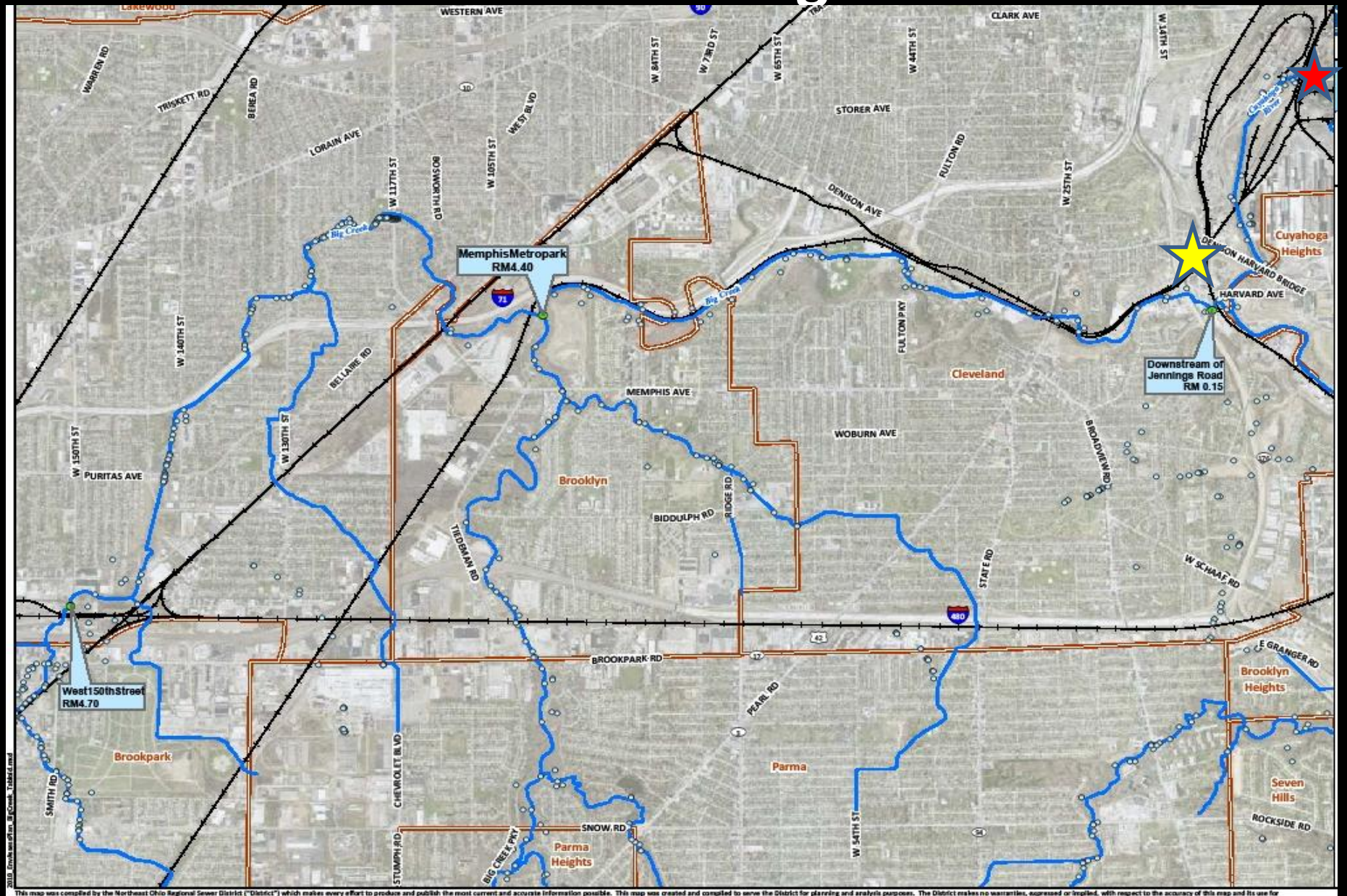
On June 22,1969 The Cuyahoga River Catches on Fire Again and Contributes Reasons to the Formation of EPA

First Fire
1868

Worst Fire
1952

★ Location of Fire

★ Confluence of Big Creek



City of Cleveland
Water Pollution Control

- 1967 Consulting Firm, Havens and Emerson is hired by the City of Cleveland
- Engineers Recommend Intercepting Polluted Streams as an “Interim Measure” to Reduce Pollution to Lake Erie
- Major Sources of Pollution Continue to be Oil Spills, Industrial Waste Discharges and Combined Sewer overflows

City of Cleveland Water Pollution Control

- Cleveland Area Streams Intercepted and Transported to Wastewater Treatment Plants Include:
  - Shaw Brook
  - Green Creek
  - Morgana Run
  - Burke Brook
  - Portions of Kingsbury Run and **Big Creek's West Branch**

City of Cleveland Water Pollution Control

- Cleveland Area East Side Area Streams Treated Before Entering Lake Erie:
  - Nine Mile Creek
  - Dugway Brook
  - Shaw Brook

City of Cleveland
Water Pollution Control

- Clean Water Task Force is formed
  - Projects Identified Included:
    - Sampling and Monitoring of Area Steams
    - Physical Inspection of Open and Culverted Streams
    - Reinstating “Clean Water “ Streams to Original Channels -Green Creek and Big Creek, First Projects
    - First Water Pollution Control Case Tried and Won on the Cuyahoga River (Metals Applied) to Set a Precedence in Enforcing Industrial Waste Polluters

Environmental Protection

- **December 2, 1970 Environmental Protection Formed**

1. Establish and enforce environmental protection standards.
2. Conduct environmental research.
3. Provide assistance to others combating environmental pollution.
4. Assist the Council on Environmental Quality in developing and recommending to the President new policies for environmental protection

- **April 22, 1970 First Earth Day !**

Environmental Protection Agency

- On December 11, William Ruckelshaus, the first Administrator went on the offensive against three cities with noteworthy water pollution problems: Cleveland (of "Burning Cuyahoga" infamy), Detroit, and Atlanta. EPA gave the mayors of these cities six months to come into compliance or face court action. Four days later, he spoke to a Governors' conference of the "imperative" need for unbiased state pollution control boards.

Federal Water Pollution Control Amendments of 1972

Clean Water Act

- The legislation signaled a new way of dealing with the nation's water pollution by prohibiting the discharge of pollutants unless the discharger first obtains a permit from the government. **NPDES Permit System was Born!**

- Under authority contained in the 1972 legislation, the EPA had primary responsibility for implementing the ambitious and optimistic goals of ensuring that all waters of the United States be "fishable" and "swimmable" by 1983, 10 years after the act's passage

What Were OEPA's Concerns?

Stream Bank Erosion

Debris

Channelization

Stream Widening

Toxic Chemicals

Pathogens

Cuyahoga River Scrapbook Pictures from 1967

- Headwaters of the Cuyahoga
- Upstream of Akron
- At Akron Wastewater Treatment Discharge
- Downstream of Akron
- Upstream of Head of Navigation
- Head of Navigation and Site of the Last Fire on the Cuyahoga River

Headwaters

Upstream of Akron

And Then, Just Downstream of Akron Wastewater Treatment Discharge

Downstream of Akron, Before Arriving in Cuyahoga County

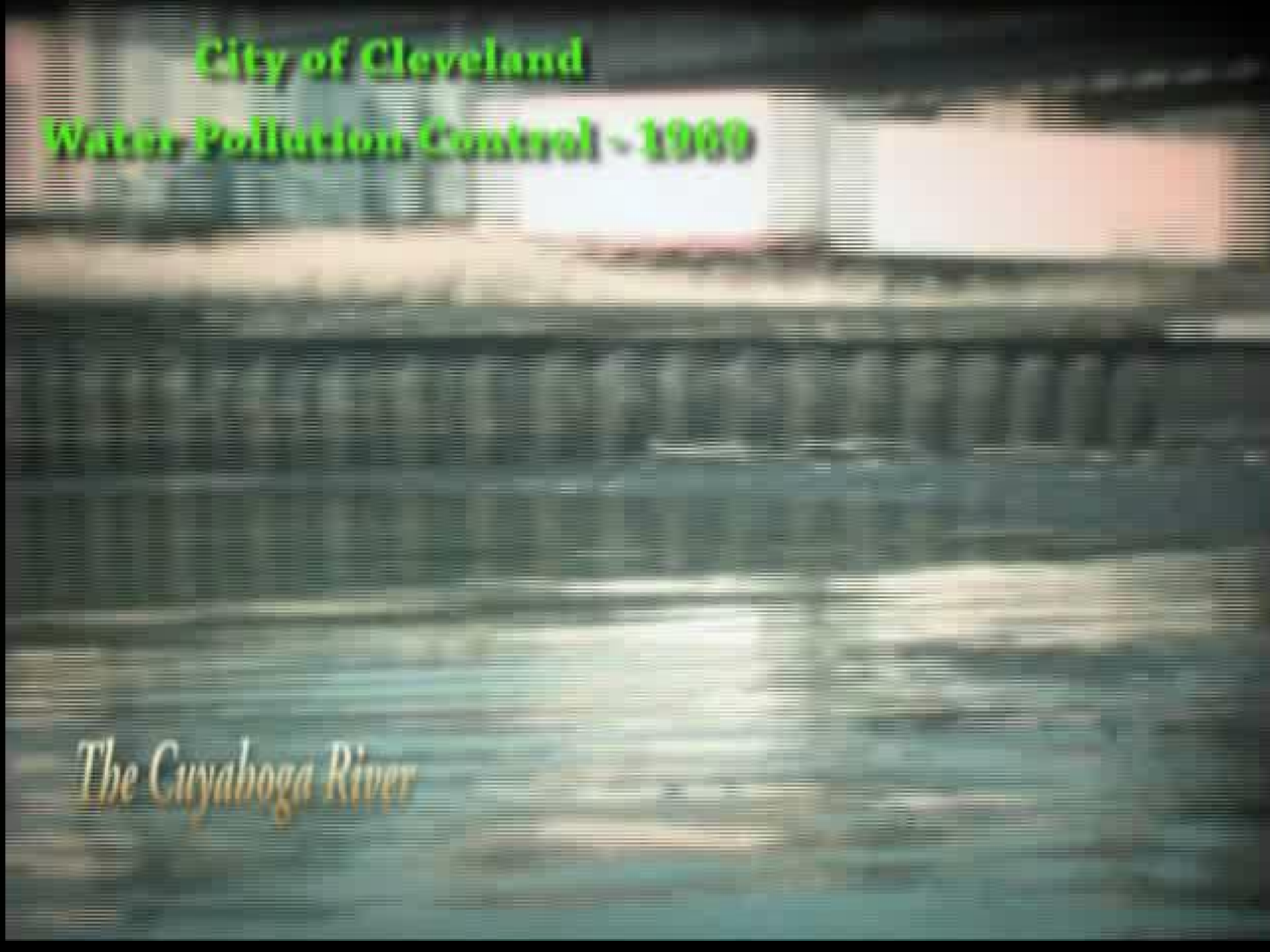
Head of Navigation
River Depth Dredged from 4’ to 27’

Head of Navigation and Site of Last Fire on The Cuyahoga River

Picture from 1969

Picture from 2007

Now Let's Take a 1969 Trip on the Cuyahoga from Lake Erie Back to the Head of Navigation


City of Cleveland
Water Pollution Control - 1960
The Cuyahoga River

Why Did The City of Cleveland Allow This Pollution Anyway?

Let's Stop Along the Way To View Kingsbury Run


City of Cleveland
Water Pollution Control - 1969
The Cuyahoga River

Northeast Ohio Regional Sewer District

- Established by court order in 1972
- Purpose to collect, treat, and dispose of wastewater
- Originally served 39 communities

Wastewater Treatment Plant Upgrades

- Completed from 1974-1988
- Two-stage biological process
  - Carbonaceous biochemical oxygen demand
  - Ammonia and organic nitrogen
- Chlorination/dechlorination

Pollution Prevention & Reduction: Industrial Pretreatment Program

- Started 1970s
- Enforce state and federal regulations
- Reduce load of pollutants from industries

Pollution Prevention & Reduction: Interceptors & Intercommunity Relief Sewers

- Constructed in 70s, 80s, 90s
- Decommissioned WWTPs
- Reduction in direct dischargers

Pollution Prevention & Reduction: Illicit Discharge Detection & Elimination

- Leaking and overloaded sewers and cross connections
- Elimination of 6 million gallons/day

Monitoring Stream Health

1. Water Chemistry
2. Habitat
3. Fish
4. Macroinvertebrates

Water Chemistry Sampling

- Grab samples
- Toxicity testing
- Data sondes
- Fish tissue

Habitat Evaluation

- Qualitative Habitat Evaluation Index (QHEI)
- Upstream of navigation channel = Good/Excellent
- Navigation channel = Poor
  - Artificial habitat

Fish Community Health

- Electrofishing
  - Index of Biotic Integrity (IBI)
  - Modified Index of Well-Being (MIwb)

And Finally, The Cuyahoga River Today

Proves Water Quality Can Improve with Some Combined Efforts !

We've come a long way….

…but still have work to do!

Thanks For Listening to Some of The History of Water Pollution of Our Area Streams

Next We Will Learn Some Detailed Information about the Present Conditions of Big Creek and its Tributaries Presented By:

John Rhoades, NEORSD

Questions?