Incorporating Asset Management in Drinking Water Regulations

October 14th, 2021
Welcome!

All attendees are in listen-only mode. Please do not unmute yourself during the presentation.

We will be recording this webinar. Please do not turn on your video during the presentation.

The recording will be posted online and a link emailed to all registered attendees 1-2 weeks after the webinar.

Check out https://www.epa.gov/dwreginfo/drinking-water-training for more drinking water webinars and trainings.
We encourage attendees to ask questions throughout the presentation by using the chat feature.

DIRECT YOUR QUESTIONS TO “Q AND A MODERATOR”

Chat box will pop up. Type in your questions at the bottom. 

PLEASE DIRECT YOUR QUESTIONS TO “Q AND A MODERATOR”
Introduction to Promoting Asset Management

Alison Flenniken, EPA HQ
America’s Water Infrastructure Act of 2018 (AWIA)

AWIA Section 2012 amends the Safe Water Drinking Act (SDWA) and requires:

I. That the states amend the state capacity development strategy to include a description of how the state will encourage the development of asset management plans that includes best practices and include any training, technical assistance and other activities to help implement asset management plans.
   i. States have been granted more time to work on their strategies and are now expected to submit their revised strategies for approval by December 31, 2022.

II. That the state includes an update of these activities to encourage asset management practices in the Governor’s report.
Options to Promote Asset Management

- Voluntary Incentives
- Incentives
- Mandates
Today’s Speakers

**Connecticut**'s requirement for small community water systems (serving between 25 and 1,000) to have a fiscal and asset management plan.

*Mandy Smith, Connecticut Department of Public Health*

**New Jersey**’s requirement for public water systems with greater than 500 service connections to implement an asset management plan.

*Brandon Carreno, New Jersey Department of Environmental Protection*

**Ohio**’s requirement for public water systems to have an asset management program, as well as track and report metrics of implementation.

*Sean Stephenson, Ohio Environmental Protection Agency*
CT DPH Drinking Water Section

Fiscal & Asset Management Plans for small CWS

Mandy B. Smith, Supervising Sanitary Engineer
October 14th, 2021
Outline

- DWS Responsibilities/Capacity Development
- Impetus for New Requirement
- Review of New Requirement
- Discussion of Hydropneumatic Tank Results
- Initial Results
- Moving Forward
CT DPH Drinking Water Section (DWS) Responsibilities

- Regulate over 2,400 Public Water Systems with over 4,000 sources

- CT DPH: Primacy over SDWA and State Public Health Laws that protect/provide for Public Drinking Water
  - 17 different Federal Rules
  - 13 distinct State PWS planning/permitting/protection laws – High Quality Sources

- 2.9 million CT residents served
- 90 CWS serve over 1,000 people
- 300 CWS serve under 1,000 people
- 1,800 non-community PWS
Cap Dev Strategy that addresses PWS Technical, Managerial and Financial needs to maintain viable systems per the SDWA 1996 Amendments for **New** and **Existing** PWS – Integrated with all we do
Capacity Assessment Tool (CAT): Small CWS

- Capacity Assessment Tool
- 2015-2016 Data set for Small CWS only
- Used in WUCC Coordinated Plans to assess Small CWS Capacity Issues
- Want to keep data updated to identify problem PWS and provide targeted technical assistance
- Sanitary Survey Capacity Questionnaire required at the time of each CWS SS

2016 Scorecard Map

Red: Total Score < 40
Yellow: Total Score 40-69
Green: Total Score >=70

TMF Total Scores out of 100

Environmental Health and Drinking Water Branch
Why Care about Capacity & Aging Infrastructure?

3 Storms
Aug. 2011 – Irene
Oct. 2011 – Alfred
Oct. 2012 – Sandy

Small Systems:
Boil Water Advisories,
No Resources,
Restricted Access

Large Systems:
Extended Period on
Generators,
Limited Access,
Communication Issues

Environmental Health and Drinking Water Branch
And Then This Happened....
2015 Hydropneumatic Tank Explosion
In Southeastern CT
Hydropneumatic Tank Assessment Results

Environmental Health and Drinking Water Branch
Put thoughts into Action

• Exploding Tank, Scorecard results & three storms shed light on many problems

• Actions Taken:
  • New regulation for Emergency Power at all Critical Facilities for all CWS
  • Incorporated Large CWS into statewide WebEOC software, updated contact and facility info
  • DWSRF programs for Generator funding and state bond subsidization for regionalization projects
  • Restarted WUCC and State Water Plan planning processes
  • Contract with RCAP for Small CWS Technical Assistance with F&AM, compliance
  • Fiscal & Asset Management Requirement for small CWS

(CWS >1,000 or 250 service connections already incorporate Fiscal and Asset Management/Unaccounted For Water into planning into required Water Supply Plan)
• Applicable to Small CWS serving <1,000 & not required to prepare Water Supply Plans or regulated by PURA (Approx 300 CWS in CT)

• Requires Fiscal and Asset Management Plan by **1/1/2021**
  • Includes: Asset Inventory, Asset Useful Service Life Assessment incorporating Maintenance/Service History and Manufacturer’s Recommendations and Asset Rehabilitation/Replacement Plan

• Unaccounted For Water Loss – amount, cause(s), and steps to reduce

• Prioritized Hydropneumatic Storage Tank Assessment 5/2/19

• Plan shall be updated Annually

• Plan shall be made available to the Department upon request
Format to meet New Requirements

• Use DWS Fiscal & Asset Management Plan Template
  • DWS template incorporates all mandatory requirements with Instructions and guidance document
  • Template announced in DWS Circular Letter 2020-006
  • Available on DWS Small System Capacity webpage
  • Planned In-person trainings on template had to be conducted remotely due to COVID-19

• 2-page Fiscal & Asset Assessment for Hydropneumatic Tanks
  • Was provided for PWS use in January 2019
  • Small System Capacity Development webpage
Guidance to meet New Requirements

Environmental Finance Center Network (EFCN) Webinar Series

• 4-Part Series developed in partnership with CT DPH DWS
• Recorded and available on our Small System Cap Dev Website / CtTRAIN

EPA Technical Assistance Contracts
One-on-One help with fiscal and/or asset management up to 40 hrs/PWS by EFCN
Small Group help with preparing template through Atlantic States Rural Water Assoc.

Written Resources on Asset Management:
EPA Drinking Water Capacity Website: many resources available for all PWS types
SWEFCN Asset Management Switchboard: compilation of free AM tools and guidance
EFCN & RCAP: federal technical assistance contractors: AM/FM specialty
Small Community Fiscal and Asset Management Plan Requirements - NEW!

Pursuant to the new Connecticut General Statutes (CGS) 519a-37e, all small community public water systems serving < 1,000 year-round residents shall complete a fiscal and asset management plan for all capital assets by no later than January 1, 2021. To aid small CWS in the development of the initial fiscal and asset management plan, a Fiscal & Asset Management Plan Template, Instructions and Guidance Document have been prepared and are available at the links below.

- Fiscal and Asset Management Plan Template for Small Community Public Water Systems (PWS)
- Fiscal and Asset Management Plan Template Instructions
- Fiscal and Asset Management Plan Appendix A: For Community PWS applying for DWSRF loans
- Fiscal and Asset Management Plan Guidance Document
- Example of Completed Fiscal and Asset Management Plan Template

Small CWS Fiscal and Asset Management Plan Training (June 2, 2020) - Slides - To view this webinar please click here

As a follow up to requests from small community PWS, DPH is making available a blank budget spreadsheet and weekly meter reading trend spreadsheet in Excel. The excel spreadsheets are below and have formulas to automatically sum revenues and expenses and create graphs to trend water production data. Please feel free to use these tools as you work to develop your individual fiscal and asset management plan.

- Blank PWS Budget Spreadsheet
- Weekly Meter Reading Tracking and Trending Spreadsheet
Results of Hydro Tank Assessment

Number of Hydro Tanks Assessed: **162 Tanks** at 124 PWS

Ave. Age of Hydro Tanks Currently in Service: **32.4 Years** (66 tanks age unknown- no records)

Oldest Hydro Tank Still In Service: **69 Years Old** (11 tanks >50 years)

# of Tanks Inspected in the past 5 years: **29** (17.9%)

# of Tanks that have been repaired since installation: **9** (5.6%)

% of PWS that eliminated Hydro Tank Proactively: **40.4%**

% of PWS that bill separately for water: **49.2%**

% of PWS that have reserve funds to pay for tank repair/replacement: **37.9%**

# of PWS interested in DWSRF funding for tank replacement: **36**
Fiscal & Asset Mgmt Plan Statute

• Important/Easier for new Regulations to have little fiscal impact to Agency

  • Stress that the plan is a tool for the utility, not for DPH

    • No DPH approval, but we do review and provide comments
      • Initiate and foster discussion on planning and F&AM

• Reviewing at the time of next Sanitary Survey (3 year cycle to see them all)
• Jan 1, 2021 Due Date

• Asked CWS to complete F&AM Certification

• Currently at 61% Compliance Rate
Initial Surveyor Impressions

- Good Certified Operator was a huge asset in helping getting plans completed
- General Info/O&M/Asset Management Portions are more complete than Fiscal Management
- Large amount of aging infrastructure still in use with no planned replacements
- Many small CWS are not charging adequate rates for full cost of pricing
- Unaccounted For Water is hard to get a grasp on without customer meters
- CWS are starting to realize what a big responsibility providing safe and adequate water is – if they are not able or willing, starting to look for other options
Moving Forward

• Work with Small CWS to fully complete F&AM plans

• How to make them implement the projects identified in F&AM plan?

• DWSRF Partnerships

• New Regulation Passed 2021 Legislative Session requiring a Capacity Implementation Plan to be in place by 1/1/2025
Thank You!

Mandy B. Smith
Mandy.Smith@ct.gov
860-509-7333
Overview of NJ Water Systems

- Approximately 3550 public water systems in NJ
  - 570 Community
  - ~2350 Transient Non-Community
  - ~660 Non-Transient Non-Community
- Mixture of Surface Water & Groundwater
- Ownership includes Municipal, Authorities/Commissions, Investor-owned & private.
- Serves approximately 89% of the state’s total population (8.8 million), remaining 11% use private wells
- NJDEP is the agency with SDWA primacy for New Jersey
  - Authority over PWS finances with Board of Public Utilities and Department of Community Affairs
Brief History of Asset Management in NJ

- Water Supply Management Act- Rehabilitation Requirements (N.J.A.C. 7:19-6.6)
  - *Limited enforceability, compliance, and effectiveness*

  - *Developed guidance and Best Management Practices for Drinking Water & Wastewater systems*

- 2014- DWSRF IUP Amendments
  - *Began requiring Asset management plans for water systems seeking DWSRF Loans*

- 2017- Water Quality Accountability Act (WQAA)
  - *Requires asset management plans for public water systems with >500 service connections*

- 2018- Joint Legislative Task Force on Drinking Water Infrastructure
  - *Outlined policy changes and needs for oversight on drinking water infrastructure*

- 2021- S647 Amendments to the WQAA
  - *Enhancements to cybersecurity, other reporting requirements*
Overview
Water Quality Accountability Act (N.J.S.A. 58:31-1 et seq.)

- Effective October 19, 2017
  - Applies to public water systems with more than 500 service connections (Water Purveyors)
  - Applies to about 290 public water systems
  - Requirements have the ability to improve the safety, reliability, and administrative oversight of water infrastructure
### VALVES

<table>
<thead>
<tr>
<th>Component</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valves &gt; 12”</td>
<td>Inspect every 2 years – by 10/19/2019</td>
</tr>
<tr>
<td>All other valves</td>
<td>Inspect every 4 years – by 10/19/2021</td>
</tr>
<tr>
<td>All valves</td>
<td>GPS to the extent possible</td>
</tr>
<tr>
<td>Repair broken</td>
<td>Must be repaired when found to be out of service</td>
</tr>
<tr>
<td>valves</td>
<td></td>
</tr>
</tbody>
</table>

### HYDRANTS

- Annual certification of compliance from ranking official
- Cybersecurity plans
- Mitigation Plans
- Asset Management Plan/Program Development & Implementation

<table>
<thead>
<tr>
<th>Component</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>All fire hydrants</td>
<td>Test Annually</td>
</tr>
<tr>
<td></td>
<td>Implement a plan for flushing hydrants and dead mains</td>
</tr>
<tr>
<td></td>
<td>Label each with purveyor’s name and number with paint, brand, or soft metal plate</td>
</tr>
<tr>
<td></td>
<td>GPS to the extent possible</td>
</tr>
</tbody>
</table>
Rulemaking Initiative

Proposed Schedule

- Stakeholder meeting was held on October 22, 2018, by invitation

Proposed Amendments

- WQAA specific criteria

Concepts Being Evaluated

- Water Loss Audit Requirements
  - *Would be included as a component of an asset management program*
  - *Replace Unaccounted for Water in Water Allocation Permits with above metrics*

- Asset Management Program Requirements
  - *Considerations for climate change and staffing*

- Amendments that would allow DEP to request TMF from water systems in additional circumstances.

- Required training for certain municipal officials, Corporate Officers, or MUA Chairpersons

- Updates to Storage requirements

Current Status

- Awaiting final signature of the Governor on S647
Evaluating Asset Management Programs

Needed to consider

■ Lessons learned from calling in Lead and Copper Sampling plans
■ Ability to compile data to allow for comparisons between systems
■ Significant variability in asset management programs between water systems
■ Needed to be submitted in an electronic format (statutory requirement)

Methods to be Used

■ Annual certification form
  – *WQAA requirement, system owner signature*
■ Capital Improvement Report
  – *WQAA requirement*
■ Site visits
■ Requirement for DWSRF loans
Capital Improvement Report

Capital Improvement Report must be submitted every 3 years (April 19, 2022) to the Department. BPU/DCA will automatically receive/have access to this report through the portal.

The template is in the process of being finalized, and work on the electronic portal is underway. Categories for the submittal include:

- Project History
- Transmission and Distribution Mains
- Hydrant and Valve Inspections
- TMF Capacity Characteristics
Annual Certification Form

- Due December 31st each year (recently changed from October 19th)
- Submitted via an electronic portal
- Signed by responsible individuals
  - Municipalities: Mayor or Chief Executive Officer
  - Authorities/Commissions: Executive Director
  - Investor-owned: Responsible corporate officer
WARNING
The Following Information Is Subject To Change
Goals of the Capital Improvement Report

- Evaluate compliance with the Water Quality Accountability Act
- Evaluate quality of Asset Management Plan implementation
- Evaluate costs of compliance & identify financial needs for capital improvements
- Improve Departmental understanding of the TMF capacity, and overall well-being of water systems in NJ
- Provide public access to improve accountability of water purveyor operations
- Provide a consistent points of comparison between different types, ownership, and operating needs of water systems statewide
## Project History

### Projects Planned But Not Yet in Service

<table>
<thead>
<tr>
<th>Type of Asset</th>
<th>Anticipated Construction Period</th>
<th>Estimated Cost</th>
<th>Comments</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of Supply</td>
<td>2021-2023</td>
<td>$2,000,000</td>
<td>Construct replacement wells.</td>
<td>Proposed</td>
</tr>
<tr>
<td>General Plant</td>
<td>2024-2030</td>
<td>$6,000,000</td>
<td>Replace chlorination equipment</td>
<td>Proposed</td>
</tr>
</tbody>
</table>

#### Total Estimated Cost

- **Total (1 - 3 Years)**: 2021-2023, $2,000,000
- **Total (4 - 10 Years)**: 2024-2030, $6,000,000
- **Grand Total (10 Years)**: 2021-2030, $8,000,000

### Projects Completed and Placed in Service

<table>
<thead>
<tr>
<th>Type of Asset</th>
<th>Year</th>
<th>Original Cost Placed in Service</th>
<th>Funding Source(s)</th>
<th>Comments</th>
<th>Reason for Prioritization</th>
<th>Was this project a consequence of an emergency incident? (i.e., was not a planned expense)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of Supply</td>
<td>2021</td>
<td>$2,000,000</td>
<td>Capital Reserves</td>
<td>Add Construct replacement wells.</td>
<td>Necessary to meet LCR compliance requirements</td>
<td>No</td>
</tr>
</tbody>
</table>

#### Total Original Cost

<table>
<thead>
<tr>
<th>Year</th>
<th>Original Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>-</td>
</tr>
<tr>
<td>2019</td>
<td>-</td>
</tr>
<tr>
<td>2020</td>
<td>-</td>
</tr>
<tr>
<td>2021</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>Grand Total</td>
<td>$2,000,000</td>
</tr>
</tbody>
</table>
Transmission and Distribution Mains

### Transmission and Distribution Mains

#### Length of Mains in Service (Feet)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;6”</td>
<td>74,600</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6”-12”</td>
<td>0</td>
<td>0</td>
<td>36,600</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>14”-16”</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>206,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18”-32”</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>400</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>&gt;32”</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>267,200</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>74,600</td>
<td>0</td>
<td>36,600</td>
<td>206,400</td>
<td>267,200</td>
<td>409,000</td>
<td>494,000</td>
<td>353,000</td>
<td>6,000</td>
</tr>
</tbody>
</table>

#### System Average Age (Yrs)

- **Average Age:** 45

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Break Rate (#/mi/yr)</td>
<td>0.71</td>
<td>0</td>
<td>1.01</td>
<td>0.64</td>
<td>0.40</td>
<td>0.06</td>
<td>0.02</td>
<td>0.01</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Pipe Material

- **Steel**: Length of Material (ft) = 6,000, # of Breaks for Material = 3, Break Rate (#/mi/yr) = 2.64
- **Ductile Iron**: Length of Material (ft) = 8,215, # of Breaks for Material = 1, Break Rate (#/mi/yr) = 0.94
- **Cast Iron**: Length of Material (ft) = 7,100, # of Breaks for Material = 0, Break Rate (#/mi/yr) = 0

**Grand Total**: Length of Material (ft) = 21,300, # of Breaks for Material = 4, Break Rate (#/mi/yr) = 3.28

#### Feet of Mains in Service

- **Total**: 1,845,800

#### Yearly Breaks

- **2017**: Feet of Mains Renewed/Replaced = 19,500, Cost of Mains Renewed/Replaced = $2,100,000
- **2018**: Feet of Mains Renewed/Replaced = 8,300, Cost of Mains Renewed/Replaced = $1,660,000
- **2019**: Feet of Mains Renewed/Replaced = 18,000, Cost of Mains Renewed/Replaced = $3,600,000
- **Three year Average**: Feet of Mains Renewed/Replaced = 12266.67, Cost of Mains Renewed/Replaced = $2,453,333
Hydrant & Valve Inspections

<table>
<thead>
<tr>
<th>Total # of Hydrants</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inventory</strong></td>
<td></td>
</tr>
<tr>
<td>New</td>
<td>30</td>
</tr>
<tr>
<td>Replacements</td>
<td>0</td>
</tr>
<tr>
<td>Inspections</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total # of Valves ≥ 12”</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inventory</strong></td>
<td></td>
</tr>
<tr>
<td>New</td>
<td>30</td>
</tr>
<tr>
<td>Replacements</td>
<td>0</td>
</tr>
<tr>
<td>Inspections</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total # of Valves &lt; 12”</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inventory</strong></td>
<td></td>
</tr>
<tr>
<td>New</td>
<td>30</td>
</tr>
<tr>
<td>Replacements</td>
<td>0</td>
</tr>
<tr>
<td>Inspections</td>
<td>30</td>
</tr>
</tbody>
</table>

Was inspection completed for all the Hydrants and Valves (New and Replacements) reported above?  ○ Yes  ○ No

Please provide an explanation or add any supporting document in the Attachments page of the service.

Enter a comment
### TECHNICAL, MANAGERIAL & FINANCIAL CAPACITY

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Cost to a residential billed customer with a 5/8&quot; meter for 60,000 gallons used per year ($)</th>
<th>Total Cost to a residential billed customer with a 5/8&quot; meter for 80,000 gallons used per year ($)</th>
<th>Percentage of billed water billed to residential customers</th>
<th>Net Debt as a percentage of revenue</th>
<th>Number of FTEs</th>
<th>Number of staff provided through contracted services</th>
<th>Operating Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>$697.44</td>
<td>$860.32</td>
<td>75%</td>
<td>30%</td>
<td>4</td>
<td>8</td>
<td>1.02</td>
</tr>
<tr>
<td>2020</td>
<td>$697.44</td>
<td>$860.32</td>
<td>75%</td>
<td>30%</td>
<td>4</td>
<td>8</td>
<td>1.02</td>
</tr>
<tr>
<td>2021</td>
<td>$697.44</td>
<td>$860.32</td>
<td>75%</td>
<td>30%</td>
<td>4</td>
<td>8</td>
<td>1.02</td>
</tr>
</tbody>
</table>
Other CIR Considerations

- DEP does not anticipate across the board requirements to submit asset management plans
  - *DEP may request AMPs from individual systems*
- Not implementing automatic Violations based on information provided, not an “MCL”-type framework
  - *Violations may still be determined based on nonsubmital of information*
- Looking primarily for consistency over years.
- Information that is received will be publicly accessible
  - *Meet the “accountability” piece of WQAA*
Look for updates on the WQAA website and via email blasts: http://www.nj.gov/dep/watersupply/g_reg-wqaa.html

Questions or Comments?
Email: watersupply@dep.nj.gov
Phone: 609-292-7219
Ohio’s Asset Management Program

Sean Stephenson
Division of Drinking and Ground Waters
Agenda

• Asset Management Rule Development
• Asset Management Rule Requirements
• Implementation of Ohio’s Asset Management Program
Ohio’s Public Water Systems

Public Water Systems in Ohio

- 2,612 Transient Non-community PWSs
- 1,162 Community PWSs
- 581 Non-Transient Non-community PWSs

Legend:
- Community
- NTNC
- TNC
Ohio’s Asset Management Requirement

• All public water systems in the State must have a written asset management program
• Ohio Administrative Code Rule 3745-87 describes the minimum components of an AMP
Asset Management Program Development

• In 2014 Ohio EPA developed a capability assurance workgroup.
• The workgroup developed and introduce language into Senate Bill 2 which was signed by Ohio’s Governor in 2017.
• With the signing of Senate Bill 2 Ohio now had a Law requiring all public water systems to demonstrate technical, managerial and financial capability through an asset management program.
• The workgroup worked to incorporate Ohio’s Senate Bill 2 statutory requirement into the Ohio Administrative Code Rule 3745-87 which was effective in October of 2018.
Asset Management Program Development

Senate Bill 2

- Section 6109.24 (B): “A public water system shall demonstrate the technical, managerial, and financial capability of the system to comply with this chapter and rules adopted thereunder it by implementing an asset management program” by October 1, 2018.

- Section 6109.24 (B)(3) Asset management shall include:
  - Inventory and evaluation of all assets
  - Operation and maintenance programs
  - Emergency preparedness and contingency planning program
  - Criteria and timelines for infrastructure rehabilitation and replacement
  - Approved capacity projections and capital improvement planning
  - Long-term funding strategy to support asset management program implementation
Developing the AMP Rule

• When developing the rule, we needed it to:
  – Fulfill the requirements of the proposed statutory change in Senate Bill 2 (ORC 6109.24).
  – To mesh with previous capability rules to address technical, managerial and financial capability of all PWSs.
  – Stakeholder outreach and interested party review.
Asset Management Rules
(OAC 3745-87)

• Asset management is broken down into three components:
  – Managerial Capability
  – Technical Capability
  – Financial Capability
Managerial Capability

• The managerial capability section of the rule is meant to address the PWS’ organizational structure and provide the support and guidance to operate and maintain the PWS.
  – Demonstration of ownership accountability and proper operation and maintenance.
Managerial Capability

- Non-technical description of the water system
- Succession planning
- Clearly defined organization chart
- Properly certified operators and required minimum staffing
- Ability to address violations
- Written procedures for:
  a. Contracting and purchasing
  b. Security
  c. Use of system equipment
  d. Billing practices and revenue collection
  e. Purchasing authority
Technical Capability

• Treatment and Distribution Schematic
• Asset Inventory
• Evaluation of Assets
• Operations and Maintenance Program
• Emergency Preparedness and Contingency Plan
• Source Water Assessment
• Capacity Projections
• Criteria and timelines for infrastructure rehabilitation and replacement
• Capital Improvement Plan
Treatment and Distribution Schematic

- A schematic of the PWS components is required
- It could be as detailed as a GIS map or a simple hand drawn schematic.
- It must include the source, pressure tanks, treatment and the distribution system.
Asset Inventory

• Name of asset (unique identifier)
• The known purchase date, installation date, or estimated age of the asset, if different,
• The status of the asset (e.g. in use, available for use, etc.),
• Location of assets, including up-to-date maps.
Evaluation of Assets

• Condition
• History of maintenance and repair
• Estimated remaining useful life based on condition and performance
• Prioritization of assets based on criticality and condition assessment
<table>
<thead>
<tr>
<th>Asset Name (e.g., Well 1, Pressure tank 1, softener 1)</th>
<th>Location of Asset (Attach a map showing the location of each asset if needed)</th>
<th>Estimated Age, in Years (How old is the asset? Record installation date if known.)</th>
<th>Status of Asset (See Table 1 below for descriptions)</th>
<th>Condition</th>
<th>Remaining Useful Life, in Years (Subtract the estimated age of the asset from the expected asset life. See Appendix B for typical life expectancy of various assets. If needed, adjust based on condition and performance)</th>
<th>Planned Future Work (If applicable.)</th>
<th>Cost for Future Work (Cost can be an estimate from similar assets or restoration services offered by vendors.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In use</td>
<td>Available</td>
<td>To be repaired</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
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<td>Very Poor</td>
</tr>
</tbody>
</table>
Operation and Maintenance Program

• Standard operating procedures for daily operation of the facility.
• Maintenance schedules or supporting documentation on maintenance performed for the following, as applicable:
  a. Wells, all raw-water reservoirs and intakes
  b. Pump stations
  c. Electrical equipment and controls
  d. Water storage tanks and or hydropneumatics tanks
  e. Distribution system components, including hydrants and valves,
  f. Auxiliary power
Emergency Preparedness and Contingency Planning

• Community systems shall have a written contingency plan meeting the requirements of Chapter 3745-85
• Non-community systems shall prepare a written contingency plan that meet certain elements of 3745-85
Source Water Protection

• All PWSs are required to review their Source Water Assessment annually and update, as necessary.

• For PWSs with an Endorsed Drinking Water Source Protection Plan this should be reviewed in accordance with the plan or every 3 years.

• For PWSs with a Drinking Water Source Protection Checklist that has been accepted by Ohio EPA, review and update the checklist every 5 years at minimum.
Criteria and Timelines for Infrastructure Rehabilitation and Replacement

• The system must include a timeline for the rehabilitation and replacement of its infrastructure.

• The system will need to consider criticality, remaining useful life, and the condition of the asset(s).

• The infrastructure projects can then be included in the CIP.
Capital Improvement Plan

• Annual projections for a 3 to 5-year planning period along with the funding source for the projects.
• Significant projects projected for 5-20 years
• The CIP is required to be reviewed and updated annually and should include planning and detailed expenditures to aid the water system in deciding the amount of money they should be saving and setting aside for CIPs
Financial Capability

- PWSs must demonstrate adequate financial capability by having a long-term funding strategy to support AMP implementation
  - Must include sources of funding
  - Must include amount of funds needed for repairs, rehabilitation, replacement or expansion including debt service
- Copy of latest water rate ordinance/schedule, if applicable
- Documentation of triennial water rate evaluation, if applicable (rates evaluated in past 3 years)
- Documentation of all customers being billed for water usage, if applicable
Financial capability

• One of the following from the past five years:
  – Publicly owned PWSs = Comprehensive Annual Financial Reports (CAFRs) or equivalent documents, OR
  – Non-publicly owned PWSs = Annual financial statements, including assets, liabilities, income, expenditures, and balances of the water system

• 5-year pro forma statement for the next 5 years including:
  – Income statement, balance sheet, statement of cash flow of water operating funds
  – Amortization schedule of all water debt including all outstanding debt
  – Long-term debt anticipated for next 5 years of operation
  – Existing information on bond or credit rating
When are AMP Reviewed?

• New Public Water Systems
  – a new PWS is required to submit an outline of what their AMP will include prior to operation. This written description must be approved prior to detailed plans being approved.

• Existing Public Water Systems
  – For all systems, Ohio EPA’s sanitary surveys now include new questions about current status of a systems asset management program. If the response to those questions indicate potential deficiencies, additional follow up in the form of an asset management screening will occur.
When are AMPs Reviewed?

• Ohio EPA prioritizes review of asset management programs and conducts asset management screenings for the following systems:
  – Systems under enforcement
  – Systems applying for WSLRA loans
  – Systems with obvious capability issues.
Asset Management Screening

• The screenings will be used to determine compliance with the Asset Management Rules.

• A compliance schedule will be sent to the system to address any rule violations identified during the screening.
  – Ohio EPA has developed criteria for what is acceptable, when to provide recommendations and when to place a system on a compliance schedule.
Example Screening Questions

• Does the governing body hold meetings that are open to the public and announced in advance? (Recommendation)

• Is there a high-level table of organization that identifies critical personnel with clearly defined job duties and assigned individuals? (OAC Rule 3745-87-03(A)(4)(b)(i))

• Is there a continuity plan in place for critical personnel through succession planning? (OAC Rule 3745-87-03 (A)(3))
Long-term Implementation

• The asset management program will need to be reviewed annually and updated as needed by the water system.
• The AMP will be kept onsite and available for review at the discretion of the director.
Measuring the effectiveness of AMP

• The number of systems with Asset Management related violations.

• Annual Metrics
  – Metrics are key performance indicators that can be tracked overtime to help determine the effectiveness of AMP implementation.
  – These differ between non-community and community systems
Non-community Metrics

• Documentation of instances when the water system’s pressure dropped below 20 psi
• Number of days unable to serve water
• The number of planned and emergency repair rehabilitation or replacement tasks per year.
• Reserve funds on hand or available for the immediate use by the water system.
## Community Metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Report to Ohio EPA annually using total from previous year</th>
</tr>
</thead>
</table>
| Operating ratio                             | • Total PWS Expenses  
• Total PWS Revenue                                    |
| Operating cost to produce water per service connection | • Total PWS Expenses  
• Total number of service connections                   |
| Breaks per 10 miles of distribution pipe    | • Total number of distribution line breaks  
• Total miles or feet of distribution pipe              |
| Non-revenue water                           | • Total gallons of billed water exported (e.g., interconnections)  
• Total gallons of billed, metered consumption (e.g., water billed to service connections or sold through a bulk station)  
• Total gallons of billed, unmetered consumption (e.g., flat fee structure accounts). This usage must be estimated if unknown.  
• Total gallons produced                           |
| Maintenance tasks per year on vertical assets| • Total number of planned maintenance tasks (e.g., routine)  
• Total number of unplanned maintenance tasks (e.g., emergency) |
| One additional customer service metric to be determined by the PWS | The PWS must determine one additional customer service metric to track and report each year. Some examples are listed toward the end of this fact sheet. |
Outreach and Guidance

• Asset Management Program Templates
  – Noncommunity Asset Management Program Template
  – Small Non-community Asset Management Program Template
  – Small Community Asset Management Program Template

• Asset Management Screening
  – Questions are available on Ohio EPA’s website

• Metrics Guidance
  – Metrics Worksheets
  – Metrics Factsheets
Outreach and Guidance

• RCAP Training and Technical Assistance
  – Ohio uses the 2% small systems technical assistance set-aside to fund RCAP.
  – Training on asset management, rate setting, budgeting, etc...
  – Technical Assistance
    • Assist systems with improving parts of an AMP, asset with developing O&M programs, SOPs etc...
Incentives for Developing AMPs

- Planning loans are available at 0% interest
- In the past Ohio has also offered up to $10,000 in principal forgiveness for the development of an Asset Management Program.
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http://epa.ohio.gov/ddagw/pws/assetmanagement
THANK YOU FOR ATTENDING!
TIME FOR Q&A

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You may find additional drinking water webinars and resources at www.epa.gov/dwcapacity

Please stay at the end to take a 5-question survey