

# City of Akron Combined Sewer Overflow (CSO) Long Term Control Plan

Public Meeting  
September 22, 2010

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# AGENDA

- Welcome/Introductions
  - Rick Merolla, Director of Public Service
- Status of City's Combined Sewer Program
  - Rick Merolla
- Akron Combined Sewer System
  - David Haywood, Program Manager
- Overview of Proposed Long Term Control Plan
  - David Haywood
- Public Questions and Comments
- Adjourn



# STATUS OF CITY'S COMBINED SEWER PROGRAM



# Akron Combined Sewer Overflow (CSO) History

- 1993/1994      System Wide Studies
- 1998            Updated Facilities Plan
- 1999            CSO Long Term Control Plan Alternatives
- 2002            Understanding with State of Ohio
- 2004-2008     Additional Studies/Section 308 Requests
- 2005-2006     Constructed CSO Rack 40/31
- Mar. 2009      US EPA Complaint filed against the City

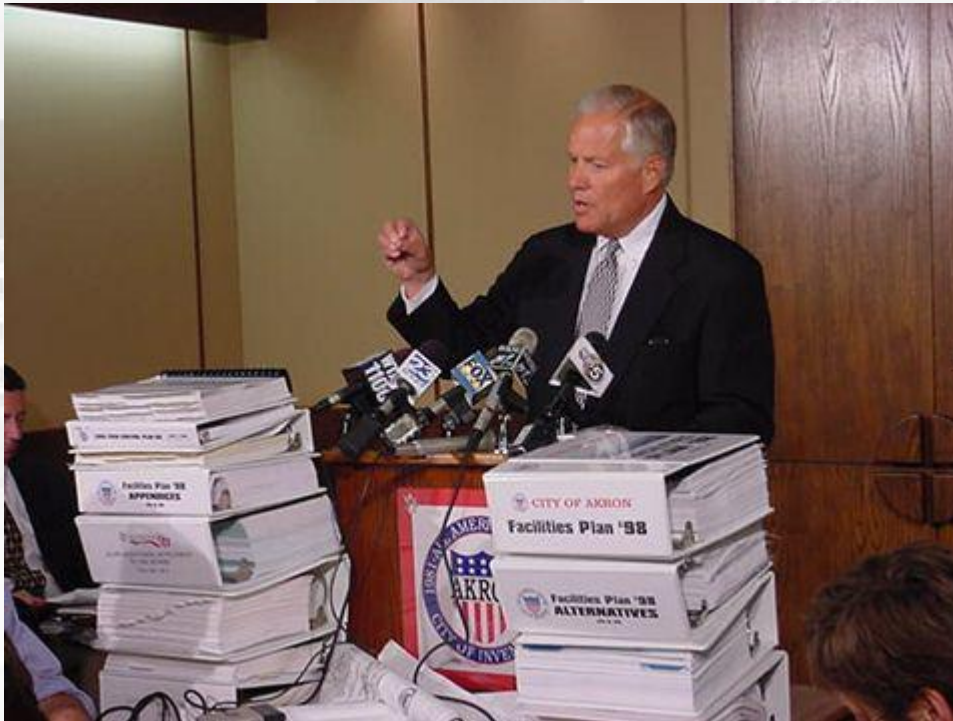


# Akron CSO History - *Continued*

- Nov. 2009 Consent Decree Lodged/Court
- Nov. 2009 Federal Register Notice  
60 Day Comment Period  
(11/25/09 – 1/24/10)
- Feb. 2010 CSO Community Action Group (CAG)
- March 2010 Consent Decree Filing With Federal Court
- Aug. 2010 Draft Long term Control Plan  
Submitted



# Akron-Ohio EPA 2002 Plan



## Akron offers fix for sewer overflow

Rate increase proposed to help  
decrease Cuyahoga River sewage

JOHN C. KUEHNER  
*Plain Dealer Reporter*

Akron will spend \$377 million over the next three decades to reduce the amount of sewage pouring into the Cuyahoga River during rainstorms.

The Ohio Environmental Protection Agency reached a tentative agreement yesterday with Akron on a plan to correct the city's sewage overflow problem, an issue not only there, but also in Cleveland, Columbus and about 950 older communities in the United States.

"We are going to do our part," Akron Mayor Don Plusquellic said in a news conference yesterday.

Each year, Akron's sewer system dumps about 3 billion gallons of sewage, waste water and storm

# Major Elements of 2009 Consent Decree

- Submit plans for Emergency Response and Capacity, Management, Operations, and Maintenance programs
- Complete specific capital improvement projects at the Water Pollution Control Station and collection system
- Submit Long Term Control Plan
- Complete all projects by October 15<sup>th</sup>, 2028



# Penalties/SEP/STIPS

## Civil Penalties

**\$500,000**

## Supplemental Environmental Project

State Route 82 Dam

**\$900,000**

## Stipulated Penalties

1<sup>st</sup> to 30<sup>th</sup> day

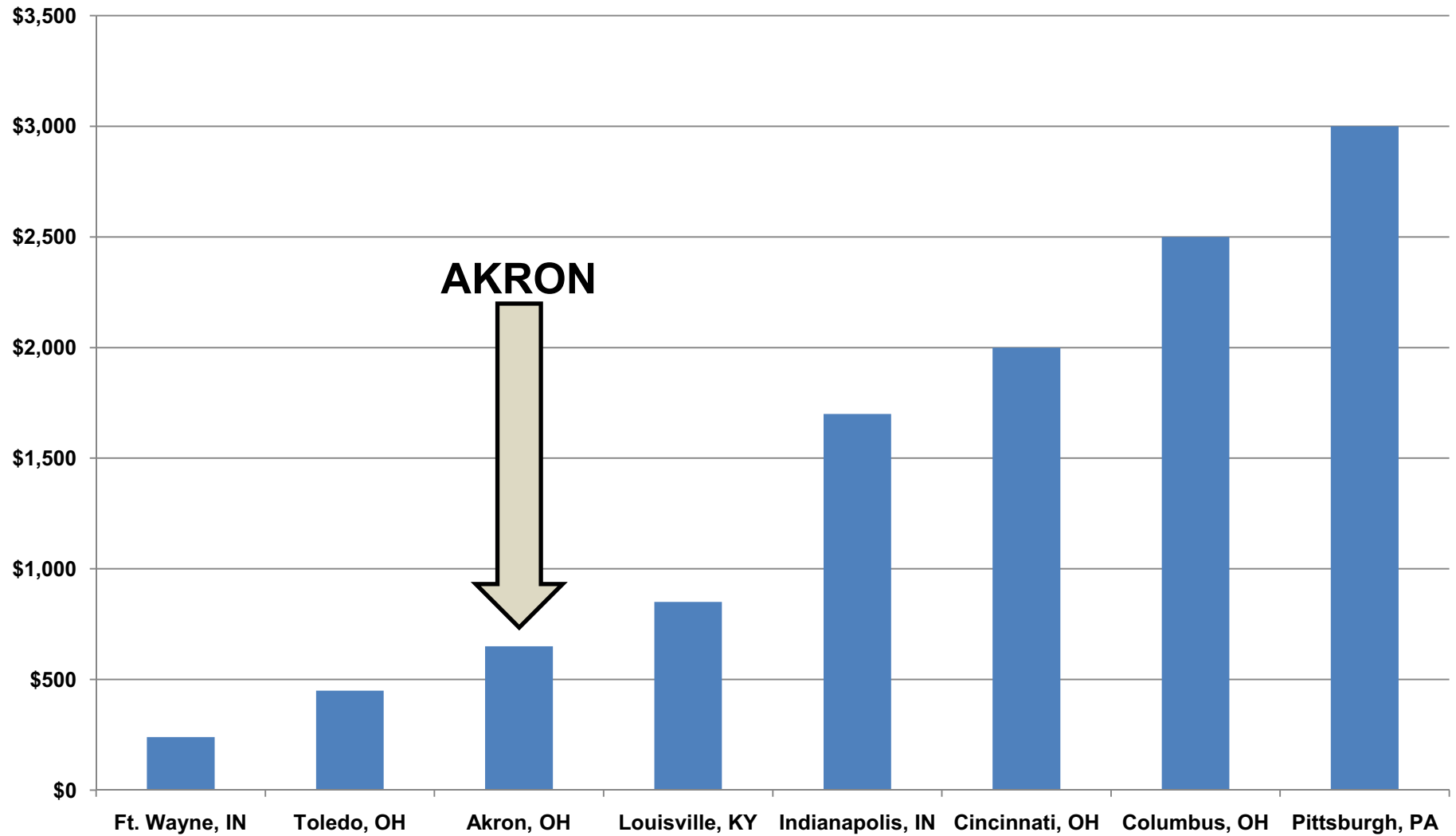
31<sup>st</sup> to 60<sup>th</sup> day

After 60 days

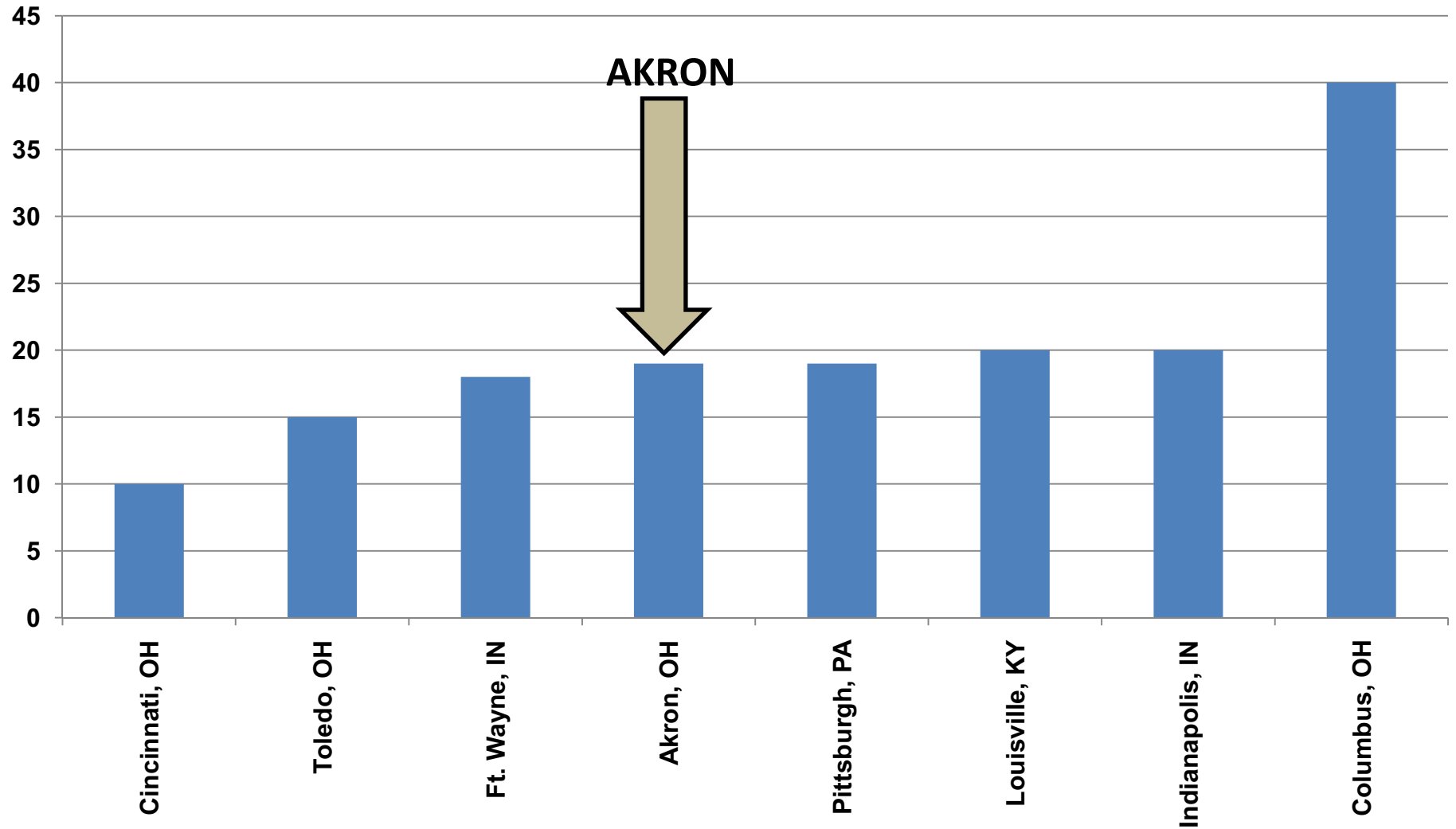
**\$500 to \$10,000**



## Projected Wet Weather Capital Improvement Program Value (\$million)



## Wet Weather Program Implementation Schedule (Years)



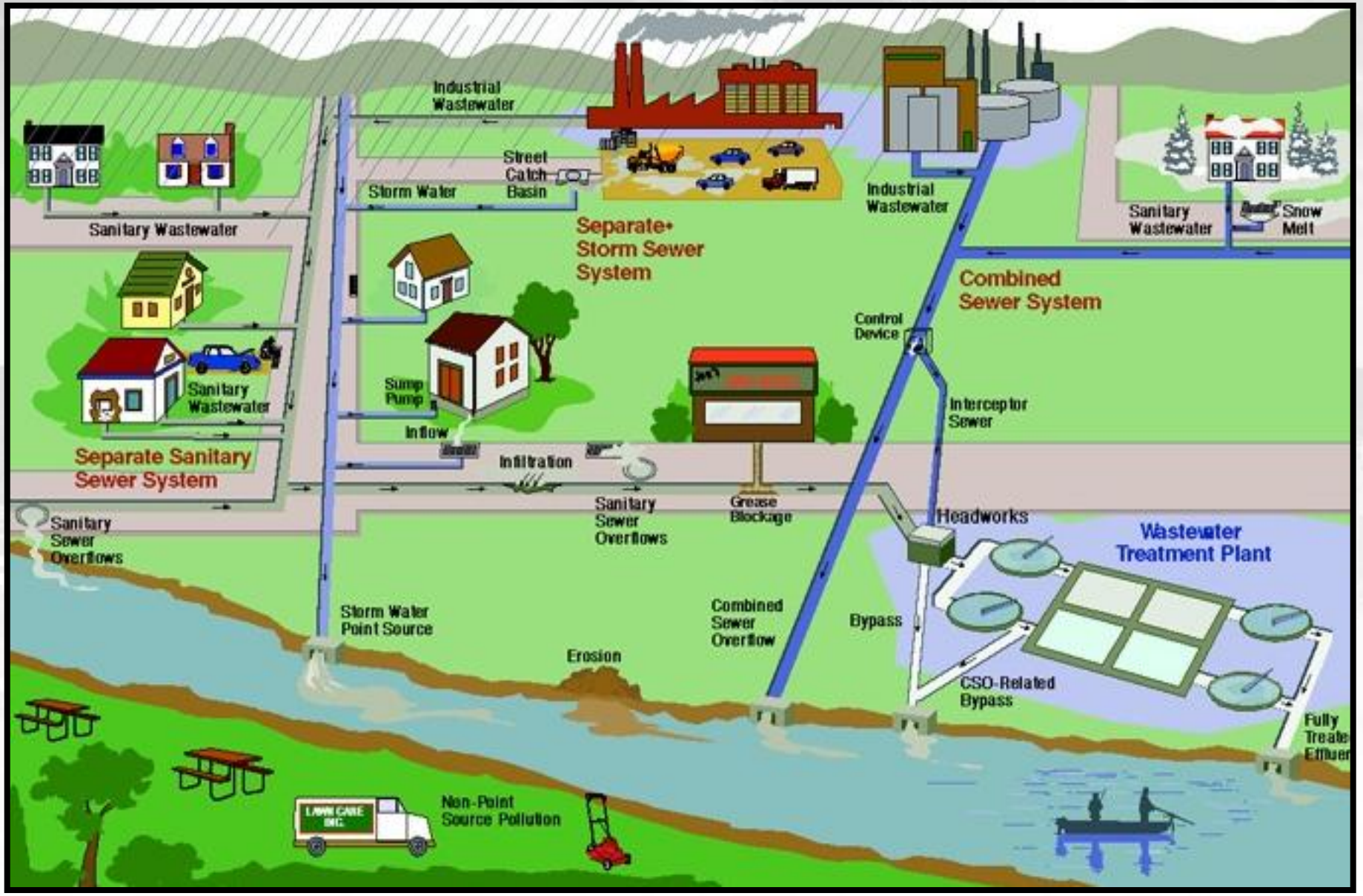


# AKRON COMBINED SEWER SYSTEM

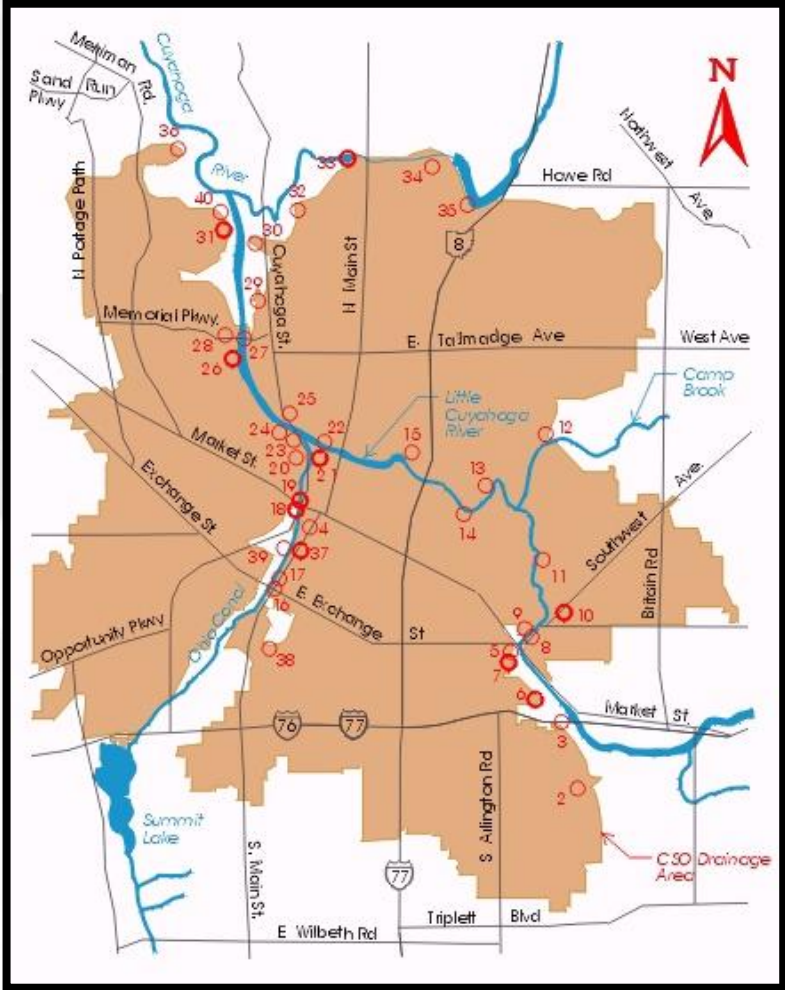
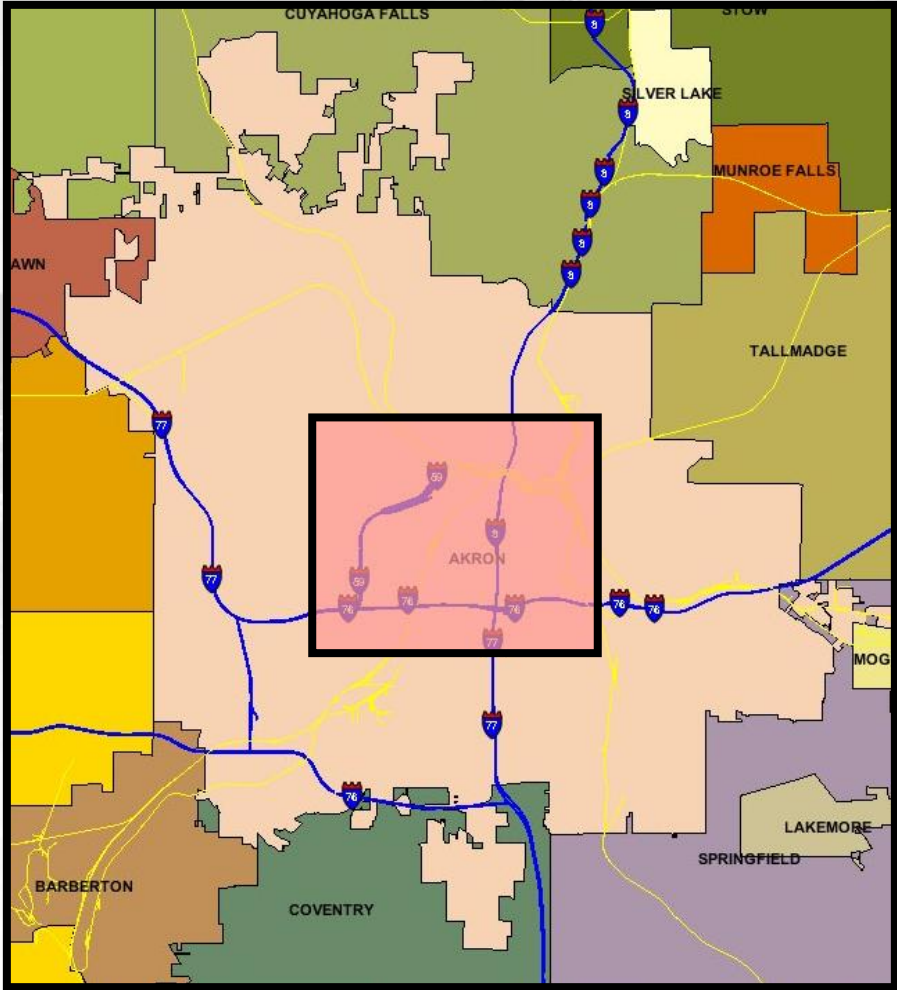


# What is a Combined Sewer Overflow?



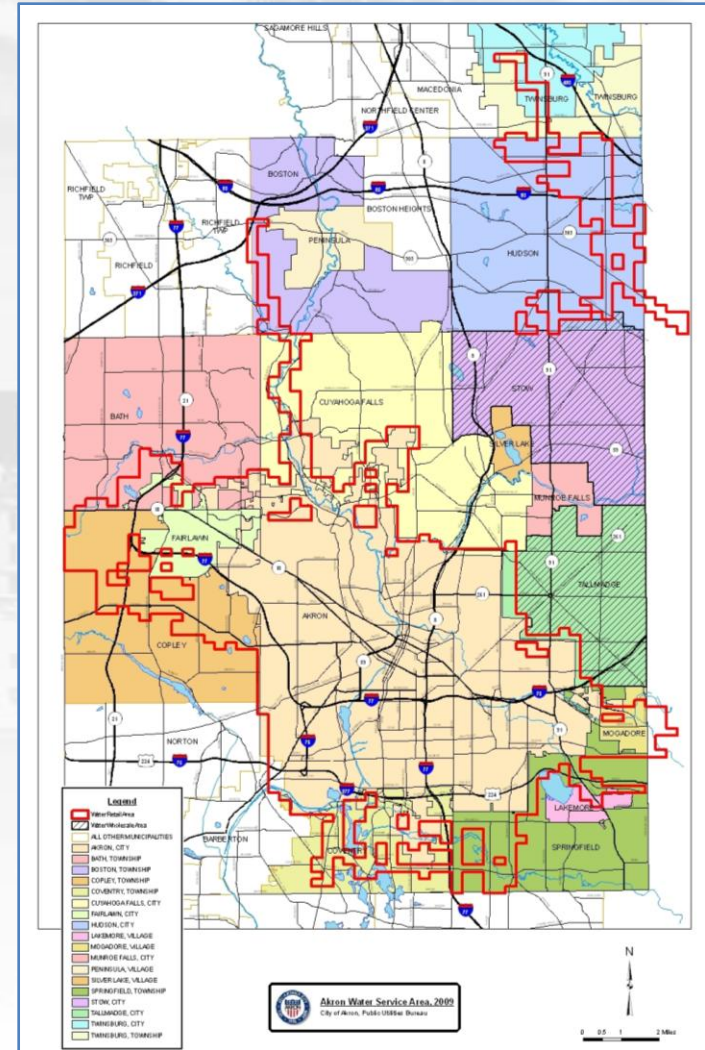


# Akron CSOs



# Sewer Service Area

- City of Akron is 62 square miles
- Including Joint Economic Development Districts (JEDD's) our service area is 110 square miles
- There are approximately 85,000 active accounts serving 300,000 citizens water and 350,000 citizens sewer



# Sewer System Components

- 1,358 miles of pipe
- 22.2 miles of force mains
- 28,528 manholes
- 38 pump stations
- 36 CSO racks
- 2 CSO storage basins
- 22,834 inlets
- 649 storm outfall locations





# OVERVIEW OF PROPOSED LONG TERM CONTROL PLAN



# Long Term Control Plan Overview

- Proposed Long Term Control Plan (LTCP) Update Report is organized in accordance with USEPA's *Combined Sewer Overflows Guidance for Long Term Control Plan*
- Contains required Consent Decree documents:
  - LTCP Update
  - LTCP Update Report
  - Post Construction Monitoring Plan



# LTCP is Presented in Twelve Sections

1. Background
2. Characterization, Monitoring, and Modeling
3. Public Participation
4. Consideration of Sensitive Areas
5. Maximization of Treatment at WPCS
6. Evaluation of Alternatives
7. Cost Performance Considerations
8. Recommended Plan
9. Implementation Schedule
10. Operational Plan
11. Post Construction Monitoring Program
12. Bibliography



# RECOMMENDED PLAN



## Section 8 – Recommended Plan

- Plan Selection Factors
- Recommended LTCP
- Benefits of LTCP
- Impact on Sensitive Areas
- Implementation Schedule

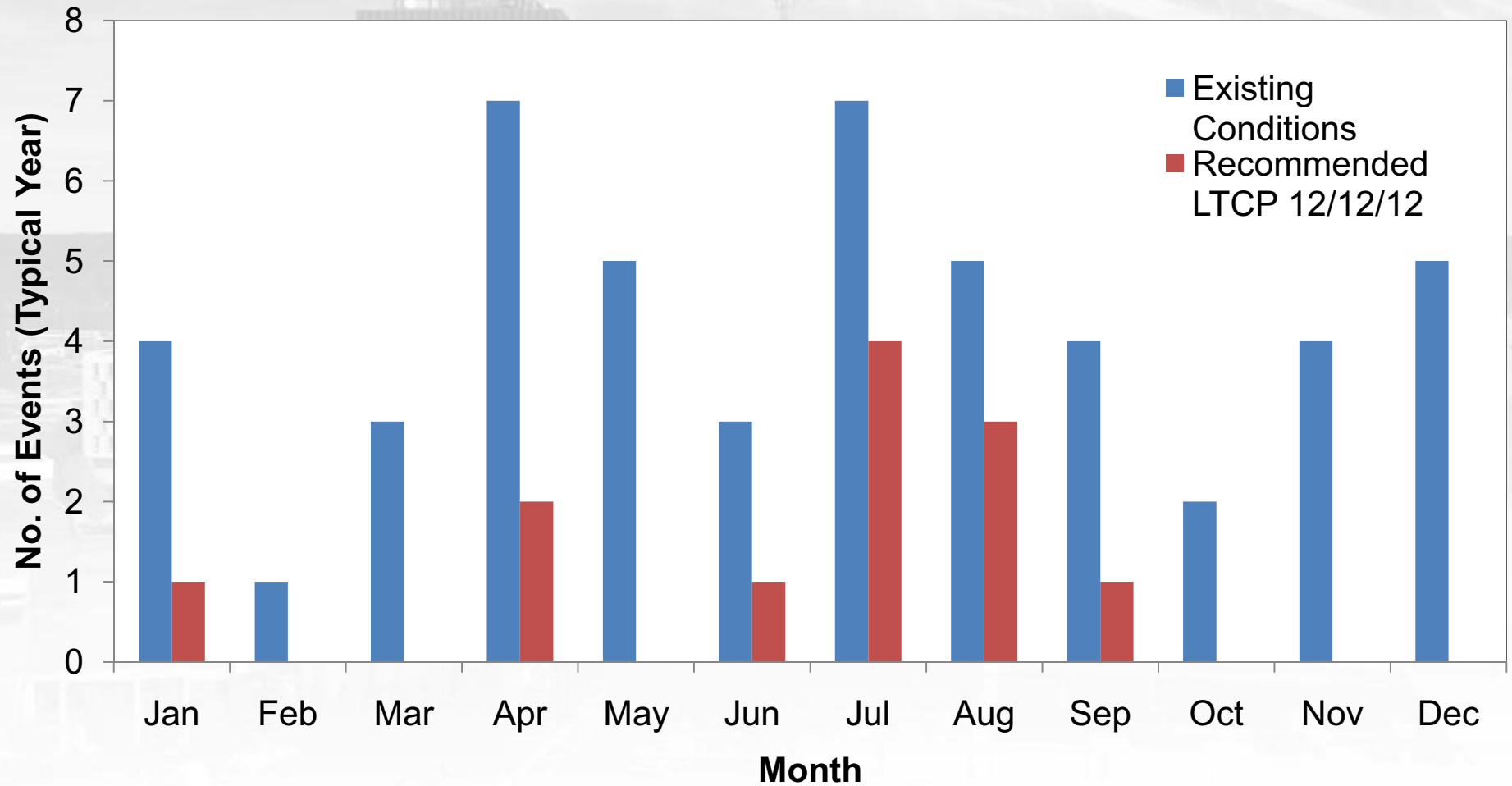


# Alternatives Evaluation and Cost Performance helped Establish Short-list of Potential Plans

- 3-3-2
  - 3 overflows per typical year at storage basins
  - 3 overflows per typical year at Ohio Canal Tunnel
  - 2 overflows per typical year at North Side Tunnel
- 6-6-6
- 12-12-12



# Typical Year Storm Events Causing Overflows (12-12-12 Plan)



# Selection Factors used to Evaluate Short-list of Potential Plans

- CSO Policy
- Knee of the Curve Analysis
- Water Quality Benefits
- Implementation Schedule
- Other Clean Water Program Requirements
- Financial Capability
- Financing Plan
- Public Participation and Feedback

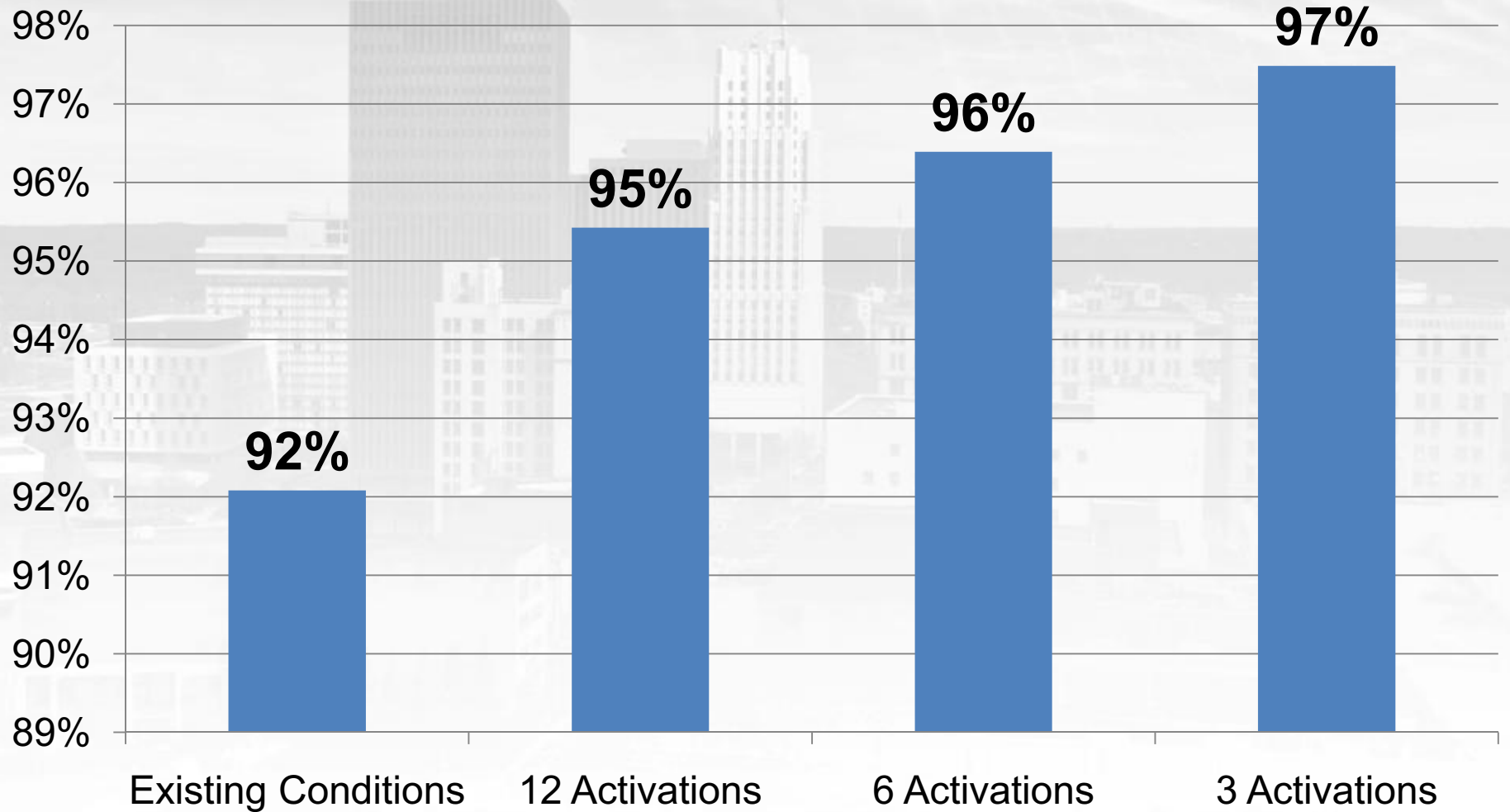


# CSO Policy – Presumption Approach

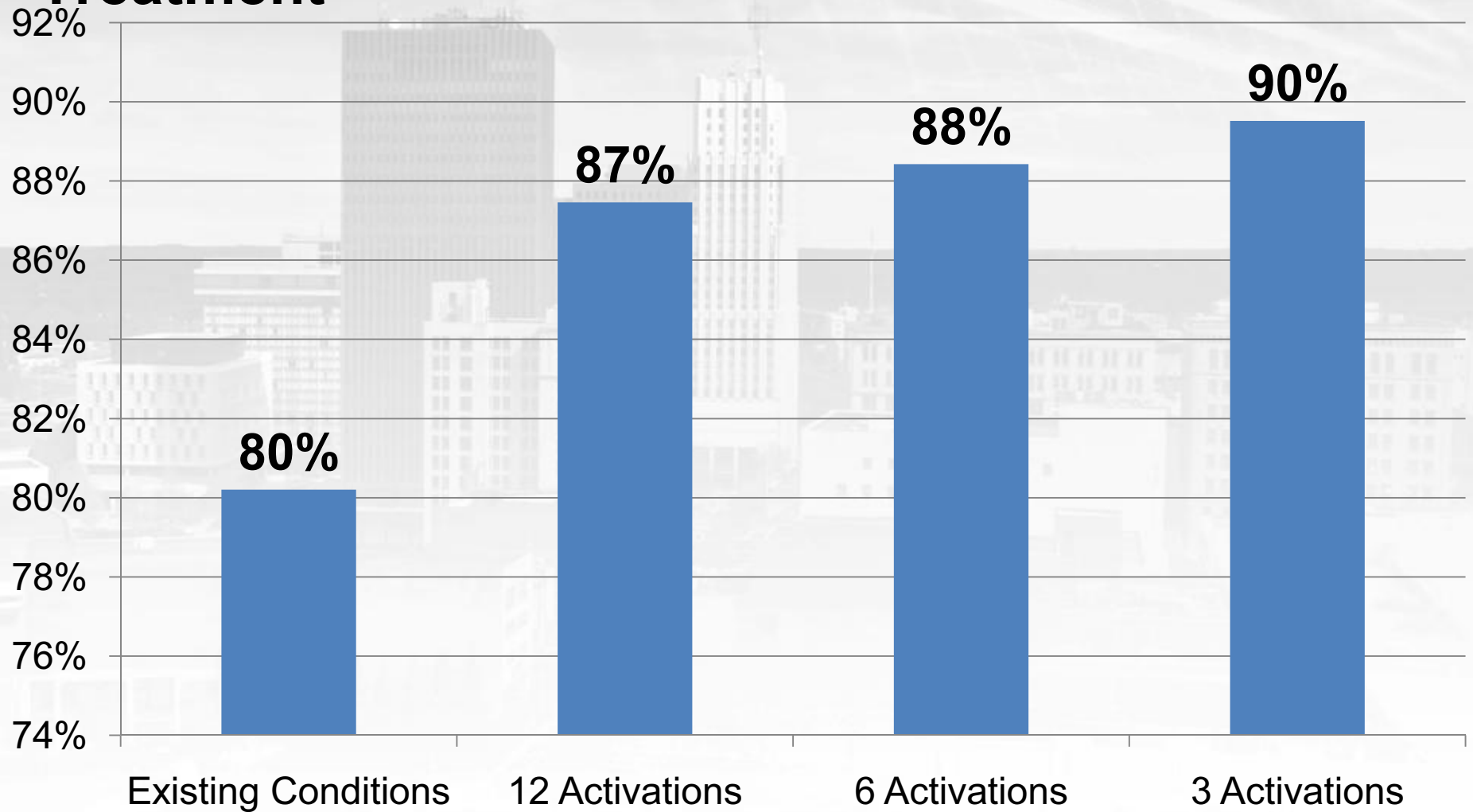
- No more than 4-6 overflow events per year; or
- Elimination or capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis



# System Wide Percent Capture – Full Primary Treatment



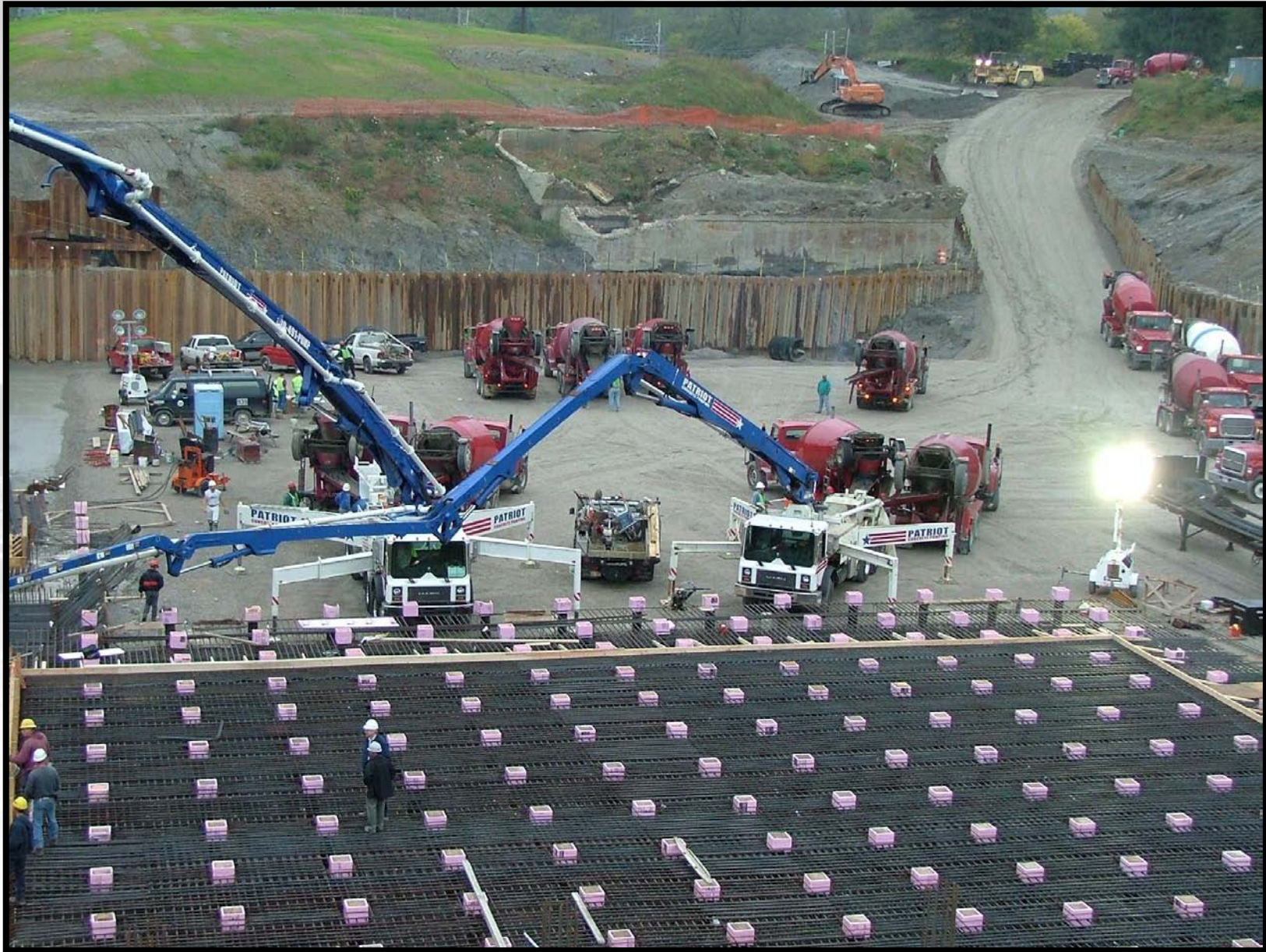
# System Wide Percent Capture – Full Secondary Treatment



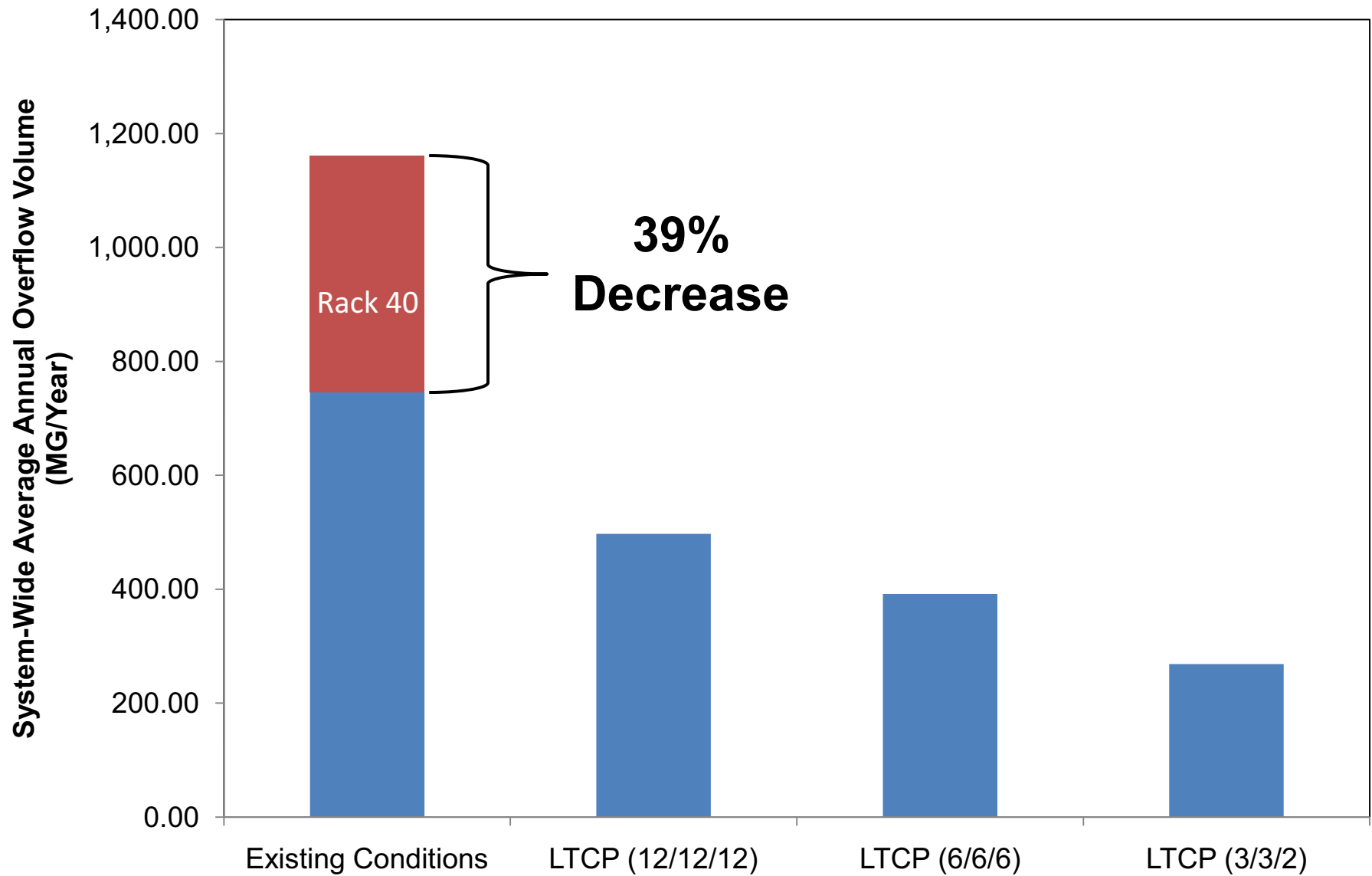
# Construction of Cuyahoga Street Storage Facility had Huge Impact on CSOs

Typical Year	Estimated Typical Year Activations	Estimated Typical Year Overflow Volume (MG)
Before Rack 40	1,044	1,240
After Rack 40	832	753









# Akron's Waterways are Classified as Primary Contact Recreation

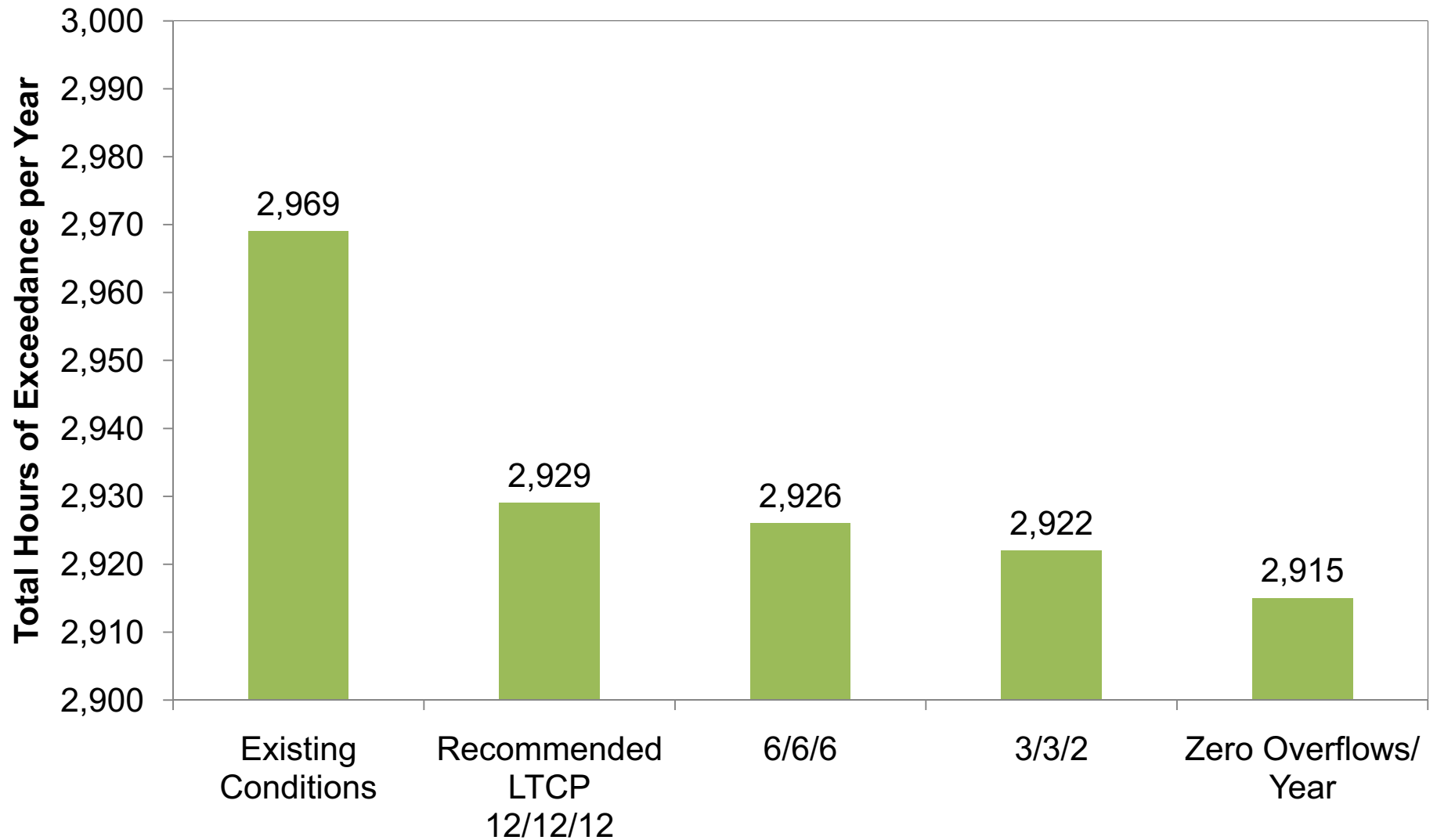


# Ohio Water Quality Standards for E. coli during Recreation Season (May 1 to October 31)

<i>Recreation Use</i>	<i>E. coli (colony counts per 100 ml)</i>	
	<i>Seasonal geometric mean</i>	<i>Single sample maximum<sup>1</sup></i>
<i>Bathing water</i>	126	235
<b><i>Class A primary contact recreation</i></b>	<b>126</b>	<b>298</b>
<b><i>Class B primary contact recreation</i></b>	<b>161</b>	<b>523</b>
<i>Class C Primary Contact Recreation</i>	206	940
<i>Secondary Contact Recreation</i>	1030	1030



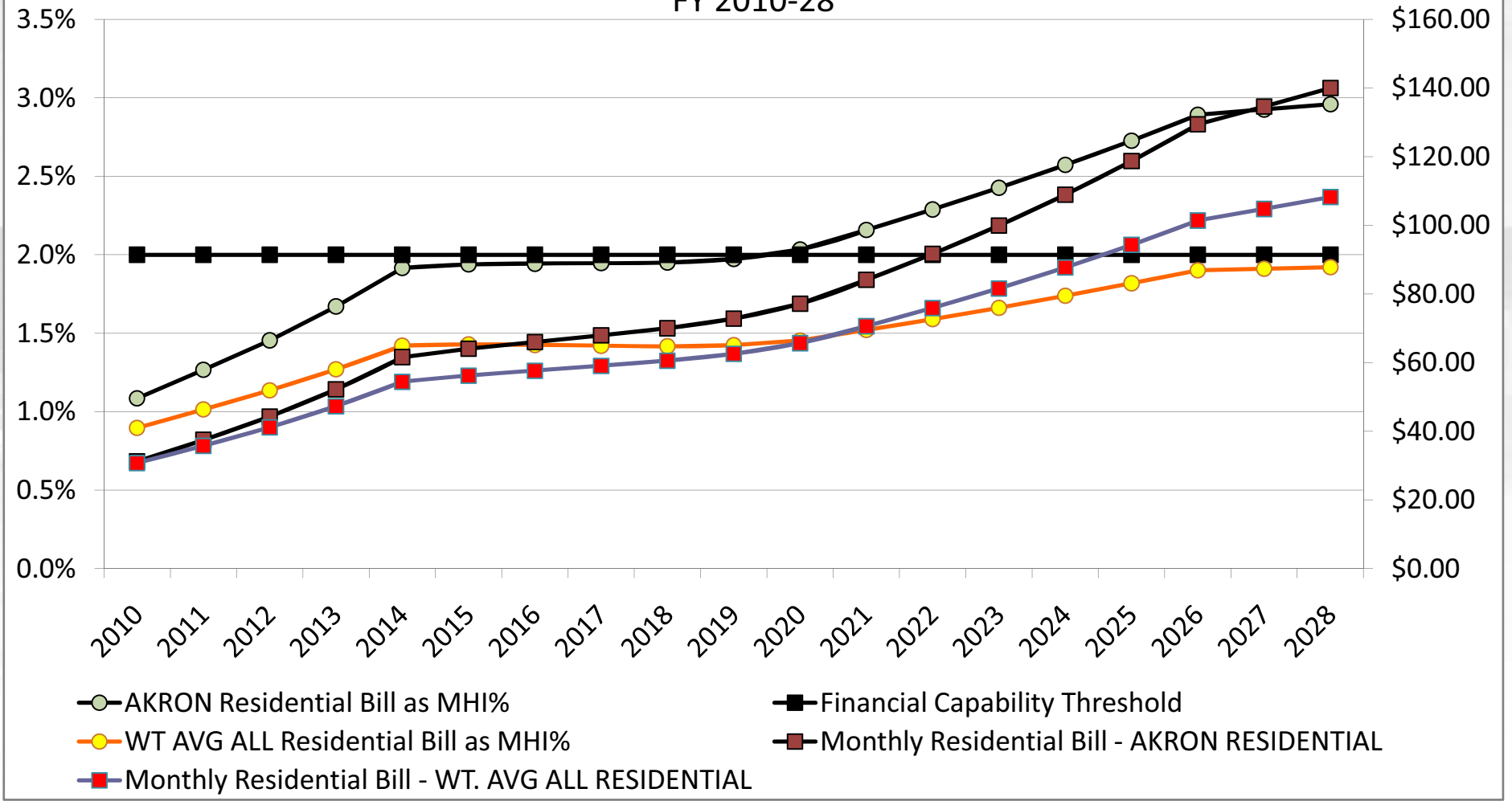
## Estimated E. coli Hours of Exceedance per Year



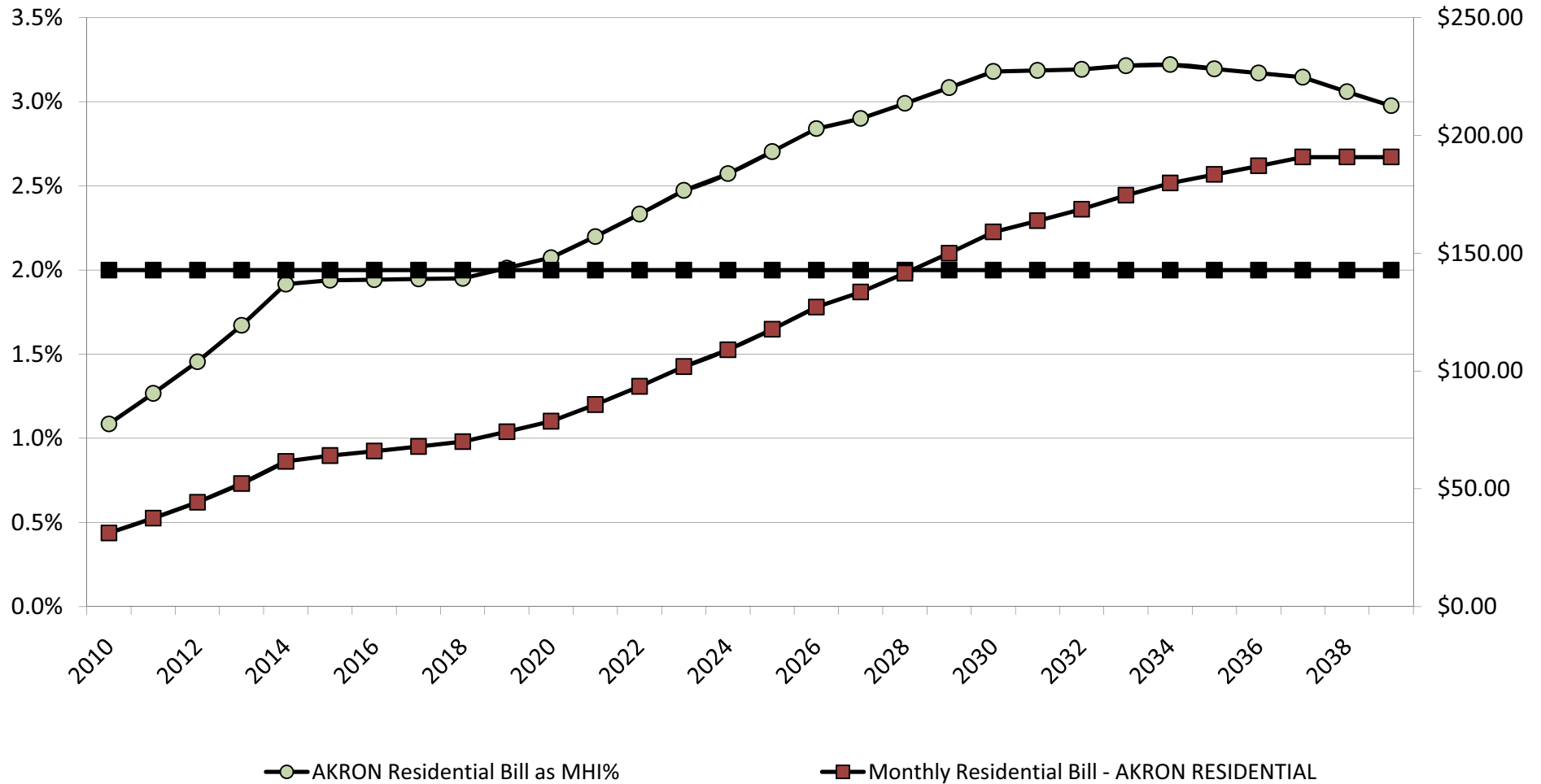
<b>Permittee Financial Capability Indicators Score</b> (Socioeconomic, Debt and Financial Indicators) <ul style="list-style-type: none"> <li>•Bond Rating</li> <li>•Unemployment</li> <li>•Net Debt</li> <li>•Property Tax Collection Rate</li> <li>•Median Household Income</li> </ul>	<b>Residential Indicator Score</b> <b>Cost per Household as a Percentage of Median Household Income</b>		
	Low (Below 1.0%)	Mid-Range (Between 1.0 and 2.0%)	High (Greater than 2.0%)
Weak (Below 1.5)	Medium Burden	<b>High Burden</b>	High Burden
Mid-Range (between 1.5 and 2.5)	Low Burden	Medium Burden	High Burden
Strong (Above 2.5)	Low Burden	Low Burden	Medium Burden



## Akron Public Utilities Bureau Projected Residential Bills as a Percent of Median Household Income 12 Overflow LTCP FY 2010-28



Akron Public Utilities Bureau  
 Projected Residential Bills as a Percent of Median Household Income  
 6-6-6 Overflow LTCP EXTENDED  
 FY 2010-38



<b>Selection Factor</b>	<b>3-3-2 Plan</b>	<b>6-6-6 Plan</b>	<b>12-12-12 Plan</b>
CSO Policy – Presumption Approach	1	2	3
Knee of the Curve	1	2	3
Water Quality Benefits	1	2	3
Implementation Schedule (18 years)	3	2	1
Other Clean Water Requirements	1	1	1
Financial Capability	3	2	1
Affordability	3	2	1
Public Comments	3	2	1
<b>Total Ranking Scores</b>	<b>16</b>	<b>15</b>	<b>14</b>



PROJECT TYPE	LEVEL OF CONTROL	ESTIMATED PROJECT COST (in 2010 dollars)
<b>LTCP PROJECTS</b>		
Rack 39 Separation	Completed	\$421,000
Rack 9 Separation	Completed	\$296,000
Rack 40/31 Storage Basin	Completed	\$22,000,000
Storage Basins	12 overflows/year	\$34,000,000
Ohio Canal Tunnel	12 overflows/year	\$90,100,000
North Side Tunnel	12 overflows/year	\$61,300,000
Sewer Separation Projects		\$27,400,000
<b>Total LTCP Projects</b>		<b>\$235,517,000</b>



<b>PROJECT TYPE</b>	<b>LEVEL OF CONTROL</b>	<b>ESTIMATED PROJECT COST (in 2010 dollars)</b>
<b>CONSENT DECREE PROJECTS</b>		
WPCS Improvements	Step Feed Process	\$50,000,000
Mud Run Pump Station		\$20,000,000
CMOM	\$2M/year	\$36,000,000
Post Construction Monitoring		\$2,000,000
Supplemental Environmental Project	SEP	\$900,000
Civil Penalties		\$500,000
<b>Total Consent Decree Projects</b>		<b>\$109,400,000</b>



PROJECT TYPE	LEVEL OF CONTROL	ESTIMATED PROJECT COST (in 2010 dollars)
<b>NON-CONSENT DECREE PROJECTS</b>		
Existing System Reinvestment	\$9M/year	\$162,000,000
NPDES Permit Compliance		\$29,000,000
Storm Water	\$2M/year	\$36,000,000
Disinfection Improvements		\$17,000,000
<b>Total Non-CD Projects</b>		<b>\$244,000,000</b>



<b>PROJECT TYPE</b>	<b>ESTIMATED PROJECT COST (in 2010 dollars)</b>
<b>LTCP Projects</b>	<b>\$235,517,000</b>
<b>Consent Decree Projects</b>	<b>\$109,400,000</b>
<b>Non-Consent Decree Projects</b>	<b>\$244,000,000</b>
<b>TOTAL CLEAN WATER PROGRAM</b>	<b>\$588,917,000</b>



# Akron has Submitted Consent Decree Required Information to USEPA / OEPA

- Draft Emergency Response Plan (February 12<sup>th</sup>)
- Preliminary Cost-Benefit Information (March 15<sup>th</sup>)
- Draft CMOM Program (May 12<sup>th</sup>)
- Updated Financial Capability Information (May 15<sup>th</sup>)



# Akron has Submitted Consent Decree Required Information to USEPA / OEPA

- Updated Cost-Benefit Information  
(May 15<sup>th</sup>)
- Additional Cost-Benefit Information  
requested by USEPA (June 15<sup>th</sup>)
- Proposed Long Term Control Plan  
(August 15<sup>th</sup>)

SEWER OVERFLOW RESPONSE  
and  
NOTIFICATION PLAN

for the

City of Akron  
Sewer Maintenance  
Utilities Field Operation Division  
Public Utilities Bureau



Issued to: \_\_\_\_\_ Issue Date: \_\_\_\_\_

Revision Date: \_\_\_\_\_



# Implementation Schedule – Order of Projects by Bidding Date

- Rack 39 Separation – COMPLETED
- Rack 9 Separation – COMPLETED
- Rack 40/31 Storage Basin – COMPLETED
- Racks 25 and 8 Separation
- WPCS Upgrades – Step Feed
- Rack 21 Separation



# Implementation Schedule – Order of Projects by Bidding Date

- Mud Run Pump Station
- Racks 30 and 13 Separation
- Ohio Canal Tunnel
- WPCS Disinfection
- Remaining Racks
- North Side Tunnel



# AKRON'S ALTERNATIVE PLAN



# Akron Proposed an Alternative Plan for Further Discussion and Consideration

- City is willing to go to a higher level of control
  - As long as we have adequate time to implement the projects
  - Agree that this will be High Burden to ratepayers
- Allow USEPA and OEPA to select the level of control for CSO improvements
- Keep expenditures at or near 2.1% median household income
- Schedule will be whatever is needed to complete projects with revenues generated at 2.1% threshold



# NEXT STEPS



# Next Steps

- Held webinar with USEPA/OEPA/DOJ on September 14<sup>th</sup> to review plan and answer agency questions
- Evaluate USEPA comments
- City will utilize CAG input, public comments, and results of further agency discussions to submit Final LTCP Update and Report – October 15, 2010



# We Would Appreciate Your Feedback on the Proposed Long Term Control Plan

- Ask questions/provide comments tonight
- Fill out comment sheet and leave on front table
- Email comments to Mr. Pat Gsellman at [pgsellman@akronohio.gov](mailto:pgsellman@akronohio.gov)
- Information available on City's website <http://akronohio.gov/cso/>





# Questions

September 22, 2010





# Thank You for Coming Tonight

September 22, 2010

