Incorporating Asset Management in Drinking Water Regulations

October 14th, 2021

EPA

OFFICE OF GROUND WATER AND DRINKING WATER

Welcome!

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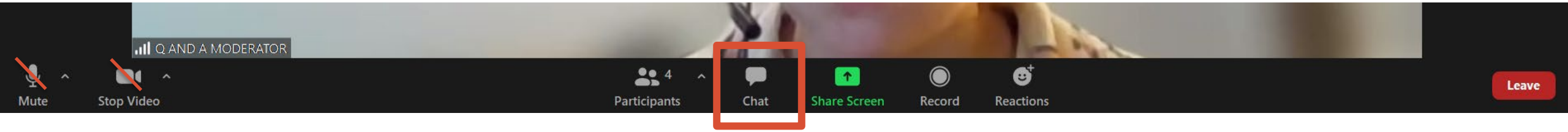
All attendees are in listen-only mode. Please do not unmute yourself during the presentation.

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

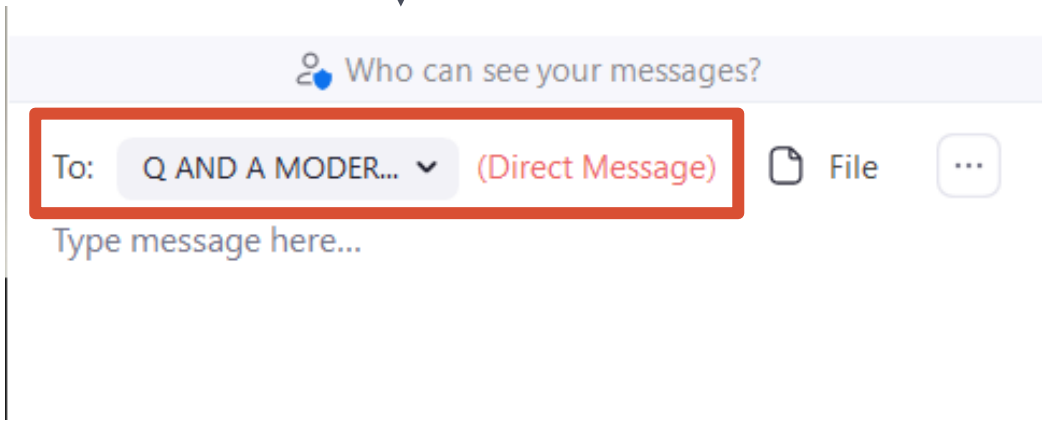
The recording will be posted online and a link emailed to all registered attendees 1-2 weeks after the webinar.

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*

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America's Water Infrastructure Act of 2018 (AWIA)

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

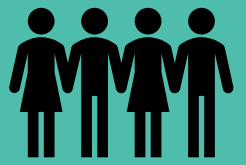
I. That the states amend the state capacity development strategy to include a description of how the state will encourage the development of asset management plans that includes best practices and include any training, technical assistance and other activities to help implement asset management plans.

   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

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

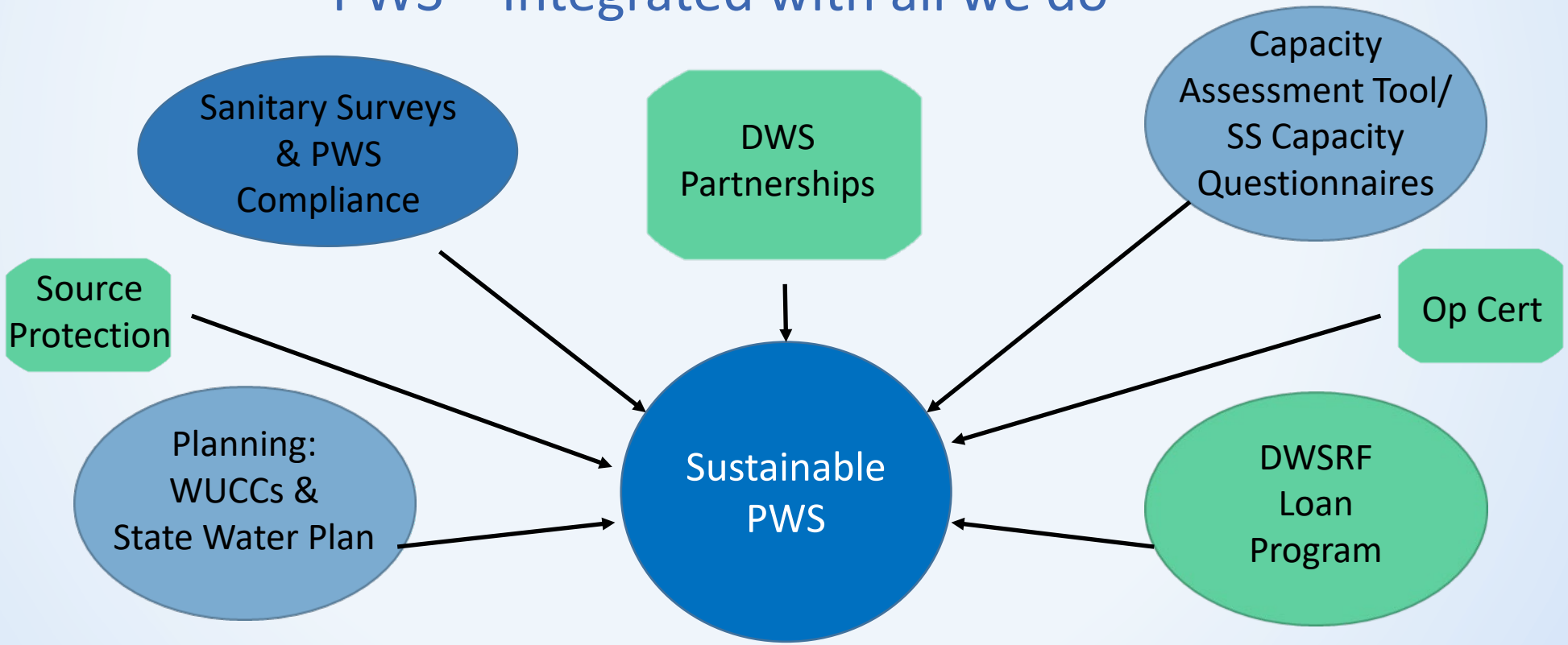
- Regulate over 2,400 Public Water Systems with over 4,000 sources

- 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

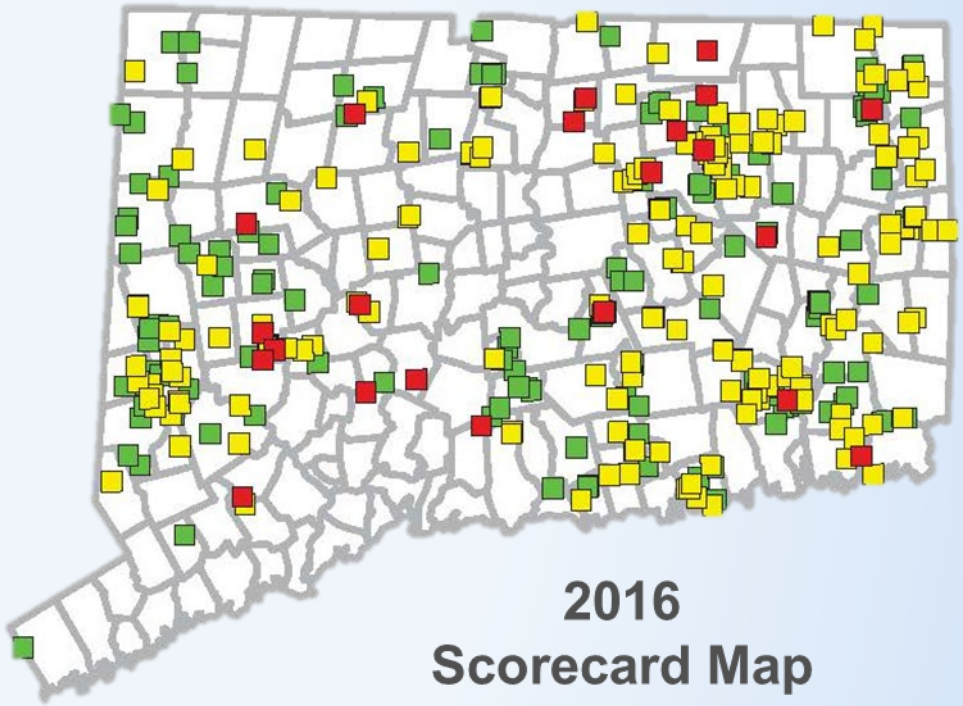
CT DPH DWS Capacity Development

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

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

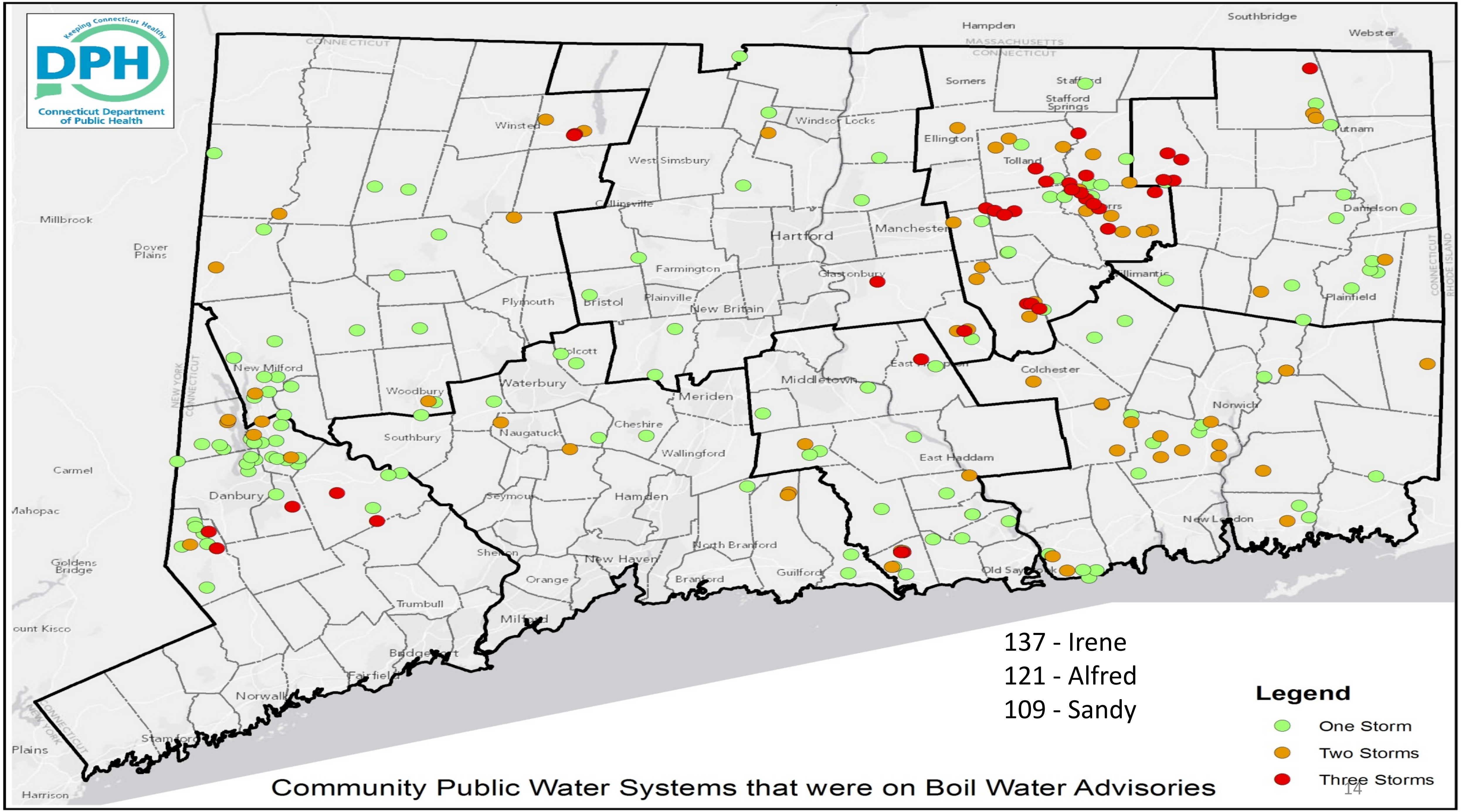
Large Systems:

Extended Period on Generators,
Limited Access,
Communication Issues

Keeping Connecticut Healthy

DPH

Connecticut Department of Public Health



137 - Irene

121 - Alfred

109 - Sandy

Community Public Water Systems that were on Boil Water Advisories

And Then This Happened....

2015 Hydropneumatic Tank Explosion In Southeastern CT

Hydropneumatic Tank Assessment Results

Put thoughts into Action

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

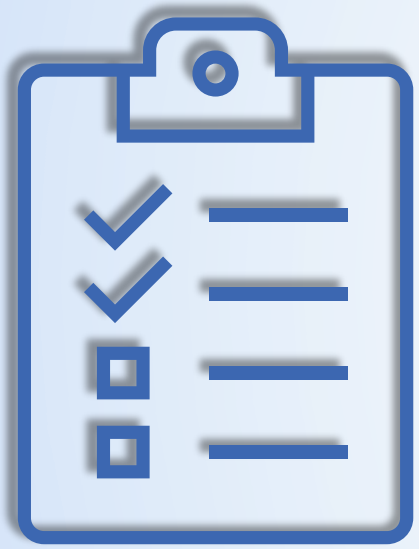
- Actions Taken:
  - New regulation for Emergency Power at all Critical Facilities for all CWS
  - Incorporated Large CWS into statewide WebEOC software, updated contact and facility info
  - DWSRF programs for Generator funding and state bond subsidization for regionalization projects
  - Restarted 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)

Connecticut General Statutes-CGS §19a-37e

- 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

Capacity Development Webpage

Capacity Development for Small Water Systems

Small Community Fiscal and Asset Management Plan Requirements – NEW!

Pursuant to the new Connecticut General Statutes (CGS) §19a-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)

Fiscal & Asset Management Plan Results

- 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

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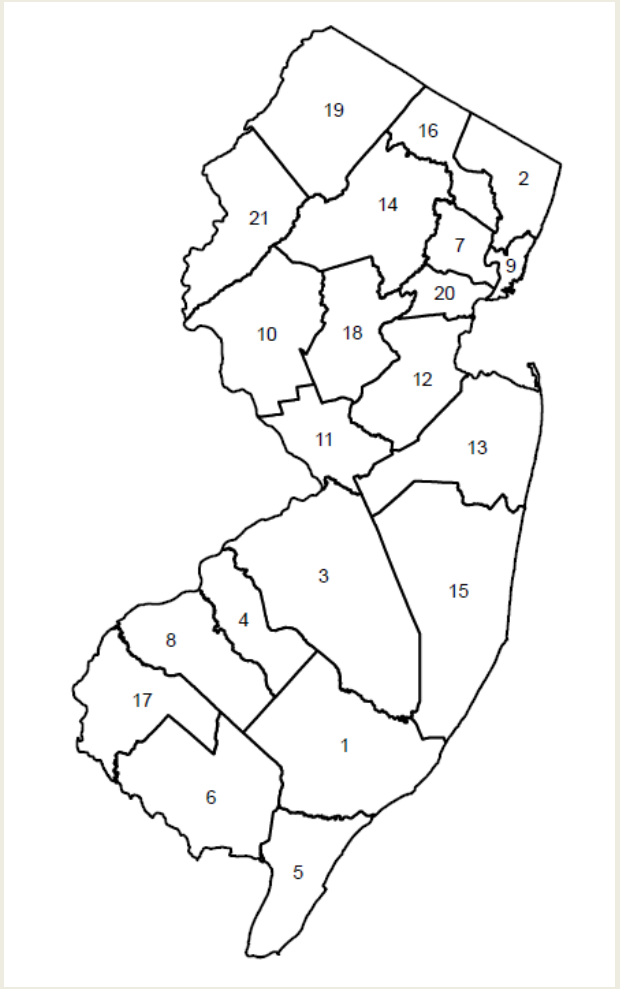
NJDEP & ASSET MANAGEMENT

Brandon Carreno- Office of the Director
Division of Water Supply & Geoscience
October 14, 2021

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*
- 2014 Asset Management Workgroup (https://www.nj.gov/dep/assetmanagement/)
  - *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

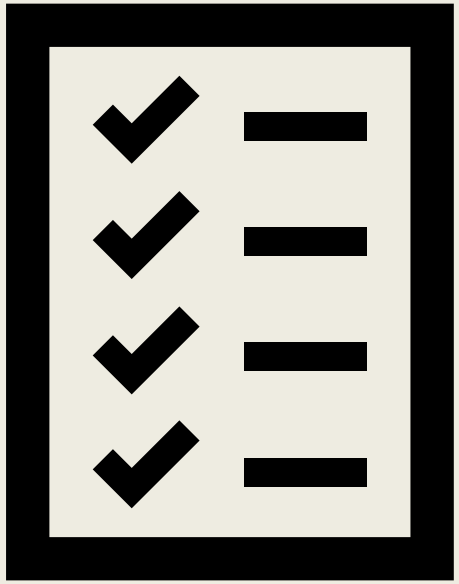
VALVES

Component	Requirement
Valves ≥ 12”	Inspect every 2 years – by 10/19/2019
All other valves	Inspect every 4 years – by 10/19/2021
All valves	GPS to the extent possible
Repair broken valves	Must be repaired when found to be out of service

HYDRANTS

Component	Requirement
All fire hydrants	Test Annually
	Implement a plan for flushing hydrants and dead mains
	Label each with purveyor’s name and number with paint, brand, or soft metal plate
	GPS to the extent possible

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



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

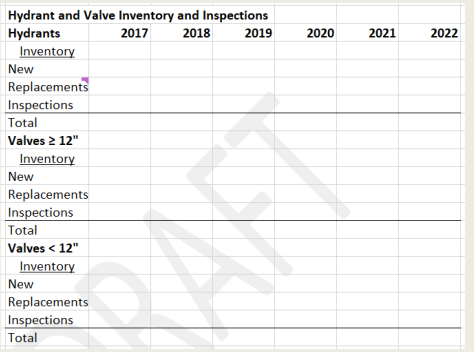
- Annual certification form
  - *WQAA requirement, system owner signature*
- Capital Improvement Report
  - *WQAA requirement*
- Site visits
- Requirement for DWSRF loans

Capital Improvement Report

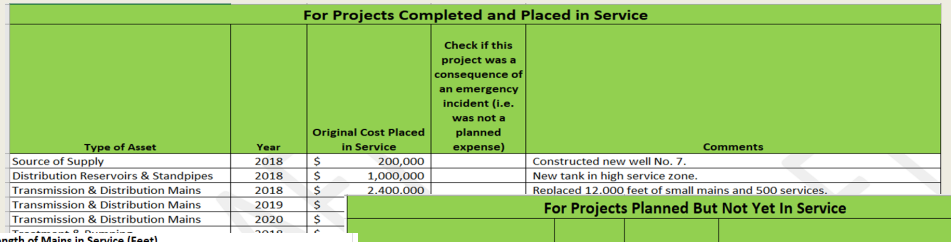
Capital Improvement Report must be submitted every 3 years (April 19, 2022) to the Department. BPU/DCA will automatically receive/have access to this report through the portal.

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

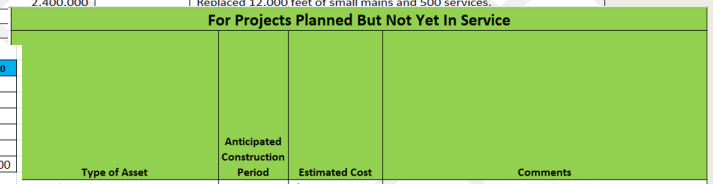


Hydrant and Valve Inventory and Inspections						
Hydrants	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Inventory						
New						
Replacements						
Inspections						
Total						
Valves ≥ 12"						
Inventory						
New						
Replacements						
Inspections						
Total						
Valves < 12"						
Inventory						
New						
Replacements						
Inspections						
Total						



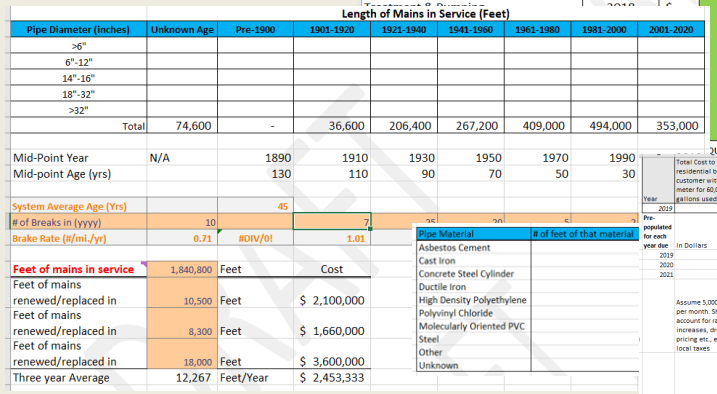
For Projects Completed and Placed in Service

Type of Asset	Year	Original Cost Placed in Service	Check if this project was a consequence of an emergency incident (i.e. was not a planned expense)	Comments
Source of Supply	2018	$ 200,000		Constructed new well No. 7.
Distribution Reservoirs & Standpipes	2018	$ 1,000,000		New tank in high service zone.
Transmission & Distribution Mains	2018	$ 2,400,000		Replaced 12,000 feet of small mains and 500 services.
Transmission & Distribution Mains	2019	$		
Transmission & Distribution Mains	2020	$		



For Projects Planned But Not Yet In Service

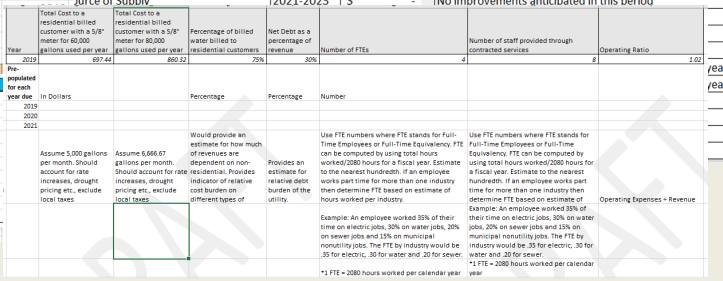
Type of Asset	Anticipated Construction Period	Estimated Cost	Comments
ource of Supply	2021-2023	$ -	No improvements anticipated in this period



Length of Mains in Service (Feet)

Pipe Diameter (inches)	Unknown Age	Pre-1900	1901-1920	1921-1940	1941-1960	1961-1980	1981-2000	2001-2020
>6"								
6"-12"								
14"-16"								
18"-32"								
>32"								
Total	74,600	-	36,600	206,400	267,200	409,000	494,000	353,000
Mid-Point Year	N/A	1890	1910	1930	1950	1970	1990	
Mid-point Age (yrs)		130	110	90	70	50	30	
System Average Age (Yrs)		45						
# of Breaks in (yyyy)	10		7					
Brake Rate (#/mi./yr)	0.71	#DIV/0!	1.01					
Feet of mains in service	1,840,800	Feet	Cost					
Feet of mains renewed/replaced in	10,500	Feet	$ 2,100,000					
Feet of mains renewed/replaced in	8,300	Feet	$ 1,660,000					
Feet of mains renewed/replaced in	18,000	Feet	$ 3,600,000					
Three year Average	12,267	Feet/Year	$ 2,453,333					

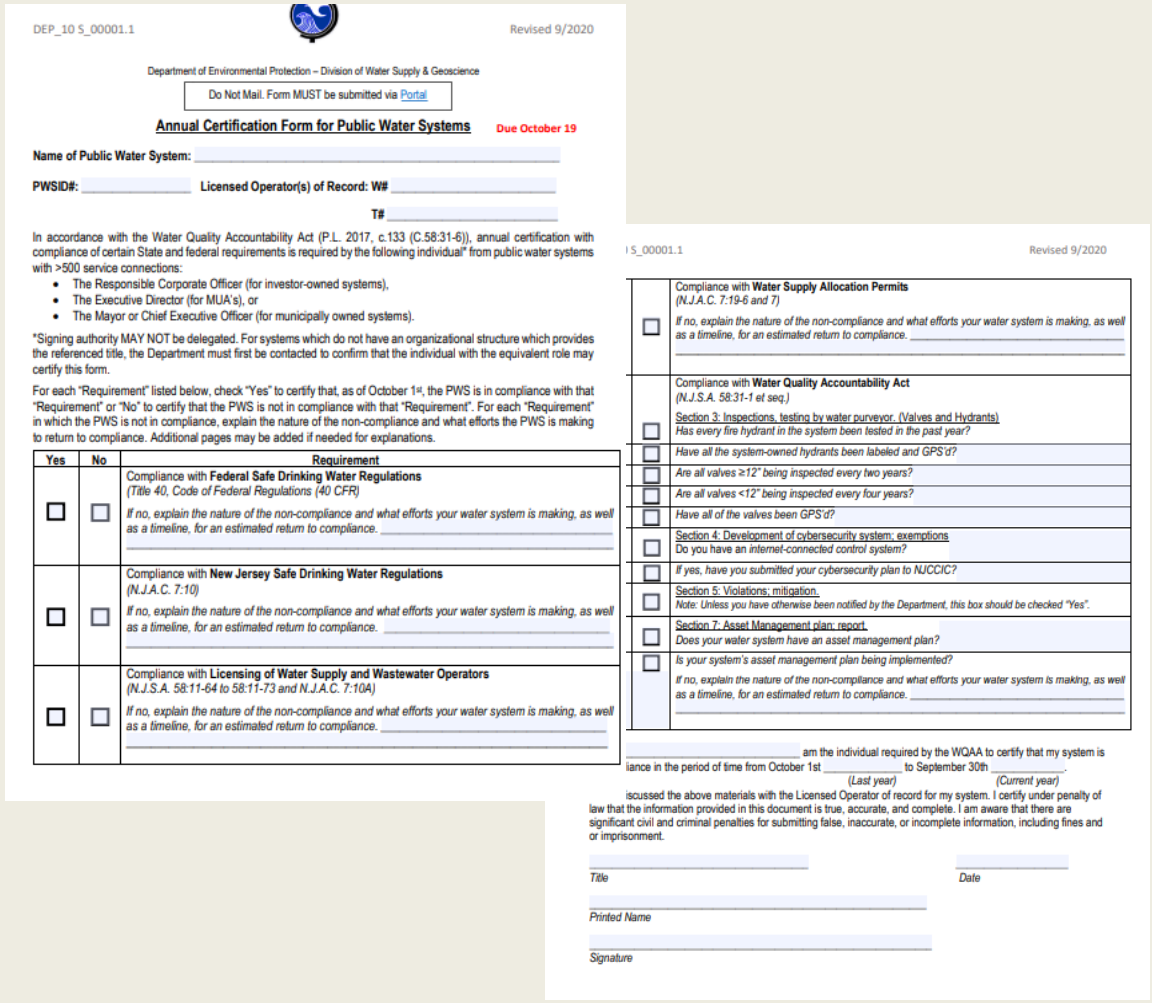
Pipe Material	# of feet of that material
Asbestos Cement	
Cast Iron	
Concrete Steel Cylinder	
Ductile Iron	
High Density Polyethylene	
Polyvinyl Chloride	
Molecularly Oriented PVC	
Steel	
Other	
Unknown	



Year	Total Cost to a residential billed customer with a 5/8" meter for 60,000 gallons used per year	Total Cost to a residential billed customer with a 5/8" meter for 80,000 gallons used per year	Percentage of billed water billed to residential customers	Net Debt as a percentage of revenue	Number of FTEs	Number of staff provided thrvough contracted services	Operating Ratio
2019	697.44	860.32	75%	30%	4	8	1.02
Pre-populated for each year due	In Dollars		Percentage	Percentage	Number		
2019							
2020							
2021							
	Assume 5,000 gallons per month. Should account for rate increases, drought pricing etc., exclude local taxes	Assume 6,666.67 gallons per month. Should account for rate increases, drought pricing etc., exclude local taxes	Would provide an estimate for how much of revenues are dependent on non-residential. Provides indicator of relative cost burden on different types of	Provides an estimate for relative debt burden of the utility.	Use FTE numbers where FTE stands for Full-Time Employees or Full-Time Equivalency. FTE can be computed by using total hours worked/2080 hours for a fiscal year. Estimate to the nearest hundredth. If an employee works part time for more than one industry then determine FTE based on estimate of hours worked per industry. Example: An employee worked 35% of their time on electric jobs, 30% on water jobs, 20% on sewer jobs and 15% on municipal nonutility jobs. The FTE by industry would be .35 for electric, .30 for water and .20 for sewer. *1 FTE = 2080 hours worked per calendar year	Use FTE numbers where FTE stands for Full-Time Employees or Full-Time Equivalency. FTE can be computed by using total hours worked/2080 hours for a fiscal year. Estimate to the nearest hundredth. If an employee works part time for more than one industry then determine FTE based on estimate of Example: An employee worked 35% of their time on electric jobs, 30% on water jobs, 20% on sewer jobs and 15% on municipal nonutility jobs. The FTE by industry would be .35 for electric, .30 for water and .20 for sewer. *1 FTE = 2080 hours worked per calendar year	Operating Expenses ÷ Revenue

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*



DEP_10 S_00001.1 Revised 9/2020

Department of Environmental Protection – Division of Water Supply & Geoscience

Do Not Mail. Form MUST be submitted via Portal

Annual Certification Form for Public Water Systems Due October 19

Name of Public Water System: _____

PWSID#: _____ **Licensed Operator(s) of Record: W#** _____

T# _____

In accordance with the Water Quality Accountability Act (P.L. 2017, c.133 (C.58:31-6)), annual certification with compliance of certain State and federal requirements is required by the following individual* from public water systems with >500 service connections:

- The Responsible Corporate Officer (for investor-owned systems),
- The Executive Director (for MUA's), or
- The Mayor or Chief Executive Officer (for municipally owned systems).

*Signing authority MAY NOT be delegated. For systems which do not have an organizational structure which provides the referenced title, the Department must first be contacted to confirm that the individual with the equivalent role may certify this form.

For each "Requirement" listed below, check "Yes" to certify that, as of October 1st, the PWS is in compliance with that "Requirement" or "No" to certify that the PWS is not in compliance with that "Requirement". For each "Requirement" in which the PWS is not in compliance, explain the nature of the non-compliance and what efforts the PWS is making to return to compliance. Additional pages may be added if needed for explanations.

Yes	No	Requirement
☐	☐	Compliance with **Federal Safe Drinking Water Regulations** *(Title 40, Code of Federal Regulations (40 CFR)* *If no, explain the nature of the non-compliance and what efforts your water system is making, as well as a timeline, for an estimated return to compliance.* _____
☐	☐	Compliance with **New Jersey Safe Drinking Water Regulations** *(N.J.A.C. 7:10)* *If no, explain the nature of the non-compliance and what efforts your water system is making, as well as a timeline, for an estimated return to compliance.* _____
☐	☐	Compliance with **Licensing of Water Supply and Wastewater Operators** *(N.J.S.A. 58:11-64 to 58:11-73 and N.J.A.C. 7:10A)* *If no, explain the nature of the non-compliance and what efforts your water system is making, as well as a timeline, for an estimated return to compliance.* _____
☐		Compliance with **Water Supply Allocation Permits** *(N.J.A.C. 7:19-6 and 7)* *If no, explain the nature of the non-compliance and what efforts your water system is making, as well as a timeline, for an estimated return to compliance.* _____
☐		Compliance with **Water Quality Accountability Act** *(N.J.S.A. 58:31-1 et seq.)*
☐		Section 3: Inspections, testing by water purveyor. (Valves and Hydrants) *Has every fire hydrant in the system been tested in the past year?*
☐		*Have all the system-owned hydrants been labeled and GPS'd?*
☐		*Are all valves ≥12" being inspected every two years?*
☐		*Are all valves <12" being inspected every four years?*
☐		*Have all of the valves been GPS'd?*
☐		Section 4: Development of cybersecurity system; exemptions Do you have an *internet-connected control system?*
☐		*If yes, have you submitted your cybersecurity plan to NJCCIC?*
☐		Section 5: Violations; mitigation. *Note: Unless you have otherwise been notified by the Department, this box should be checked "Yes".*
☐		Section 7: Asset Management plan; report. *Does your water system have an asset management plan?*
☐		*Is your system's asset management plan being implemented?* *If no, explain the nature of the non-compliance and what efforts your water system is making, as well as a timeline, for an estimated return to compliance.* _____

_____ am the individual required by the WQAA to certify that my system is iance in the period of time from October 1st _____ to September 30th _____.
(Last year) *(Current year)*

iscussed the above materials with the Licensed Operator of record for my system. I certify under penalty of law that the information provided in this document is true, accurate, and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate, or incomplete information, including fines and or imprisonment.

_____ _____
Title *Date*

_____
Printed Name

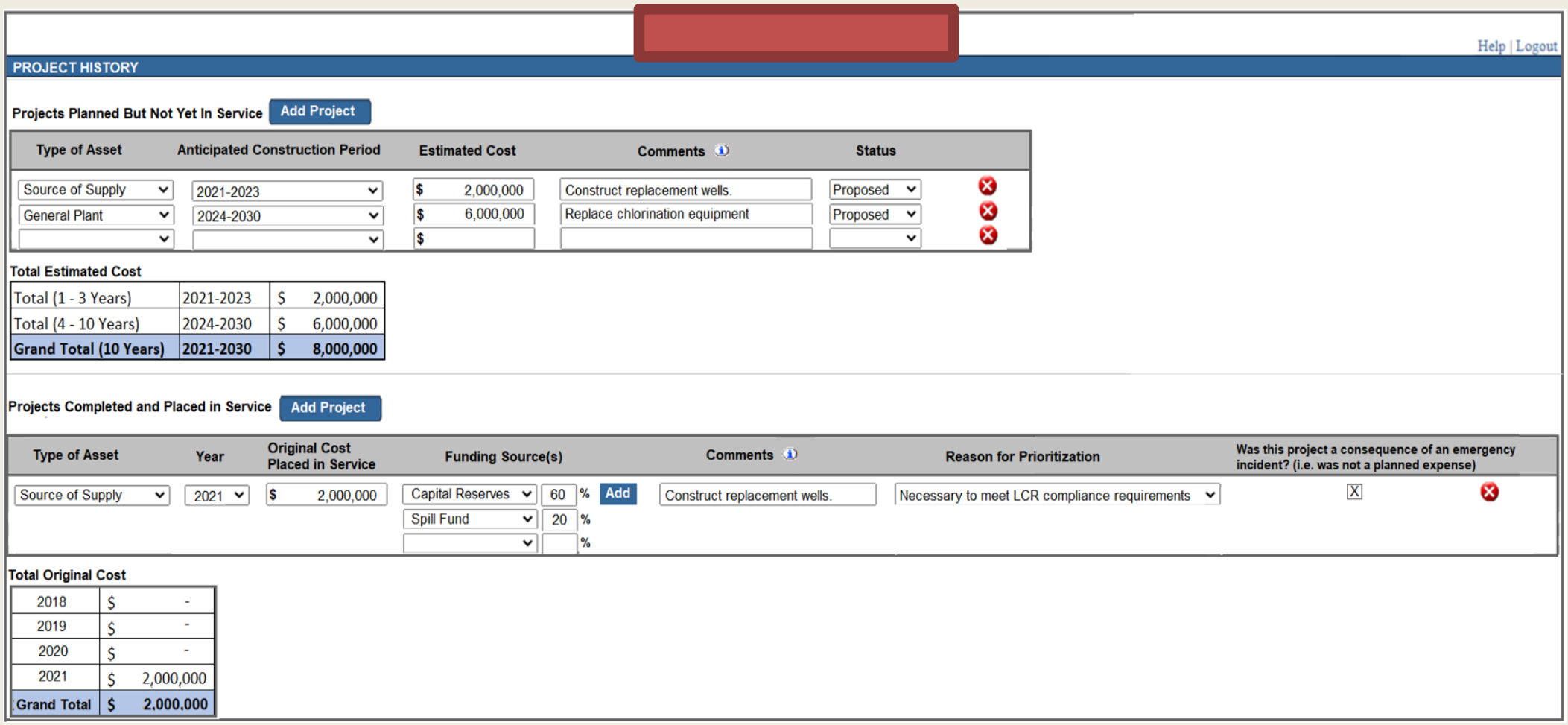
_____
Signature

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



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PROJECT HISTORY

Projects Planned But Not Yet In Service Add Project

Type of Asset	Anticipated Construction Period	Estimated Cost	Comments	Status
Source of Supply	2021-2023	$ 2,000,000	Construct replacement wells.	Proposed
General Plant	2024-2030	$ 6,000,000	Replace chlorination equipment	Proposed
		$		

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 Add Project

Type of Asset	Year	Original Cost Placed in Service	Funding Source(s)			Comments	Reason for Prioritization	Was this project a consequence of an emergency incident? (i.e. was not a planned expense)
Source of Supply	2021	$ 2,000,000	Capital Reserves	60	% Add	Construct replacement wells.	Necessary to meet LCR compliance requirements	X
			Spill Fund	20	%			
					%			

Total Original Cost

2018	$ -
2019	$ -
2020	$ -
2021	$ 2,000,000
Grand Total	**$ 2,000,000**

Transmission and Distribution Mains

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TRANSMISSION AND DISTRIBUTION MAINS

Length of Mains in Service (Feet)

Pipe Diameter (inches)	Unknown Age	Pre-1900	1901-1920	1921-1940	1941-1960	1961-1980	1981-2000	2001-2020	2021-2040
<6"	74,600	0	0	0	0	409,000	0	0	0
6"-12"	0	0	36,600	0	0	0	494,000	0	0
14"-16"	0	0	0	206,00	0	0	0	0	5,000
18"-32"	0	0	0	400	0	0	0	353,000	0
>32"	0	0	0	0	267,200	0	0	0	
Grand Total	74,600	0	36,600	206,400	267,200	409,000	494,000	353,000	5,000

System Average Age (Yrs) 45

	Unknown Age	Pre-1900	1901-1920	1921-1940	1941-1960	1961-1980	1981-2000	2001-2020	2021-2040
# of Breaks in Year	10	0	7	25	20	5	2	1	0
Break Rate (#/mi./yr)	0.71	0	1.01	0.64	0.40	0.06	0.02	0.01	0

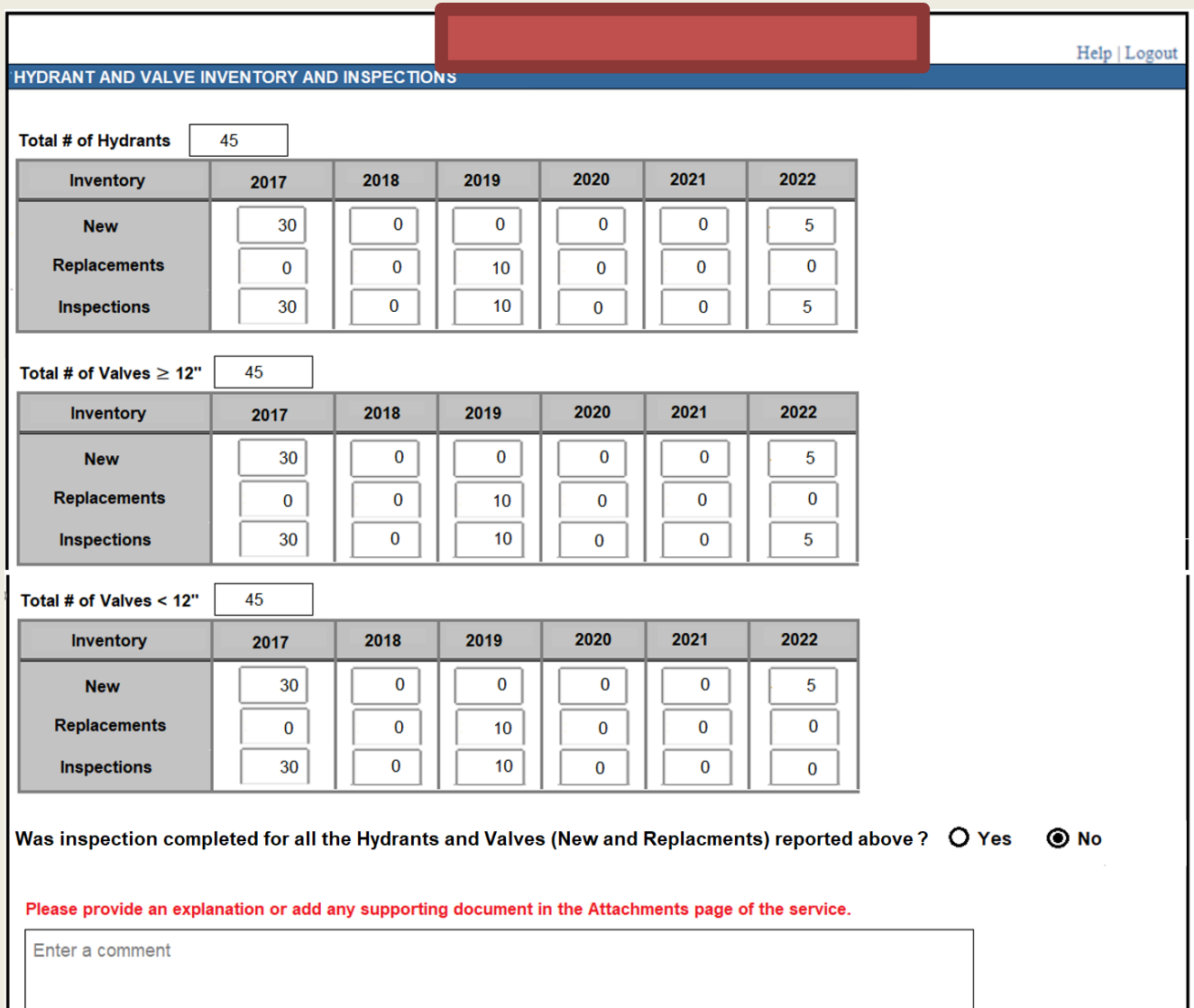
ADD

Pipe Material	Length of Material (ft.)	# of Breaks for Material	Break Rate (#/mi./yr)
Steel	6,000	3	2.64
Ductile Iron	8,210	1	0.64
Cast Iron	7,100	0	0
Grand Total	21,300	4	3.28

Feet of Mains in Service 1,845,800

Year	Feet of Mains Renewed/Replaced	Cost of Mains Renewed/Replaced
2017	10,500	$ 2,100,000
2018	8,300	$ 1,660,000
2019	18,000	$ 3,600,000
Three year Average	12266.67	$ 2,453,333

Hydrant & Valve Inspections



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HYDRANT AND VALVE INVENTORY AND INSPECTIONS

Total # of Hydrants 45

Inventory	2017	2018	2019	2020	2021	2022
New	30	0	0	0	0	5
Replacements	0	0	10	0	0	0
Inspections	30	0	10	0	0	5

Total # of Valves ≥ 12" 45

Inventory	2017	2018	2019	2020	2021	2022
New	30	0	0	0	0	5
Replacements	0	0	10	0	0	0
Inspections	30	0	10	0	0	5

Total # of Valves < 12" 45

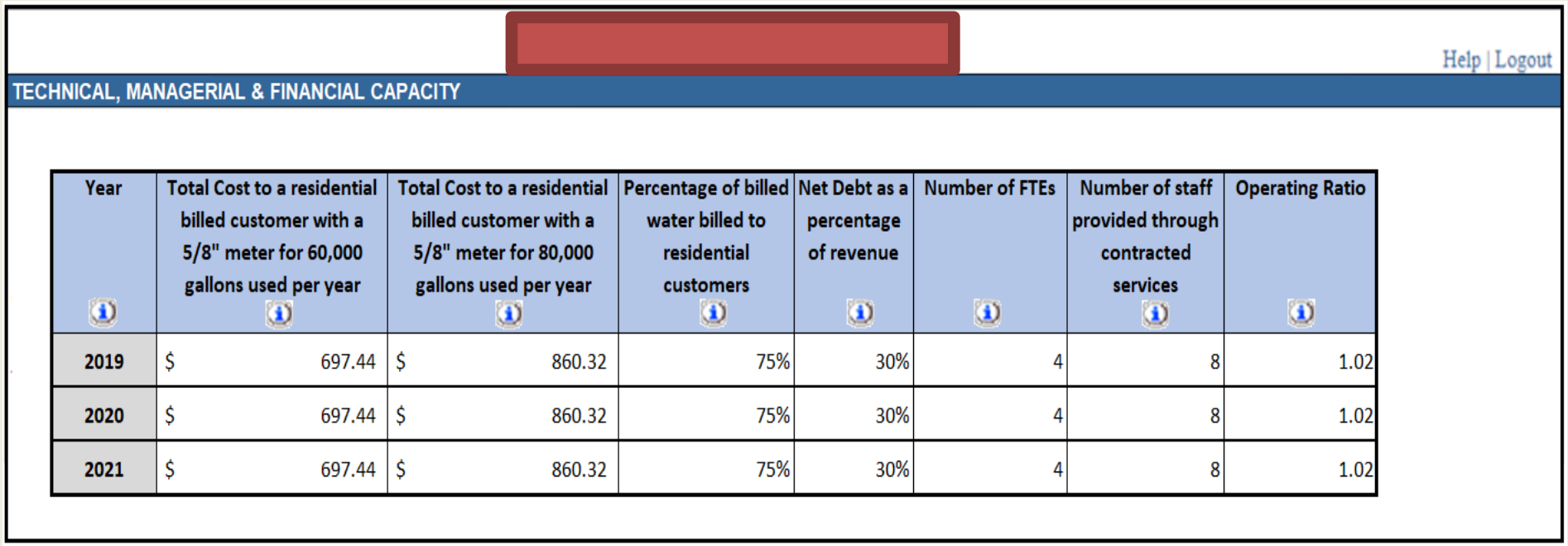
Inventory	2017	2018	2019	2020	2021	2022
New	30	0	0	0	0	5
Replacements	0	0	10	0	0	0
Inspections	30	0	10	0	0	0

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

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

Enter a comment

TMF Capacity Characteristics



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TECHNICAL, MANAGERIAL & FINANCIAL CAPACITY

Year	Total Cost to a residential billed customer with a 5/8" meter for 60,000 gallons used per year	Total Cost to a residential billed customer with a 5/8" meter for 80,000 gallons used per year	Percentage of billed water billed to residential customers	Net Debt as a percentage of revenue	Number of FTEs	Number of staff provided through contracted services	Operating Ratio
2019	$ 697.44	$ 860.32	75%	30%	4	8	1.02
2020	$ 697.44	$ 860.32	75%	30%	4	8	1.02
2021	$ 697.44	$ 860.32	75%	30%	4	8	1.02

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 nonsubmittal 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

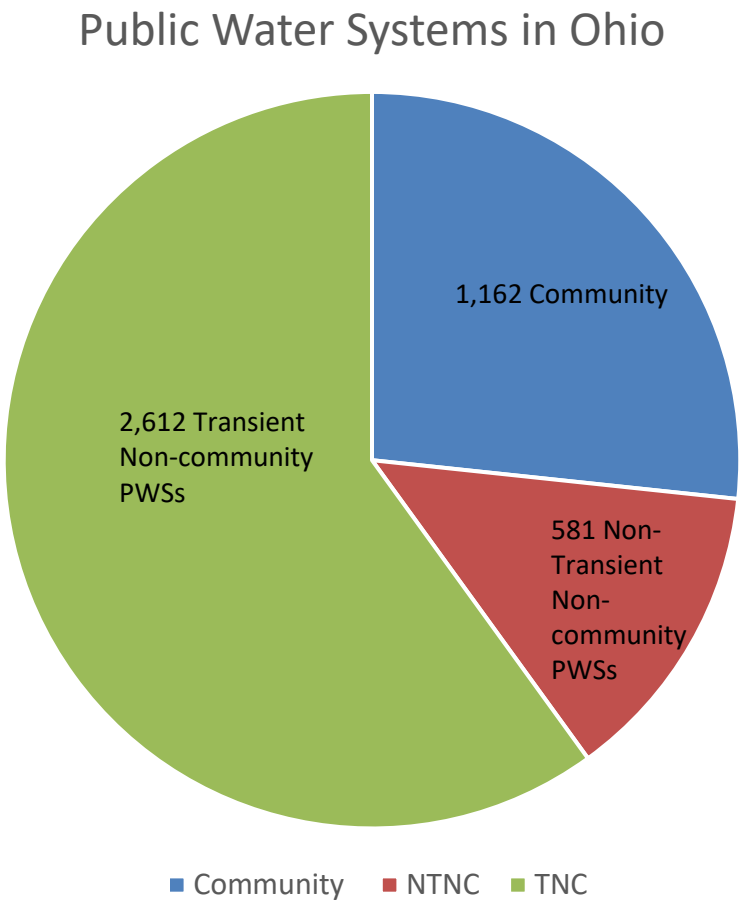
Ohio Environmental Protection Agency

Agenda

- Asset Management Rule Development
- Asset Management Rule Requirements
- Implementation of Ohio's Asset Management Program

Ohio Environmental Protection Agency

Ohio's Public Water Systems



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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

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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.

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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

Ohio Environmental Protection Agency

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.

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Asset Management Rules (OAC 3745-87)

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

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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.

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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

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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

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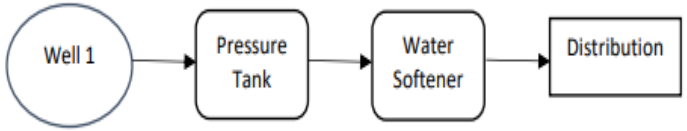
Treatment and Distribution Schematic

2. *Well, pressure tank, softener*



- 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.

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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.

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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

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Asset Inventory

Asset Name (e.g., Well 1, Pressure tank 1, softener 1)	**Location of Asset** (Attach a map showing the location of each asset if needed)	**Estimated Age, in Years** (How old is the asset? Record installation date if known.)	**Status of Asset**	**Condition** (See Table 1 below for descriptions)	**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.)	**Planned Future Work** (If applicable.)	**Cost for Future Work** (Cost can be an estimate from similar assets or restoration services offered by vendors.)
			☐ In use ☐ Available ☐ To be repaired	☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Very Poor		☐ Rehabilitate/Repair ☐ Replace ☐ Expand Planned Date	
			☐ In use ☐ Available ☐ To be repaired	☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Very Poor		☐ Rehabilitate/Repair ☐ Replace ☐ Expand Planned Date	
			☐ In use ☐ Available ☐ To be repaired	☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Very Poor		☐ Rehabilitate/Repair ☐ Replace ☐ Expand Planned Date	
			☐ In use ☐ Available ☐ To be repaired	☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Very Poor		☐ Rehabilitate/Repair ☐ Replace ☐ Expand Planned Date	
			☐ In use ☐ Available ☐ To be repaired	☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Very Poor		☐ Rehabilitate/Repair ☐ Replace ☐ Expand Planned Date	

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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

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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

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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.

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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.

Ohio Environmental Protection Agency

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

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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

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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

Ohio Environmental Protection Agency

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.

Ohio Environmental Protection Agency

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.

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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.

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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))

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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.

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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

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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.

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Community Metrics

Metric	Report to Ohio EPA annually using total from previous year
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.

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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

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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…

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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.

Ohio Environmental Protection Agency

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Ohio Environmental Protection Agency

THANK YOU FOR ATTENDING!
TIME FOR Q&A

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

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