



# ILLINOIS WATER INFRASTRUCTURE:

## The Dawn of the Infrastructure Replacement Era

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# Introduction:

## The state of our infrastructure

- Regional needs
- Asset Management
- The business case





# The municipality as a BUSINESS UTILITY

- **Municipal Services**

- Police, Fire, Community Development, etc.

- **Municipal GOODS:**

- Operation of a production facility (Value added)
  - Delivery of goods to consumer
  - Purchase Agreement
  - Measurement of goods delivered
  - Payment

- **Municipal Goods** are converted into products with additional **value added**.
- Correlation exists to private utilities



# Water Infrastructure Condition

- **ASCE Analysis** (American Society of Civil Engineers)
  - 240,000 water main breaks annually
  - Replacement cost exceeds \$1Trillion
  - **2013 “D” rating**
- 22 billion gallons of Lake Michigan is leaked annually (\$64M – \$124M loss)
- Many municipalities with groundwater sources **exceed 10% water loss.**
- Watermain breaks **impact other services (GMP)**
  - transportation,
  - emergency access, and
  - **Businesses** (restaurants, hotels, manufacturing, etc.)

*Gross Municipal Product*

2018  
REPORT CARD  
FOR  
AMERICA'S  
INFRASTRUCTURE

ASCE  
AMERICAN SOCIETY OF CIVIL ENGINEERS

D

WASTEWATER

D

DRINKING WATER

# Asset Management

- Water infrastructure is the **asset**
  - Production: wells/treatment plant
  - Delivery: distribution system/pipes
  - Measurement: water meters
- Water infrastructure is also the **liability**
  - Depreciation
  - Replacement Cost
- How do **private industries** account for assets?
- How would the **market respond** if the private utilities managed assets like many municipalities?





# Why it matters - Delivery Failure

- **Uncollected Revenue (10%+)**
  - Under-registering meters
  - Water leaks
  - Watermain breaks
- **Unnecessary Expenditures**
  - Power/Energy
  - Chemicals
  - Maintenance Costs
- **Mismanaged Raw Materials**
  - Groundwater depletion without delivery





# Life-cycle Costs – Not a Mystery

TABLE 4 ★ The Useful Lives of Drinking-Water System Components

COMPONENT	USEFUL LIFE (YEARS)
Reservoirs and dams	50–80
Treatment plants—concrete structures	60–70
Treatment plants—mechanical and electrical	15–25
Trunk mains	65–95
Pumping stations—concrete structures	60–70
Pumping stations—mechanical and electrical	25
Distribution	60–95

SOURCE EPA (2002, table 2-1).



# What will the CEO do?

- **Quantify Losses**
  - AWWA M36 Water Audit
  - Leak Detection
  - Meter testing
- Compute **non-revenue water**
- **Account** for both assets and liability
- **Fund** for infrastructure replacement







# Thank You!

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**95%**  
of Americans think it's  
important to improve and  
modernize water &  
wastewater systems.

The Value of Water National Poll, 2016