

New London Council Workshop
December 9, 2019 @ 6:00 p.m.

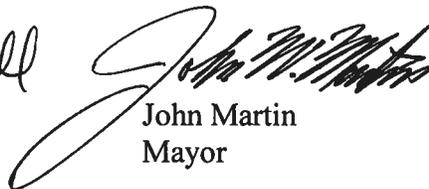
Present: John Martin, Janice Myers, Mike Willis, Marion Paramore, Bill Curtis, Shawn Pickworth, John Chapin, Toby Thomas, Wendy Kidd, Steve Ball, Julie Ward and Don Patton

Julie Ward, Rural Development Specialist from Ohio RCAP, presented a PowerPoint presentation on the Village of New London Asset Management Plan. A copy of the PowerPoint presentation is attached as Appendix A.

Workshop was adjourned.



Nancy Howell
Fiscal Officer



John Martin
Mayor



RCAP
Rural Community Assistance Program
"Improving the quality of life in rural communities"

Village of New London Asset Management Plan December 9, 2019

Presented by
Julie Ward - Ohio RCAP, Rural Development Specialist
jaward@rcap.org

What is Asset Management?



Asset management represents a **change** in utility management philosophy, one from **run to failure**, to one of **actively managing asset maintenance** based on performance monitoring of asset condition, including **budgeting for eventual replacement**.

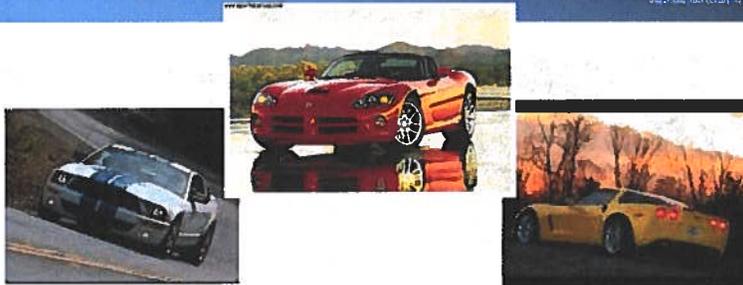


Asset Management: A Change in Management Philosophy



- Currently most utilities operate their underground infrastructure with a run to failure philosophy.
- Install underground assets and run until they collapse, break, leak, or someone complains.
- An AM program, on the other hand, emphasizes maintaining assets as they age to extend useful life, and budgeting for eventual replacement.
- It requires enacting the right rate for revenue sufficiency to implement the utility's level of service goals.

Car Example



Maintenance Plan

- Run until Failure
- Preventive Maintenance
- Predictive Maintenance

Useful Life

60,000 miles	4 yrs
180,000 miles	12 yrs
300,000 miles	20 yrs

Maintenance Strategies



- Preventive: Activities for the care and servicing of equipment and facilities for the purpose of keeping in satisfactory working condition.
- Predictive: Activities that help determine the condition of assets to "predict" when repair/rehab should be performed.
- Reactive: Run until failure, emergency repair. The results of sudden asset failure. Costs approximately more than 1/3rd of planned maintenance.
- Deferred: Any necessary maintenance, repair, rehab or replacement work not performed (usually due to \$\$\$). The rate at which assets deteriorate tend to increase when maintenance is deferred.

AM Plan Development



- Phase 1
1. Administrative Review of Utility Management
 2. Develop an Asset Inventory (GPS Data Collection)
 3. Construction and Maintenance History (Identify Problem Areas)
 4. Operational Review (Historical vs. Best Practices)
- Phase 2
5. Initial Condition Assessment
 6. GIS Mapping with Important Attributes (Permanent Electronic Record)
 7. Identify Best Management Practices (Performance Benchmarks)
 8. Set-up CMMS Software with Preventive Maintenance, Predictive Monitoring and Rehabilitation / Replacement Reserve
- Phase 3
9. Capital Improvement Plan to address Deferred Maintenance
 10. Asset Management Plan (Long term capital budgeting)
 11. Recommend the "Right" Rate for Revenue Sufficiency
 12. Public Meeting to Present Asset Management Plan

AM Level of Service Goals



Examples of 5 Level of Service Categories

- ❑ Compliance
- ❑ Health, Safety, and Security
 - ❑ Conservation
 - ❑ Service Quality
- ❑ Asset Preservation and Financial Sustainability



Establish the "right" rate for **revenue sufficiency!**

OHIO EPA Operational Metrics (LOS)



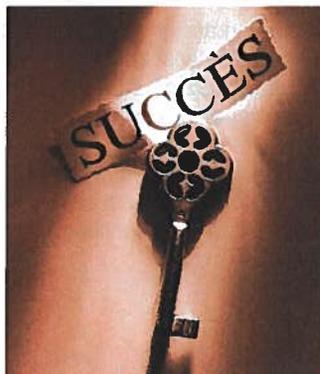
Operational Metrics: Annual Goals

Metric	Performance Target
Operating Ratio: Total Expenses/Revenues	Under 1.0
Total Cost per Service Connection: Includes All Expenses, Use Average Connections per Year.	\$1,000
Water Main Breaks per 10 Mile of Pipe: (Boil Advisories Issues)	2
Unaccounted for Water Loss - %	15
Maintenance Tasks Per Yr. on Vertical Assets (Planned V Unplanned)	52
Technical Service Complaints (Not Rate Related)	4

Administrative Review



- Legal Authority
- Rules and Regulations
- Organizational Structure
- Staffing / Job Descriptions/Succession
- Emergency Preparedness/Security
- Customer Service & Public Awareness



Management is the
Key to Success

Water Use Rules & Regulations



Rules should clearly outline the legal authority of the utility to implement best management practices for water use including enforcement and penalties.

Should address mandatory connection, service line installation, maintenance and inspection, backflow prevention along with written billing and collection policies.



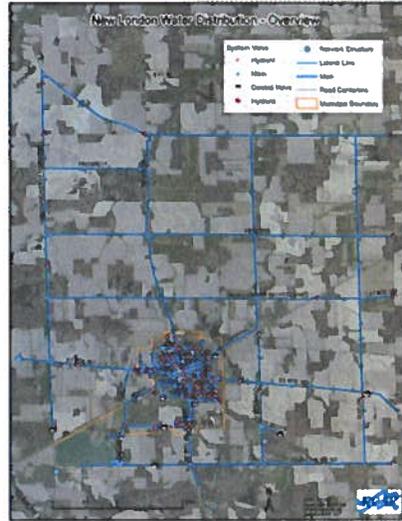
Rules & Regulations

GIS: "Asset Inventory made EASY"



- GPS's and mapped inventory including assigning attributes to assets: installation date, condition, construction material, criticality, size, capacity, replacement costs.

- Collected detailed inventory of over 915 assets with replacement value of over \$56 million.

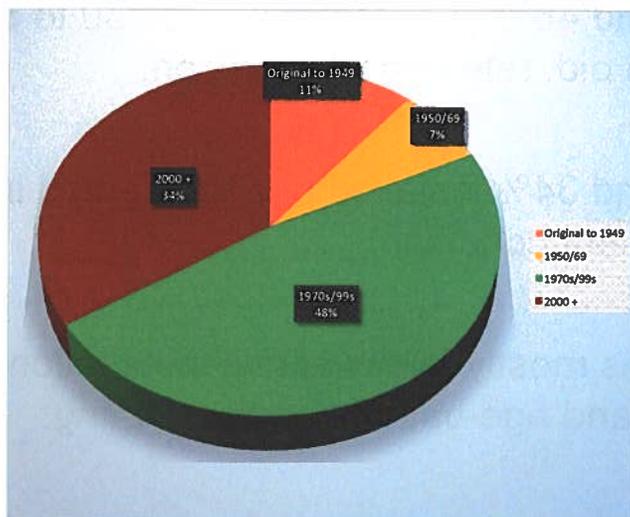


Asset Inventory Summary



Inventory Summary		
Water Utility	Unit	Description
Distribution Mains	LF	Around 72.5 miles (382,851 linear feet) 356 line segments, 2" to 12"
Hydrants	#	143
System Valves	#	320
Water Storage	#	4 totaling around 700,000 gallons, clearwells and above ground
Network Structures - Treatment	#	Around 80 significant assets inventoried

Summary of Distribution Age



Summary of Age/Condition



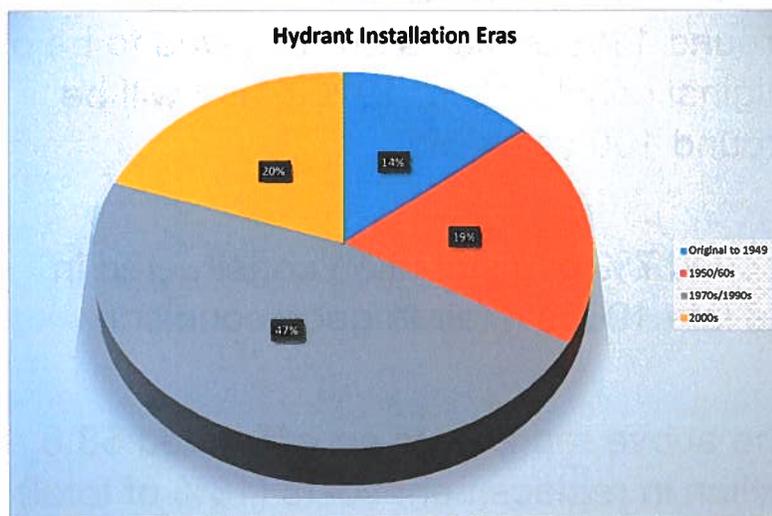
- Around 11% of mains are believed to be of original construction, 1920s, and will be around 100 years old.
- Around 7% of distribution constructed in the late 1960s – fair to good condition.
- The above represents an estimated \$8.8 million in replacement costs (18% of total).

Summary of Age/Condition



- Around 48% (1970/90s) around 50 to 30 years old, rated good condition.
- Around 34% installed in 2000s, rated in excellent condition.
- Valves mostly follow above installation eras and age-based condition rating.

Summary of Age/Condition



Summary of Age/Condition



- Hydrants tend to follow main construction eras as well.
- 14% original construction (to 1949)
- 19% 1950/60s
- 47% 1970/1990s
- 20% 2000+

Best Management Practices Preventive Maintenance/Predictive Monitoring



- Water Audits (Loss Tracking)
- Active Leak Location and Repair Program
- Valve Condition Assessment & Maintenance
- Hydrant Condition Assessment & Maintenance
- Pipeline Condition Assessment
- Pressure Management
- Water Line Flushing
- Backflow Prevention
- **Customer Education**



Best management practices are particularly important for water distribution since no owner's manual exist for this type of asset.

Current Best Maintenance Practices



- ✓ **Water loss tracking.**
- ✓ **Flushing twice a year.**
- ✓ **Hydrant inspections** twice a year and repair/replacement as needed based on condition.
- ✓ **Responsive to leak complaints.**
- ✓ **Active backflow prevention program.**

Improved Maintenance Needs



- ✓ **Budgeted for annual leak detection, \$5,000 annually starting in 2020. Adjusted for inflation annually.**
- ✓ **Implement Annual Valve Exercising Program.**
- ✓ **Budgeted for additional part time distribution staff (\$40,000 in 2020) to assist with implementation of AM plan. Adjusted for inflation annually.**
 - Note that the Utility will need to be exercising around 70 valves a year to comply with that part of the AM program.
 - The new AM rules also require significantly more record keeping on distribution maintenance, condition and developing and updating replacement and rehab schedules.

Planning for Asset Rehab and Replacement



■ The next section reviews:

- Estimating Short Lived Asset Replacement Needs/Predictive Monitoring
- Estimating Capital Rehabilitation and Replacement Needs

Short Lived Asset Replacement Reserve (Predictive Maintenance)



- Predictive maintenance involves the renovation and replacement of short-lived components of long-term asset.
- Also include maintenance activities that are higher dollar values, are not annual in nature (well inspections and cleaning, tower inspections, cleaning, rehab, media replacement, sludge removal etc.).
- The asset management goal should be to save 100% of predictive maintenance and short-lived asset replacement cost.
- Identified around **\$3,657,078** in short-lived asset replacement costs (including hydrants, meters, valves). Based on estimated useful life, need to collect around **\$211,131** annually.

Estimating Longer Term Asset Rehab & Replacement Needs



- Rehab/Replacement costs are an estimated attribute of the inventoried assets.
- Remaining useful life of assets should be adjusted to reflect the assessed field condition.
- A AM plan is used to document the current year reserve deposits necessary to provide long-term sustainability of the utility system.
- Self funding 100% of capital replacement cost is not a realistic goal.

**Nothing lasts forever. Everything
will wear out eventually.
Plan for asset replacement!**

Targets for Capital Improvement Reserve



Estimated Replacement Reserve		
Storage		
Above Ground Storage - Pedestal - 1962	250,000 Gallons	\$750,000
Clearwell #1 - buried concrete - 1998	150,000 Gallons	\$367,500
Clearwell #2 - steel glass lined - 2019	150,000 Gallons	\$367,500
Clearwell #3 - steel glass lined - 2019	150,000 Gallons	\$367,500
Source - Inlet Structure (West)		\$500,000
Treatment		
WTP Building	1998	\$750,000
TR1 - Clarifier	1998	\$120,000
TR1 - Filter	1998	\$120,000
TR1 - GAC	2019	\$123,250
TR2 - Clarifier	1998	\$120,000
TR2 - Filter	1998	\$120,000
TR2 - GAC	2019	\$123,250
TR3 - Clarifier	1998	\$120,000
TR3 - Filter	1998	\$120,000
TR3 - GAC	2019	\$123,250
TR4 - Clarifier	2019	\$120,000
TR4 - Filter	2019	\$120,000
TR4 - GAC	2019	\$123,250
Electrical Controls	2019	\$139,000
Sludge Drying Bed	2019	\$135,000
Distribution		
Around 382,852 lf of 1" to 12" - around 72.5 miles	1920s - 2000	\$48,338,961
Total Estimated Replacement Costs		\$53,168,461
Annual Escrow 20% over 50 years		\$212,674

Capital Improvement Program



- A water line rehabilitation/replacement program is necessary to defend the distribution system against the effects of time.
- Rehabilitation/replacement activities should be scheduled based on information obtained from your condition assessment and maintenance history records.



Utility Capital Improvement Plan



Capital Projects Plan															
Project Name/Description	Funding	Estimated Cost	Current Year	Ten Year Effort											
				2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030-2040
Meter Replacement 2015-2019	Local	\$64,601													
WTP Upgrade - increasing filtration capacity, clearwell capacity and adding GAC filtration.	OEPA	\$2,500,000	\$1,500,000												
Elevated Storage Tower - rehab exterior.	OEPA	\$200,000	\$200,000												
Distribution Replacement - around 1,600 linear feet of 8" to 6" on Park Street from Clyde Ave to S. Main. History of breaks.	OEPA	\$228,000		\$228,000											
Distribution Replacement - around 400 linear feet of 2" to 4" on Colburn Ct. from Walnut to Maple. Looping and increase capacity.	Local	\$42,800			\$42,800										
Distribution Replacement - around 300 linear feet of 4" on Johnson Drive between West Main and Miller Rd. Looping and additional hydrant, valve installation.	Local	\$32,100				\$32,100									
Distribution Replacement - around 200 linear feet of 6" on East Fr to Ledgett. Looping.	Local	\$28,600					\$28,600								
Fencing WTP - around 3,500 ft @ \$35 per ft	Local	\$122,500						\$122,500							
Hydrant Replacement	Local	\$90,000		\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	
Valve Replacement	Local	\$120,000		\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	
Distribution Replacement: Around 11% of distribution, original installation up to 1949.															\$4,960,159
New Tower - at least 130,000 gallons															\$750,000
TOTAL		\$3,364,000	\$2,500,000	\$221,000	\$249,000	\$63,800	\$53,100	\$49,600	\$143,500	\$21,000	\$21,000	\$21,000	\$21,000	\$21,000	\$5,710,159

Budgeting for Revenue Sufficiency



- Data collection
- Analysis of historical data
- Documentation of typical year operating budget
- Asset management planning
- Capital improvement plans
- Recognize the impact of inflation
- Budget for reserve accounts
- Develop ten-year operating budget

RCAP wrote the book!



Watch for our seminar on Asset Management, Budgeting and Rate Setting!

Safeguarding Capital Reserves



- Specific "savings" accounts should be established to help future decision makers understand the necessity of what seems like large fund balances.
- Capital improvement reserves must withstand the political storms which will occur during the asset's lifecycle.
- Future decision makers should be trained to understand and respect the asset management accomplishment of their predecessors.



Budgeting for Implementation



- Included \$45,000 in operating fund for improved maintenance.
- Recognize the impact of inflation – 3%.
- Combined the targets for SLA Replacement & Predictive Maintenance/CIP Reserve – around **\$423,805** annually.
- Budgeting for capital projects – around **\$3.3 million** over 10 year period expensed from local funds (\$436,000) and debt financing (around \$2.9 million, includes current WTP upgrade project).
- Impact to rates unrealistic, revised recommendations.

Revised Recommendations



- Kept previous recommendations except for following.
- Combined the targets for SLA Replacement & Predictive Maintenance/CIP Reserve – start with around \$75,000 and increased to around \$250,000 in 2029 when other debt is paid off.
- Also creation of a Water Rehab and Replacement fund for above transfer.
 - Three water funds, operating, debt retirement, capital rehab and replacement.

Revenue Sufficiency Needs



- ❖ In 2020, Utility needs to adjust rates by around \$3.17 on the monthly minimum (\$38 annually) and around \$0.62 per 1,000 on usage.
- ❖ In 2021, rates should be adjusted again \$3.64 monthly on minimum (around \$44 annually) and around \$0.71 per 1,000 on usage.
- ❖ Then can institute an automatic annual inflationary adjustment of 3% thereafter.

Still Only Around 1 Cent Per Gallon for Safe Drinking Water 24/7!

Combined Rates



- ❖ Combined water and sewer rates for 2021 would be around 3.0% of MHI if using 5,000 gallons per month (water 1.4% and sewer 1.8%).
- ❖ For the average residential user (around 3,500 gallons per month), combined rates would be around 2.29% of MHI (water 1.17% and sewer 1.41%).
- ❖ Water rates are considered affordable at 1.5% of MHI, 3% for combined water & sewer.

The higher your rates per MHI, the more competitive you are for grants/subsidized loans.

A Note on Rate Adjustments



Opposition usually declines if the customer:

- Understands why the rate increase is necessary to operate the system on a financially sound basis. Rates need to be **sufficient** for your system's needs; not your neighbors.
- Has a clear understanding of how the rate change will be implemented. How much and when!
- Believe that each customer group is paying it's fair share of the cost.

Share the calculations with your customers and emphasize the consequences of not enacting necessary rate increases?



Your Asset Management Plan



Why Goals Are Not Achieved

