Idealism vs. Realism: Implementing Akron’s Watershed Control Program

Jessica Glowczewski
Watershed Superintendent
Akron Water Supply

• 35 MGD average
• Conventional Filtration Plant
• Provides water to about 300,000 people
• Located in Kent, Ohio, about 12 miles from first tap in distribution system
• Source water comes from Lake Rockwell
Akron Watershed Division

• UCRW 207 miles
• 3 Reservoirs in source water system, East Branch, LaDue and Rockwell.
• Akron owns approximately 12% of the source water area (15,941 acres), including 36.3 miles (31%) of river frontage
• 8 employees:
  • Watershed Superintendent
  • Recreation and Lands Supervisor
  • Laboratory Analyst I
  • Laboratory Analyst II
  • Utilities Maintenance Worker (x2)
  • Engineering Co-op
  • High School Intern
Background of Akron’s Watershed Control Program

- Long Term Stage 2 Enhanced Surface Water Treatment Rule
  - After a two year survey done by the OEPA *Cryptosporidium* oocysts (0.89 cysts in a two year average) were found in the source water, placing Akron Water Supply in bin 2.

Akron chose three options:
- Combined Filter Effluent
- Individual Filter Effluent
- Watershed Control Program
Background of Akron’s Watershed Control Program

- Akron’s Watershed Control Program Commitments:
  - Source Water Area Monitoring
  - Sampling: Stream, Reservoir and Canoe
  - Wildlife Population Control on Akron Properties
  - Watershed BMPs
  - Education and Collaboration
Background: Watershed Monitoring

Source Water Area Monitoring Program (SWAM)

- Regular monitoring of potential pollution sources
  - HAZMAT
  - WWTP
  - Agriculture
  - Industrial/construction
  - Other identified sources

Additional Monitoring:

- EPA approved Bio-solids application sites (spring and fall)
- Watershed Agriculture
- Akron properties leased for agricultural use
19 sites on the Cuyahoga River and major tributaries, LaDue, East Branch and Rockwell Reservoirs are all sampled monthly for:

- Physical characteristics (temp, turbidity)
- Chemical characteristics (pH, DO, phosphates, nitrates, nitrites)
- *E. Coli* and fecal coliform
- Algae monitoring (on reservoirs)
In addition to stream samples (obtained from bridges)
- Same parameters tested except for the DR900
- 8 sections of Cuyahoga River, Spring and Fall
More Plans, More Problems

Major areas where reality and idealism collided:

- Stream sampling
- Jurisdiction and authority
- Work load
- Feasibility
Stream Sampling

What we thought we could do vs. what we can do

- Collect all 19 samples in 2 days each month for the entire Upper Cuyahoga River watershed
- Process all 19 of those samples in 2 days
- Get re-samples within 72 hours for sites exceeding the set action determining limits (ADLs)
- Quickly respond to repeat sampling
Stream Sampling: Sample Processing Times

Field Testing
- DR900 tests per sample:
  - Nitrate: 6 minutes
  - Nitrite: 20 minutes
  - Orthophosphate: 2.5 minutes (reactive P)

Laboratory Testing
- Bacteria Testing:
  - 24 hours to process and read
- Suspended Solids per sample:
  - 2 ½ hours to process and weigh
- Ion Chromatography:
  - Prep: 10 min per sample
  - Run time: 25 min per sample

Table Phosphorus
### Old Sites

<table>
<thead>
<tr>
<th>#1</th>
<th>Cuyahoga River at Rockwell Spillway</th>
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</thead>
<tbody>
<tr>
<td>#2</td>
<td>Eckert Ditch at Dawley Road</td>
</tr>
<tr>
<td>#3</td>
<td>Cuyahoga River at Price Road</td>
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<tr>
<td>#4</td>
<td>Cuyahoga River at OH-303</td>
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<tr>
<td>#11</td>
<td>Snow Lake with Bridge Creek at Repids Road</td>
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<tr>
<td>#12</td>
<td>Cuyahoga River at Aquilla Road</td>
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<tr>
<td>#14</td>
<td>Cuyahoga River at OH-322</td>
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<tr>
<td>#15</td>
<td>Cuyahoga River at Stillwell Road</td>
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<tr>
<td>#16</td>
<td>Tare Creek at Durkee</td>
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<tr>
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<td>Tare Creek at Burton-Windsor Road</td>
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<tr>
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<td>Wilkum Creek at Middlefield</td>
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Jurisdiction and Authority

- Authority to police pollution is based in other agencies
  - Health Department
  - EPA
  - Department of Agriculture

- Specific issues?
  - Septic Systems
  - Privately owned package plants
  - Agricultural run off including pasture runoff
Jurisdiction and Authority- Septic Systems

- Locating and verification of failing systems
- $$$ and support
Jurisdiction and Authority—WWTPs

- 74 permitted WWTPs discharging in the UCRW consisting of the following types:
  - Municipal/County operated
  - Mobile Home Park operated
  - Industrial
  - Other
Jurisdiction and Authority-Ag runoff
Work Load
Work Load

- Hiring challenges ($$)
- Brand new staff
- Much more work than you might think….
Feasibility

- Promises vs. practicality
- Agency Assistance for enforcement
- continual “improvement” of the program

I think there is something wrong with these statistics

I never argue with numbers

... 

They always win in the end
Feasibility - Funding

- Grants sound great but…

- Funding for Watershed comes out of the Water General Fund
  - Shared with Water Supply Division
Feasibility - Priorities

- Education
- Acquisition/Preservation
- Restoration
- Source Water Monitoring
- Sampling
- Watershed Control Program
- Without funding
Despite the Challenges…

WORK IN PROGRESS
Thank You!

Jessica Glowczewski
Watershed Superintendent