Wichita State University
Hugo Wall School of Public Affairs
Environmental Finance Center

PROACTIVE ASSET MANAGEMENT TRAINING: GETTING AHEAD OF THE ISSUES

Governor's Conference on the Future of Water in Kansas

November 8, 2019

Brian Bohnsack

Program Manager

ASSET MANAGEMENT

- America's Water Infrastructure Act of 2018 added asset management outreach and promotion as a requirement for state capacity development programs.

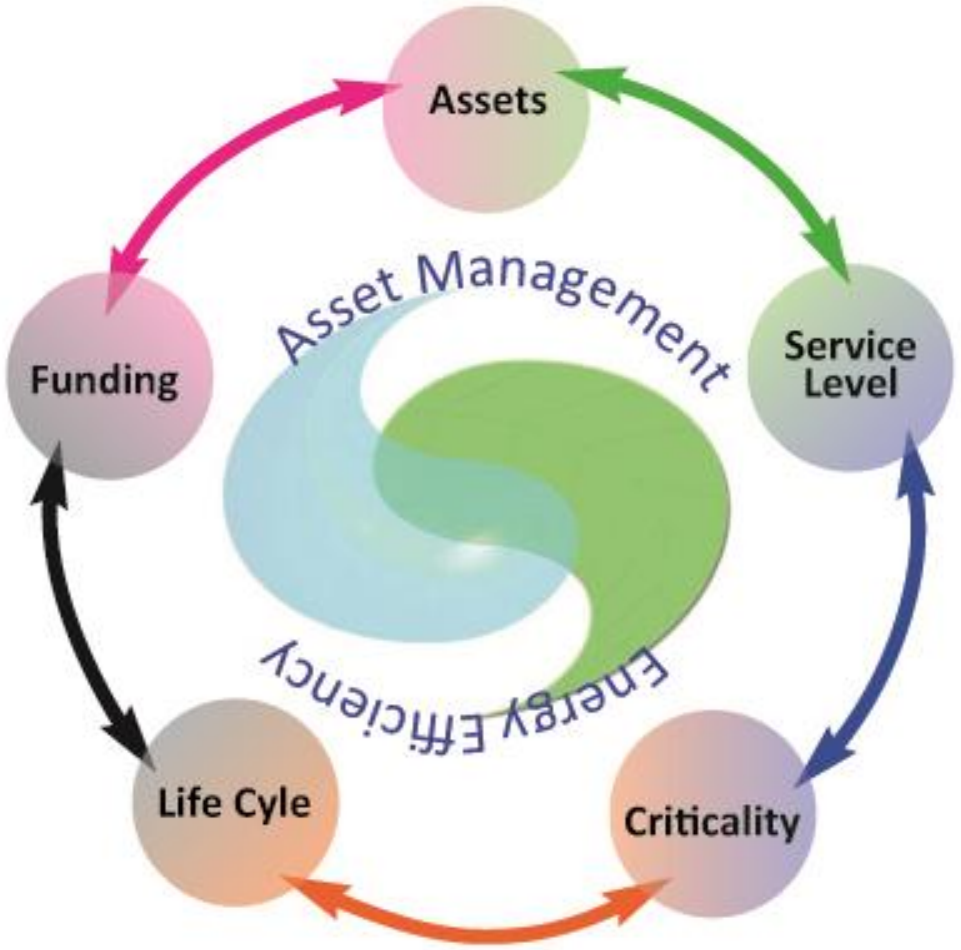
- Summary of status of state efforts is available in State Asset Management Initiatives- February 26, 2019 report by EPA Office of Water.

WSU ENVIRONMENTAL FINANCE CENTER

- Established in 2010 and part of larger network funded by EPA.
- Recognized strength in asset management training, finance and other topics.
- More than 1,000 people trained nationally.

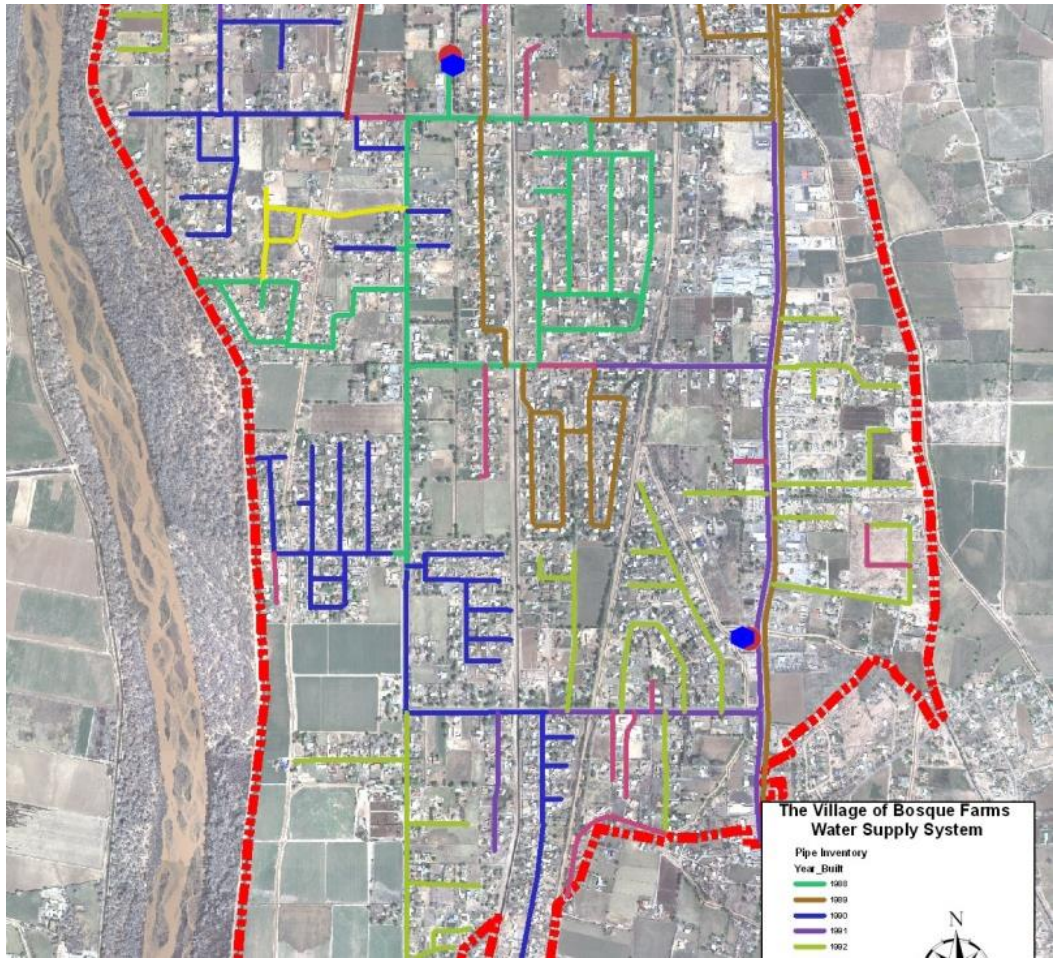
ASSET MANAGEMENT OVERVIEW

- **Five Core Components**
  - **Inventory & Condition**
    - What, where, how much?
  - Level of Service
    - What assets do, customer service?
  - **Criticality**
    - Risk – probability X consequences
  - **Lifecycle Costing**
    - All costs, acquisition, O&M, rebuilds, disposal
  - Long-term Funding
    - Functional budgets, Capital Improvement Plans, cash/debt financing



INVENTORY & CONDITION ASSESSMENT

- ►What does utility own?
- ►Where is it?
- ►What will it cost to replace/rehab?



-0:00

True or False?

Like Comment Share

City of Topeka Utilities Department

1

43 Views · about 2 months ago

True or False Answered: FALSE! The Utilities Department only has 20,407 manhole lids within Topkea. Thanks for playing

Chat (31)

LEVEL OF SERVICE

- Involve customers and customer service.
- Do you communicate more than just the CCR?
- Lots of different methods/opportunities to involve and educate customers.

Photos from City of Topeka Utilities Department's post

in Timeline Photos

True OR False

Large brick storm sewer installed in Topeka in the 1880's

Like Comment Share Options Send in Messenger

*Image Source: Impact of Water on the Development of Topeka

City of Topeka Utilities Department · July 31

In regards to yesterday's True or False question, the answer is TRUE! The City of Topeka Utilities Department has approximately 29,730 linear feet of BRICK sanitary sewer still in use today. There are segments of this brick sewer that have installation dates that range from 1892-1924. Pictured is a brick storm sewer that was constructed in 1880. The largest of these brick sewers were 5-7 feet in height.

We hope you enjoyed playing along and gained some fun Topeka history. Make sure to like our page so that you can get notified when we post more True or False questions!

You and 29 others 1 Comment 4 Shares

Like Comment Share

Most Relevant

Karl Fundenberger I'm pretty sure this old line is the reason my toilet is haunted

Like · Reply · 8w 2

Write a comment...

CRITICALITY

- Some utility assets are riskier than others
- Largest risk may be to customers or society – not utility
  - Emporia main break 2017
    - 20 inch main
  - Boil orders in town & purchasing systems (12 total)
  - Businesses close
    - Obvious ones – car washes, laundromats
    - Less obvious – manufacturing sends shift home
    - Emporia State closed
    - Child care closed
    - Tyson sends workers home
    - Restaurants closed
    - Elective surgeries rescheduled
    - Hospital hauls water for cooling towers

THE EMPORIA GAZETTE

News | Sports | Obituaries | Opinion | Community | Area News | Multimedia | E-Paper | Magazines

Jack's Lawn & Pool Store
"We're more than a Pool Store"
829 Commercial St.
Emporia
620-208-7660
Your Platinum Bioguard Dealer
BioGuard

FEATURED

Water main break causes city-wide outage

The Emporia Gazette Jul 20, 2017 4

1 of 14

Regina Murphy/Gazette

Buy Now

Most Emporians woke up to an unpleasant surprise today: no water. According to a city individual at the after-hours number, a break at 15th and Prairie has reduced or eliminated water pressure through "most

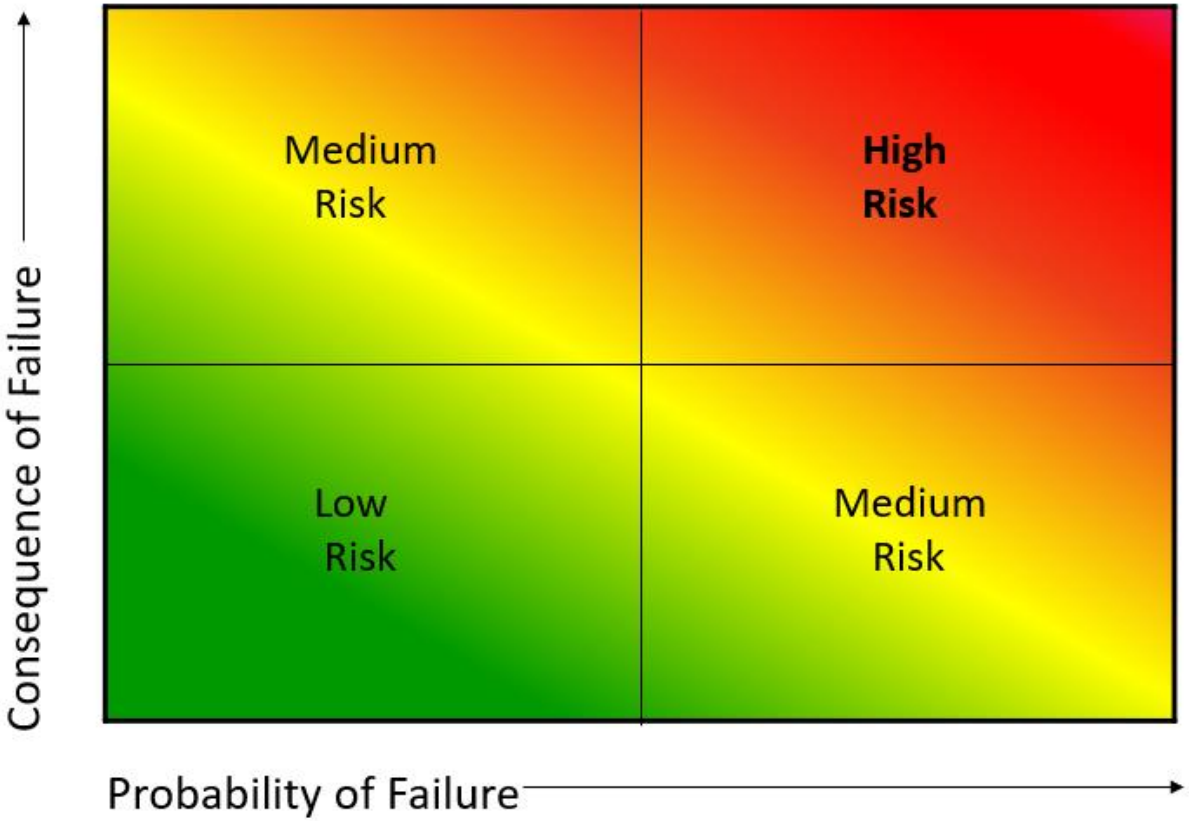
CRITICALITY

- Risk = probability X consequences
- Probability = judgement call, past experience, other's experience, maintenance, rebuilds, etc.
- Consequences = direct costs to utility, risks of costs to utility through non-compliance, costs to the public at large and specific customers

CRITICALITY IN PRACTICE

- Ranking asset criticality
  - Long-term cost savings
  - Long-term risk reduction

- Ranking assets allows for:
  - Prioritization in CIP
  - Change in maintenance
  - Changes in operation



CRITICALITY – FINANCIAL WINS

- Optimizing outsourcing
  - Are your skilled operators driving mowers around?
  - Can their time and skills spent mowing lead to greater maintenance, reliability and lower risk?

- Optimization of valve exercising
  - Ensure critical valves operate by more frequent exercising/maintenance
  - Less risky valves exercised less frequently

- Optimization of sewer cleaning
  - Utilities moving away from 1/4th of town to risk-based cleaning/camera work
  - New residential lines unlikely to have problems
  - Visit likely/known problem areas more frequently

LIFECYCLE COSTING

- Operate assets at lowest lifecycle costs
  - Acquisition
  - Operation & Maintenance
  - Repairs
  - Rebuilds and Rehabilitation
  - Disposal/sale

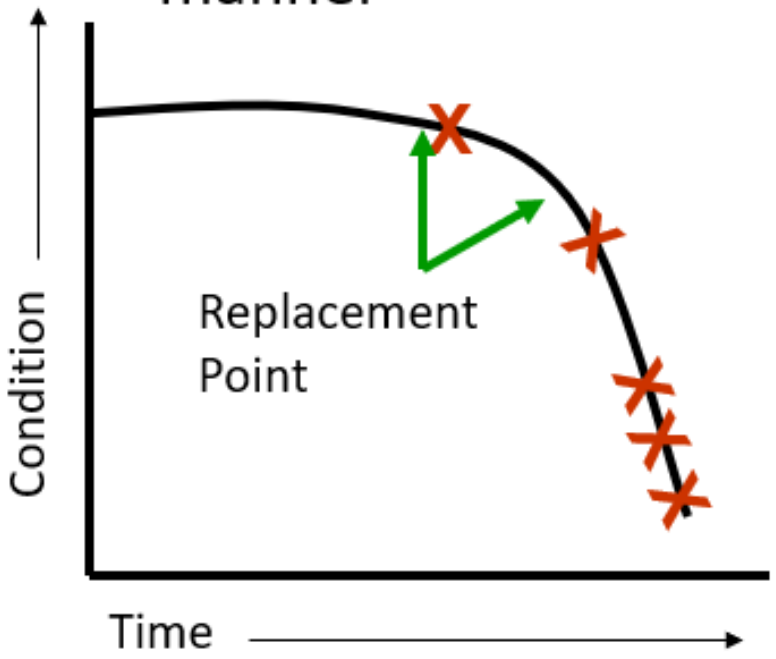
About 90% of an electric motor's lifecycle cost is electricity

- Requires:
  - Attempt to calculate lifecycle costs
  - Willingness to (maybe) throw out low-bid sourcing
  - Willingness to operate in grey areas of accounting
    - Is it maintenance or capital expense?
      - i.e. cement manhole lining, cured-in-place sewer pipe, metal refinishing at treatment plant

LIFECYCLE – BETTER TIMED REPLACEMENTS

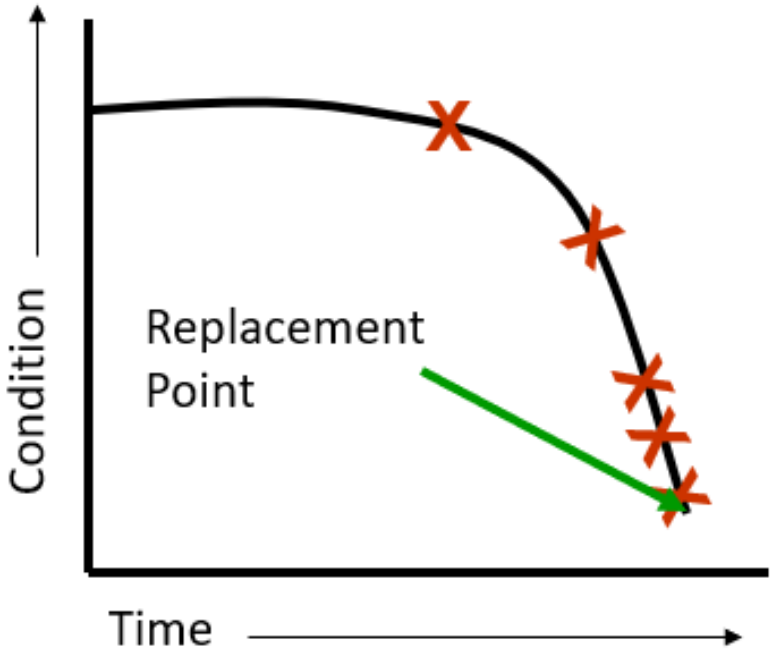
High risk assets: err on the side of replacing too soon, before failure

- Replaced in a planned manner



Low risk assets: allow them to run to failure and replace afterwards

- Managed failures



LIFECYCLE COSTING – BEST BETS

- Sensors & controls for wastewater plants
  - Better treatment quality, significant reduction in electric consumption
- Variable frequency drives on water & wastewater pumps
  - Minimize pipe breaks through “soft start”
  - Significant reduction in electrical consumption
  - Better wastewater treatment
- Lining of sanitary sewer pipe
  - 1/10th to 1/5th the cost, 40-50 year life, little disruption, reduce excess flows
- Manhole rehabilitation
  - Half to greater life expectancy – 1/3 to 1/2 cost, little disruption, reduce sewer flows
- Painting of steel tanks

ASSET MANAGEMENT OPPORTUNITIES

- Training Opportunities
  - 11/19/2019 - Cimarron, KS
  - 1/14/2020 - El Dorado, KS
  - 2/11/2020 - Hays, KS
  - 3/10/2020 - Chanute, KS
- Asset Management Users Group
  - Next meeting in 2020
- Asset Management Listserv

Wichita State University
Hugo Wall School of Public Affairs
Environmental Finance Center

Thank you.

Stay informed on our projects and trainings!
Subscribe to our email list at **www.wichita.edu/efc**

CONTACT US

Brian Bohnsack

316-978-6421

brian.bohnsack@wichita.edu

Wichita State University Environmental Finance Center

www.wichita.edu/efc | @WSUEFC