# Recommended Changes to ORSANCO's Recreational Use Criteria

ORSANCO POTW Advisory Committee
Presentation to ORSANCO's Technical Committee
February 7-8, 2012
Cincinnati, OH

# Why are we recommending changes?

- Appropriate standards are needed that reflect
  - Updated science
  - Factors in decisions about use of Ohio River for recreation
- Standards guide regulatory decisions
  - Impact cost of complying with federal and state consent decrees
    - $10 Billion+ for 8 utilities
  - Impact outcome of Ohio River bacteria TMDL
  - Impact future MS4 requirements

# Why are we recommending changes? (2)

- Utilities have a fiduciary responsibility to show that ratepayer investment will improve public health protection

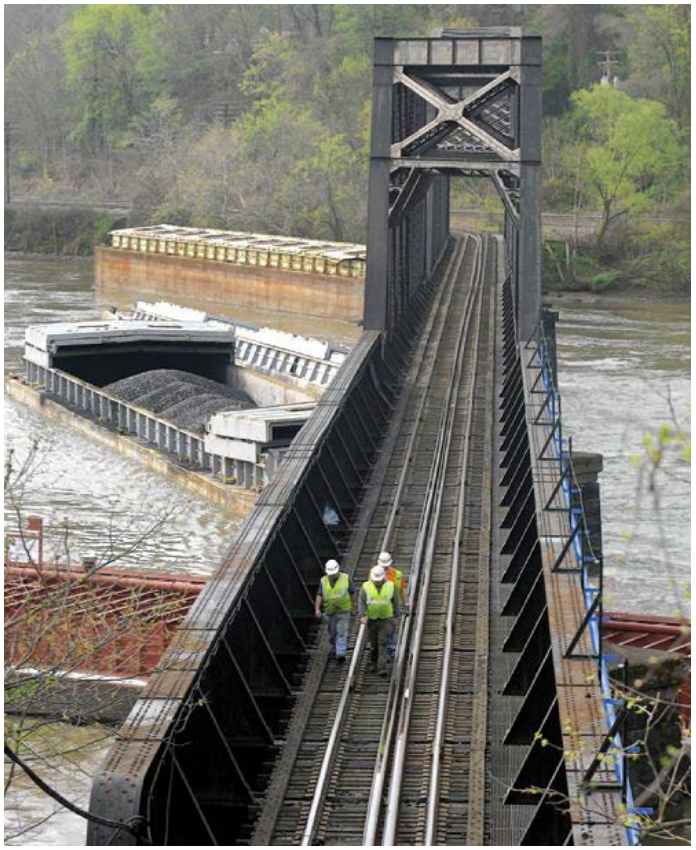
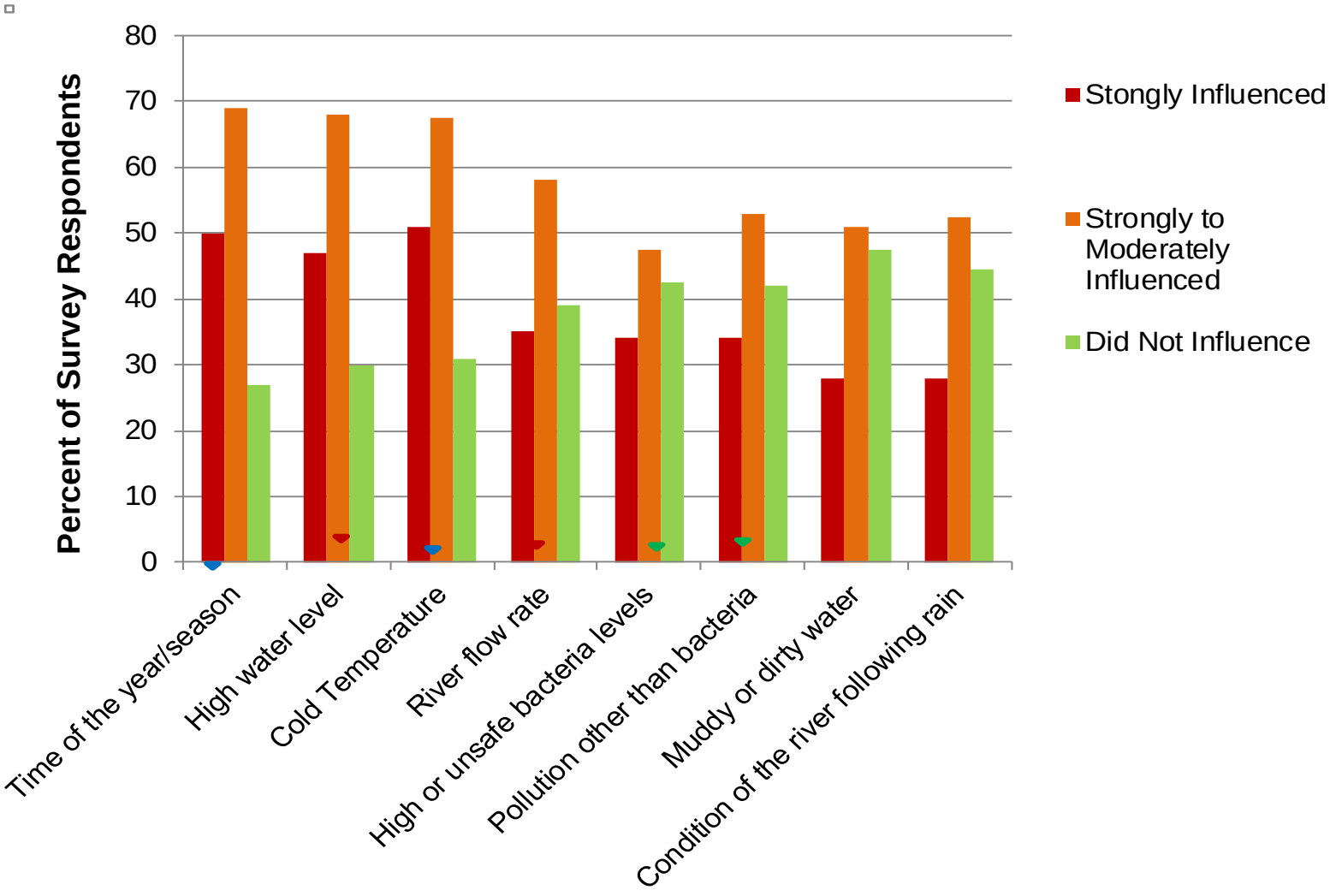


Photo of barge hitting bridge after high flows broke it from mooring

# High stage/flow are more frequently used factors influencing Ohio River recreational activity




**See Appendix C, Figure 3. Figure was developed from data presented in ORSANCO's 2009 Recreational Use Survey, Figures 37-39.**

# What are we recommending?

- Adopt new recreational use criteria in October 2012
  - Focus on *E. coli*
  - Recreation season (May to October) geometric mean
  - Change “single-sample” maximum to a statistical threshold value of 25%
  - Sub-categories of recreational uses based on stage because of safety

# Focus on *E. coli*

- Fecal coliform are not included in EPA's recommended recreational water quality criteria (RWQC)
- *E. coli* (not enterococcus) is currently used to
  - Assess health of Ohio River
  - Establish NPDES permit limits
- Experts prefer longer data records for RecUse management
- Adopting enterococcus and *E. coli* criteria would be duplicative

# Recreation Season Geometric Mean

- In a Jan. 25, 2012 webinar*, EPA stated:
  - Not recommending rolling assessment periods
  - 30 to 90 day assessment period is a balance between accuracy and timeliness
    - Longer assessment periods are more accurate
- Current sampling of Ohio River
  - Weekly ORSANCO monitoring
  - Special monitoring conducted for public events
  - Data collected by utilities (dry and wet weather events)
  - No sampling during flood stage due to safety

**US EPA webinar to solicit clarifying questions on draft RWQC. Jan. 25, 2012*

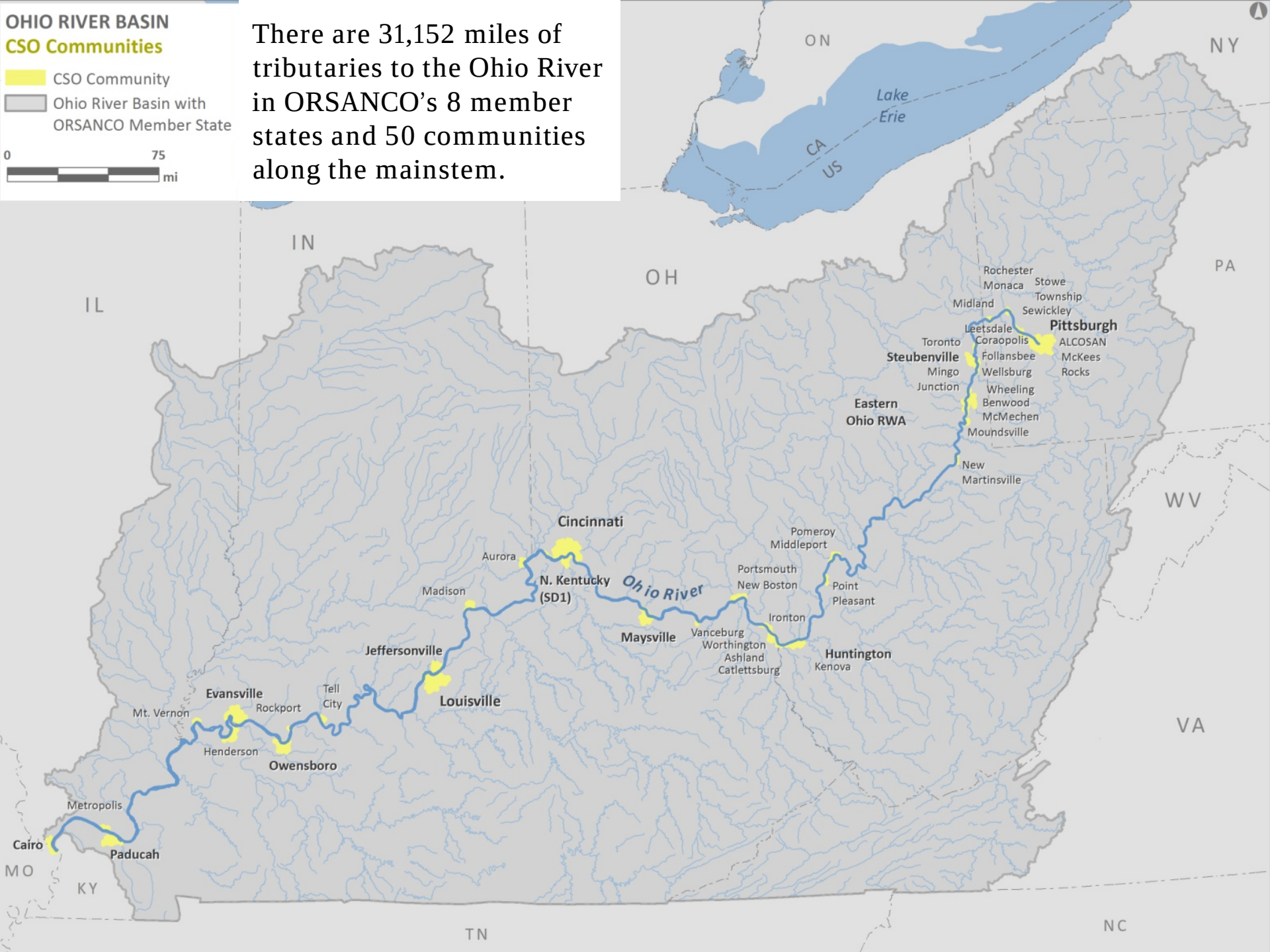
# Recreation Season Geometric Mean (2)

- Adopting a 90d assessment period would result in 2 reporting periods
  - May, June, July
  - August, September, October
- But, a longer period means more data!
  - More reflective of attainment (or non-attainment) of criteria

# Replace Single-Sample Maximum with Statistical Threshold Value (STV)

- EPA clarified that single-sample maximum was inappropriate
  - Fecal indicator bacteria are an indicator of fecal sources
  - Do not reflect age or condition of source
  - There is no way to reliably use a single value as a value that should never be exceeded

*US EPA webinar to solicit clarifying questions on draft RWQC. Jan. 25, 2012*


OHIO RIVER BASIN
CSO Communities
CSO Community
Ohio River Basin with ORSANCO Member State
0
75
mi
There are 31,152 miles of tributaries to the Ohio River in ORSANCO's 8 member states and 50 communities along the mainstem.
ON
NY
Lake Erie
CA
US
IN
OH
PA
IL
WV
VA
KY
TN
NC
MO
Rochester
Monaca
Stowe Township
Midland
Sewickley
Pittsburgh
Leetsdale
Coraopolis
ALCOSAN
Toronto
Steubenville
Follansbee
McKees Rocks
Mingo Junction
Wellsburg
Wheeling
Benwood
McMechen
Moundsville
Eastern Ohio RWA
New Martinsville
Cincinnati
Aurora
Madison
N. Kentucky (SD1)
Ohio River
Pomeroy
Middleport
Portsmouth
New Boston
Point Pleasant
Ironton
Maysville
Vanceburg
Worthington
Ashland
Catlettsburg
Huntington
Kenova
Jeffersonville
Louisville
Evansville
Mt. Vernon
Rockport
Tell City
Henderson
Owensboro
Metropolis
Cairo
Paducah

# Replace Single-Sample Maximum with Statistical Threshold Value (STV) (2)

- EPA is recommending a STV of 25%
  - Consistent with 1986 criteria
  - Recognizes that for attainment both geometric mean AND STV must be met

# Sub-categories of recreational use

- Consistent with EPA guidance (see Appendix F)
- Reflects results of ORSANCO's RecUse survey
- Provides meaningful targets for CSO and TMDL planning
  - Eliminates need for TMDL critical period to account for flood stage

# Sub-categories of recreational use (2)

- Appendix C provides rationale
- Appendix D lists Action Stage and Flood Stage
  - Action Stage: Secondary contact recreation (boating, wading)
  - Flood Stage:  Non-contact recreation

# Action and Flood Stage Frequencies are Low

**Table 2. Stage and Frequency of Daily Average Stage Occurrence Corresponding to NWS Flood Categories for USGS Gages[1,2]**

| Flood Stage Category | Sewickley | | Cincinnati | | Markland Dam | | Louisville | | Evansville | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Stage (ft) | % of Time | Stage (ft) | % of Time | Stage (ft) | % of Time | Stage (ft) | % of Time | Stage (ft) | % of Time |
| Action | 19.4 | 1.8% | 40 | 8.5% | 49 | 0.2% | 53 | 2.1% | 24 | 57% |
| Flood | 25 | X | 52 | 0.7% | 51 | 0.1% | 55 | 1.6% | 42 | 1.1% |
| Moderate Flood | 29 | X | 56 | 0.2% | 62 | X | 65 | 0.2% | 48 | X |
| Major Flood | 32 | X | 65 | X | 74 | X | 73 | X | 52 | X |

Notes:

[1]Because of the variability of river levels over a day, the frequency that the stage exceeds the indicated criteria is likely higher than the value shown.

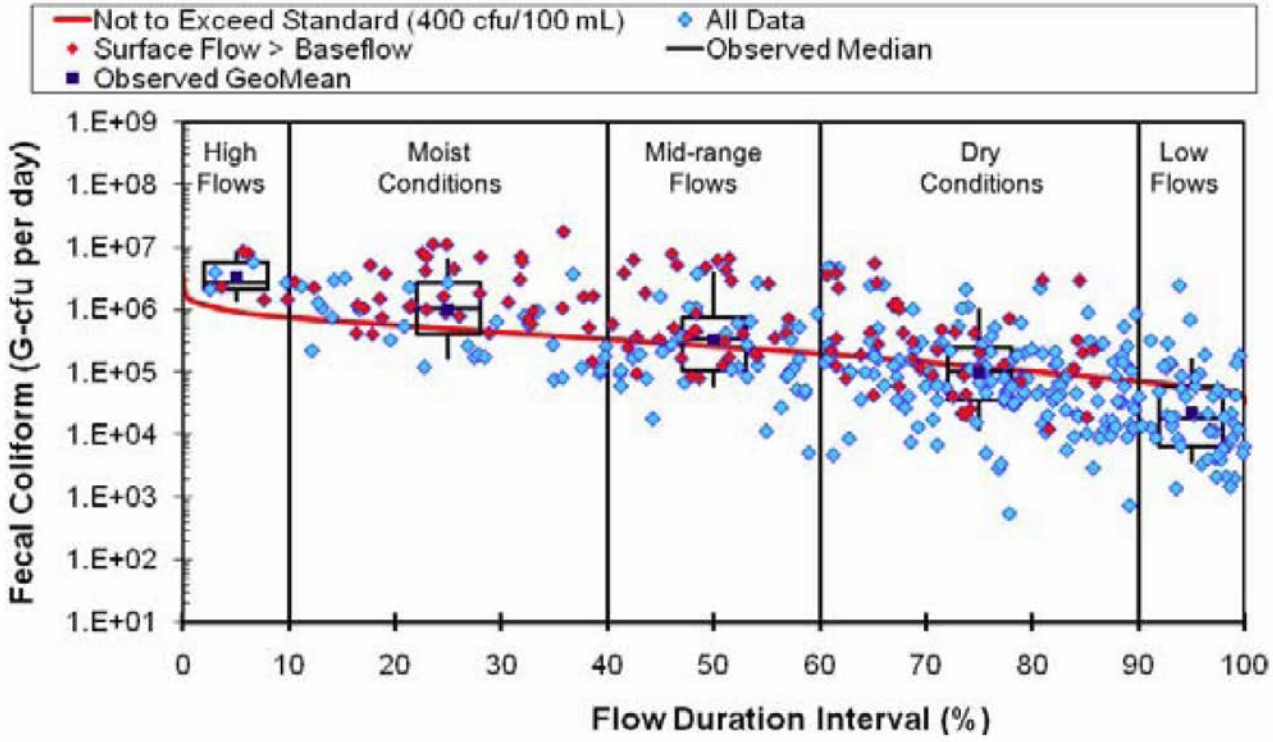
[2]The period of record for the daily stage data used to develop these frequencies are as follows:

Sewickly: 1991-2011
Cincinnati: 1988-2011
Markland Dam: 1970-2010
Louisville: 1975-2010
Evansville: 1975-1996

"X" : the daily average river level has not been observed at the indicated stage for the period of record shown

Evansville AS: Levee Authority starts flood control. Action Stage in Evansville roughly corresponds to a velocity of 2 mph, which has been cited as an upper limit for safe swimming.

# Example: Bacteria Data Near Pittsburgh



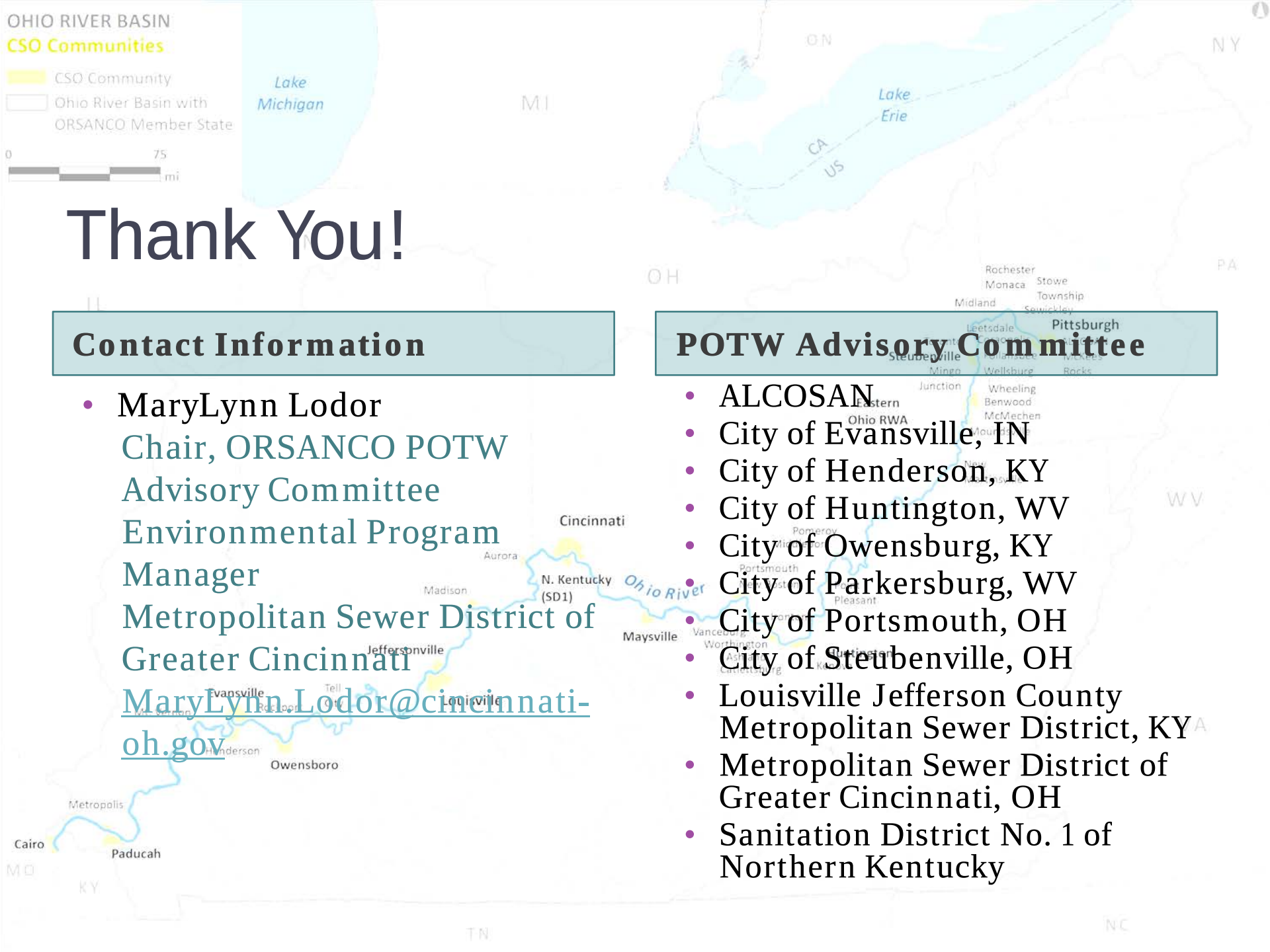

*EPA. 2010. Ohio River Bacteria TMDL Development: Summary of Data Analysis and Conceptual Model Development. August 2010.*

# Why do POTWs Care?

- **We are stepping up to this challenge:**
  - **We have spent, and continue to spend, billions to control sewer overflows**
    - Implementing controls, sometimes with partners
    - Costs projected to exceed $10 billion for 8 utilities
    - One community expects total program cost could exceed $4 billion
- **We have more to do:**
  - **We need to spend money wisely so there is money left for future costs**
    - Failing infrastructure, MS4, nutrient removal, emerging contaminants
  - **Political pressure associated with increased rates**
    - Average of 15 percent per year
    - One community's rates have increased by 264 percent!
  - **Every dollar spent needs to have demonstrated public health and environmental benefits**
    - Fiduciary responsibility to customers

# Closing

- Paper and appendices provided to ORSANCO on January 11, 2012
- POTW Advisory Committee to comment on US EPA's criteria by February 21, 2012
- Request dialogue with PCS Committee prior to June 2012 meeting
  - Review of science in Appendices




# Thank You!

## Contact Information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## POTW Advisory Committee

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- City of Henderson, KY
- City of Huntington, WV
- City of Owensburg, KY
- City of Parkersburg, WV
- City of Portsmouth, OH
- City of Steubenville, OH
- Louisville Jefferson County Metropolitan Sewer District, KY
- Metropolitan Sewer District of Greater Cincinnati, OH
- Sanitation District No. 1 of Northern Kentucky