



85th Annual Conference & Exhibits

# Michigan Water Infrastructure Condition and Future Needs

Water Asset Management Council  
Carrie Ricker Cox

AD43

MI-ACE 2023

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## History and Background

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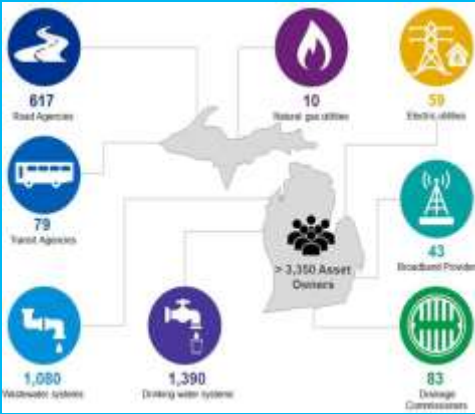
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# History and Background

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“Coordinated infrastructure planning and management is a necessary foundation to a successful future system. If implemented in a standardized and systematic way across infrastructure types and jurisdictions, asset management can improve coordination and significantly reduce costs”

**Michigan Infrastructure Asset Management Pilot Final Report**



## Legislation Package 2018



Public Act 323 of 2018  
Michigan Infrastructure Council Act



Public Act 324 of 2018  
Water Asset Management Council



Public Act 325 of 2018  
Transportation Asset Management Council

Legislation Package 2018



- **Unified** – Culture of Asset Management across assets and across Michigan
- **Tactical** – Common definitions, standards, processes, requirements
- **Strategic** – Coordinated training/education, projects, funding, policy, analytics

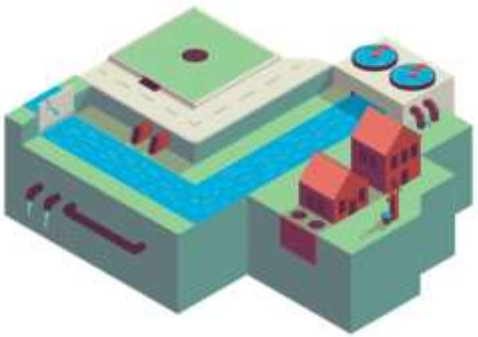
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Water Asset Management Council

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Our Mission:

In collaboration with the Michigan Infrastructure Council, foster and support a statewide culture of asset management focused on the role of water infrastructure in providing public health and optimizing stakeholder value.



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# Our Legislative Assignment

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## Develop

- an asset management template for annual reporting by 1/3 of Michigan Water Systems



## Report

- to the Legislature Annually on the asset condition of Michigan Drinking Water, Wastewater and Storm Water assets



## Recommend

- include recommendations on condition goals and how utilities are meeting those goals

## Do you know...

If your utility or your customers/clients utility is covered by the WAMC reporting requirements?



# Who Falls under the WAMC Reporting?

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A drinking water, wastewater or stormwater “Asset owner,” which is a person or agency that owns or operates an asset that meets either of the following requirements:

1. Serves 1,000 or more individuals and
2. Required by a national pollutant discharge elimination system permit by the safe drinking water act, 1976 PA 399, MCL 324.1001 to 324.1003, to have an asset management plan.

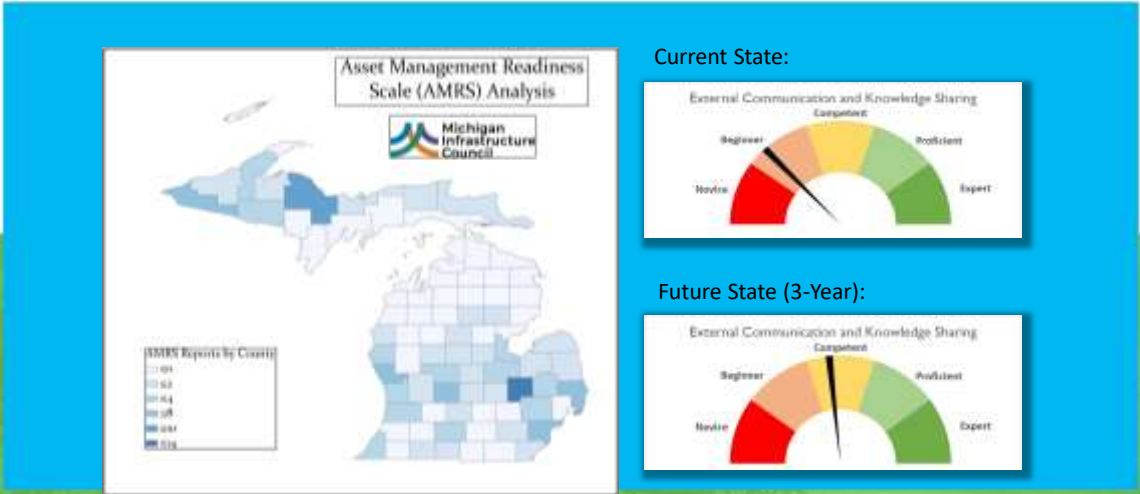
Statewide asset owners under current EGLE AMP requirements

- Community Water Supply ~ 541 required AMPs
- Water Resource Division ~ 133 required AMPs
- Stormwater ~ 176 required AMPs

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# Management Readiness Scale

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<https://www.michigan.gov/mic/am-champions/assess>

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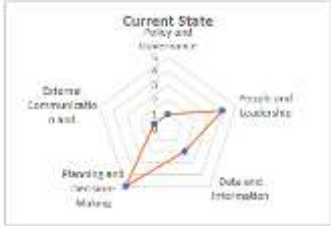


# Management Readiness Scale

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Current State:

Current State						Future State				
Outcomes: Select the outcomes that your organization has achieved.						Select the level you expect to achieve				
Outcome Area	Level 1	Level 2	Level 3	Level 4	Level 5	Current (past 1 yr)	Year 1	Year 2	Year 3	
B. Service Data	<input checked="" type="checkbox"/> We have achieved an external reputation for meeting state or service performance.	<input checked="" type="checkbox"/> We have better information on performance on critical assets, collected from a variety of sources.	<input checked="" type="checkbox"/> We have defined level of service requirements for some service areas.	<input checked="" type="checkbox"/> We have defined level of service requirements for transportation areas.	<input checked="" type="checkbox"/> We have defined level of service requirements for other critical service areas.	2	2	4	5	
	<input checked="" type="checkbox"/> We have achieved an external reputation for meeting state or service performance.	<input checked="" type="checkbox"/> We have better information on performance on critical assets, collected from a variety of sources.	<input checked="" type="checkbox"/> We have defined level of service requirements for some service areas.	<input checked="" type="checkbox"/> We have defined level of service requirements for transportation areas.	<input checked="" type="checkbox"/> We have defined level of service requirements for other critical service areas.					
	<input checked="" type="checkbox"/> We have achieved an external reputation for meeting state or service performance.	<input checked="" type="checkbox"/> We have better information on performance on critical assets, collected from a variety of sources.	<input checked="" type="checkbox"/> We have defined level of service requirements for some service areas.	<input checked="" type="checkbox"/> We have defined level of service requirements for transportation areas.	<input checked="" type="checkbox"/> We have defined level of service requirements for other critical service areas.					
Describe Current Actions						Describe Planned / Potential Actions				
Through SAGI LTA, WRC created level of service range and allows each local to update their unique level of service. Royal Oak Township did have this option available but it was not utilized on the water side and the information was not shared with Township elected officials.						The Township's water system level of service is set by the disadvantaged condition of most residents and the Township is down to maintain any rate increases. WRC is helpful that DWAAM guest courses along with other potential assistance, specifically for lead service line replacement, will help advance this discussion with the Township and their elected officials.				



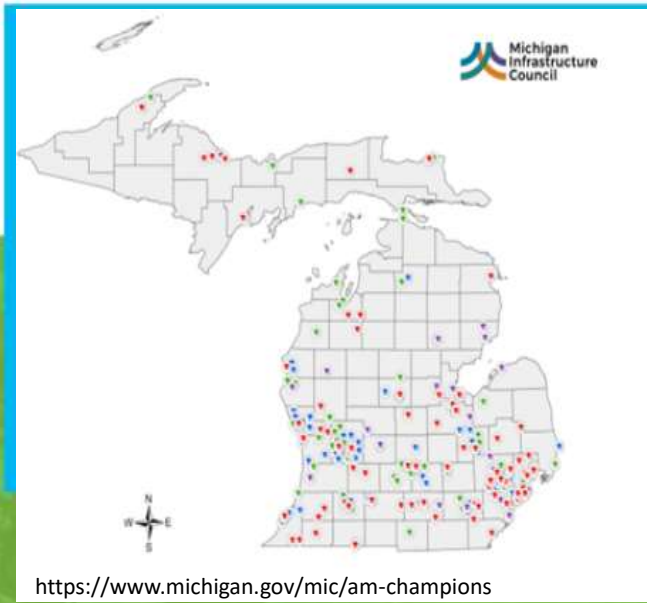
Future State (3-Year):



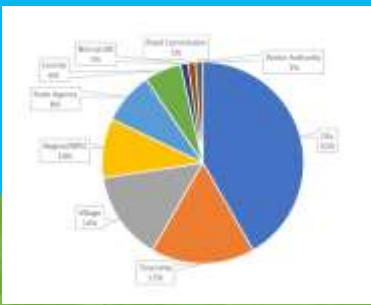
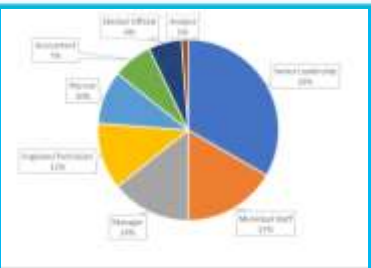
<https://www.michigan.gov/mic/am-champions/assess>

# Asset Management Champion

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<https://www.michigan.gov/mic/am-champions>



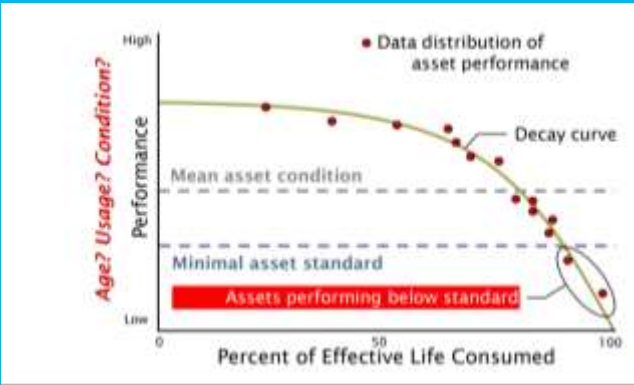
# Asset Management Survey

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13. Have you done a Probability  
of Failure analysis on your assets?

Yes

No

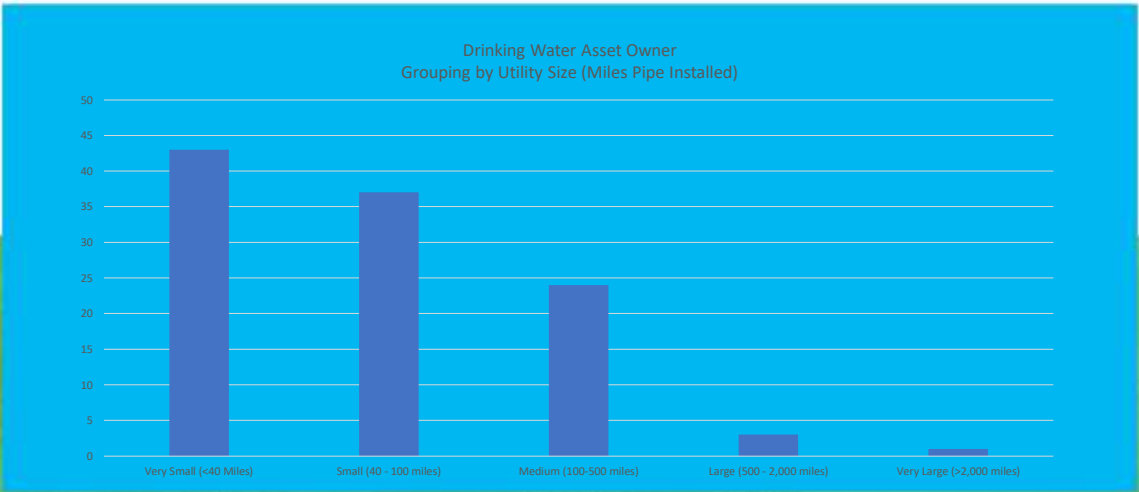


<https://www.michigan.gov/egle/about/groups/water-asset-management-council>

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# Asset Management Survey

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# Asset Management Survey

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THIS IS THE CONDITION RATING SCALE USED:

- Very poor:** The asset is unfit for sustained service. It is near or beyond its expected service life and shows widespread signs of advanced deterioration. Some assets may be unusable.
- Poor:** There is an increasing potential for its condition to affect the service it provides. The asset is approaching the end of its service life, the condition is below the standard and a large portion of the system exhibits significant deterioration.
- Fair:** The asset requires attention. The asset shows signs of deterioration and some elements exhibit deficiencies.
- Good:** The asset is fit for the future. It is well maintained, in good condition, new or recently rehabilitated through mid-stage of its expected life.



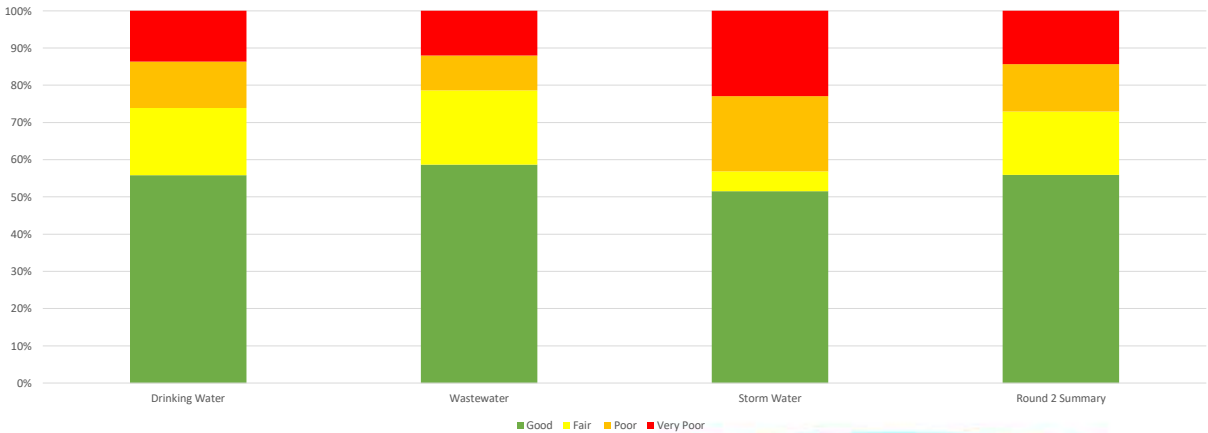
Photos Courtesy of Prein & Newhof

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# Asset Management Survey

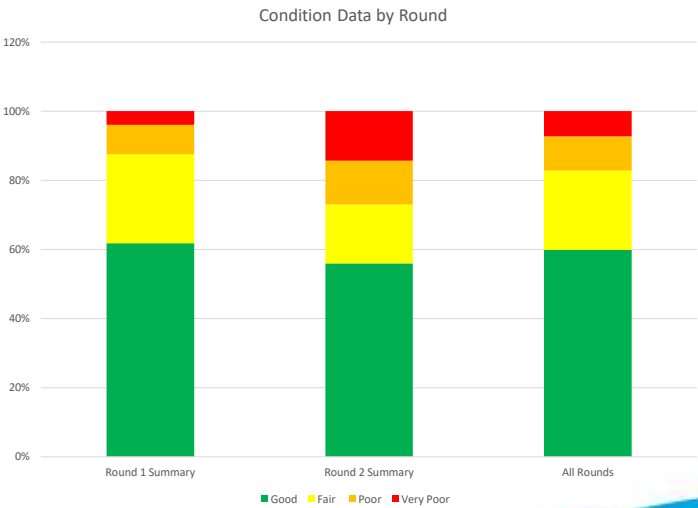
Round 2 Survey Results



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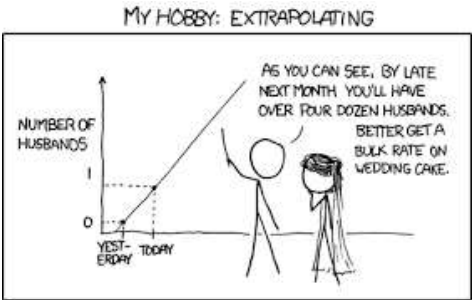
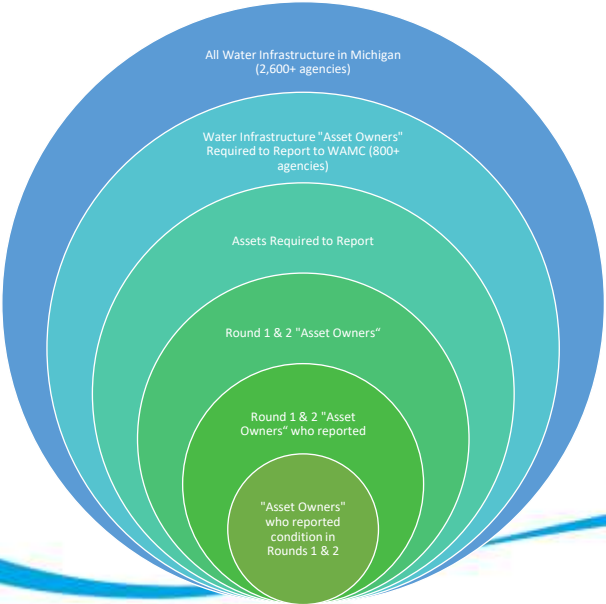


# Asset Management Survey



Photos Courtesy of Prein & Newhof

# Just the Tip of the Iceberg



# Data Collection Challenges

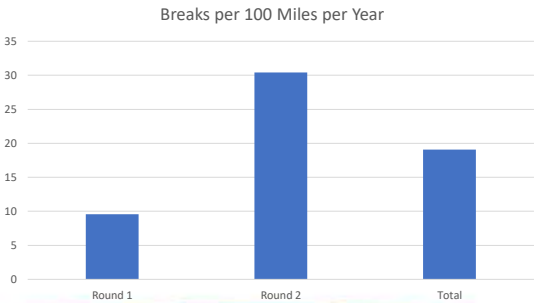
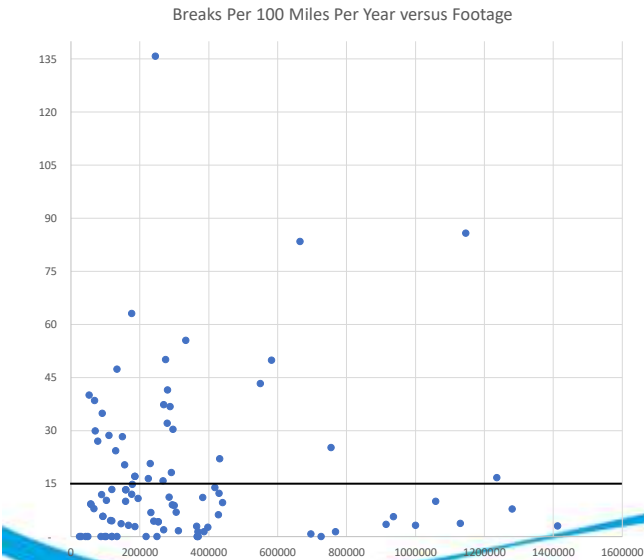
## GOALS

- Provide data only once to the state
- Cross pollinate data across government agencies
- Simplify the collection process by creating templates
  - Allow data to be easily accessible
  - Provide Clear Guidance to Asset Owners

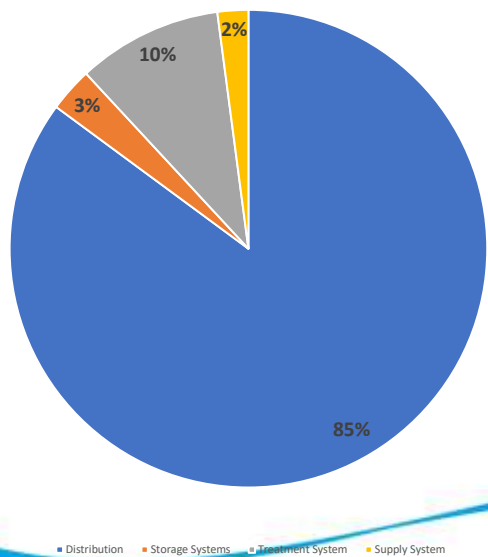


# Asset Management Survey – Main Breaks

- Safe Drinking Water Distribution System Optimization Program  
Goal – 15 breaks / 100 miles



# Asset Management Survey – Replacement Cost



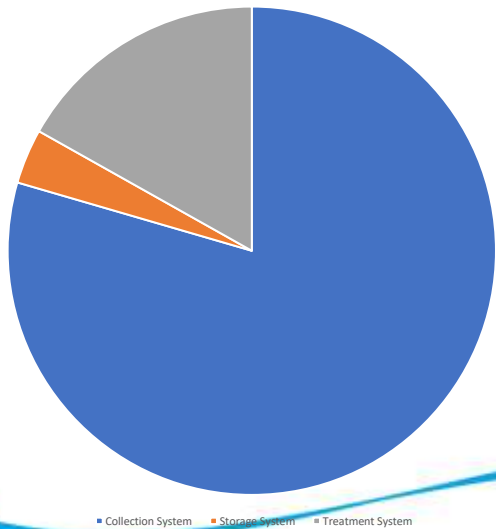
- Drinking water systems reported over \$21.78 billion in replacement value
  - \$18.5 Billion distribution
  - \$650 Million Storage
  - \$2.1 Billion in treatment
  - \$454 Million source/supply



Photos Courtesy of Prein & Newhof

# Asset Management Survey – Replacement Cost

Wastewater - \$12B in Replacement Value

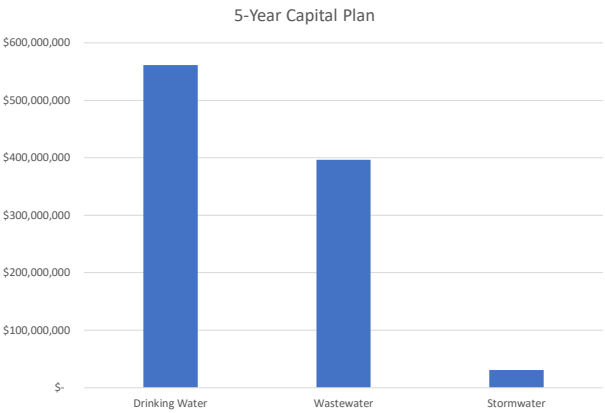


- Stormwater Systems reports over \$9.9 Billion in replacement value, 99% of which in collection system assets
- Wastewater Systems \$12B
  - \$9.5 Billion collection
  - \$ 434 Million Storage
  - \$2.1 Billion in treatment



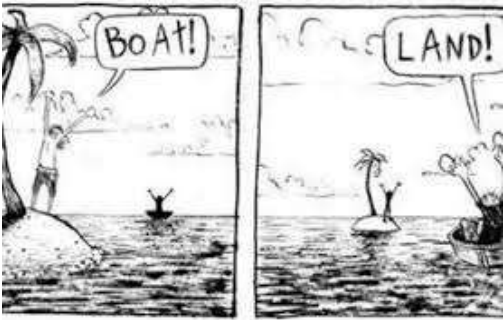
Photos Courtesy of Prein & Newhof

# Asset Management Survey – Capital Improvement Plan



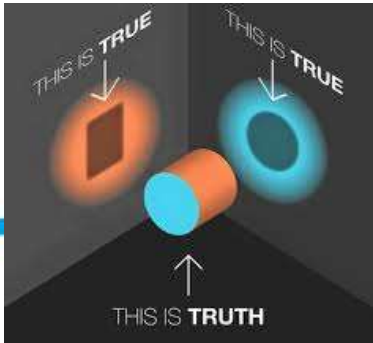
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# Asset Management Survey – Capital Investment



- 1% of replacement value

- Replace all assets known to be in poor or very poor condition in the next 5 years



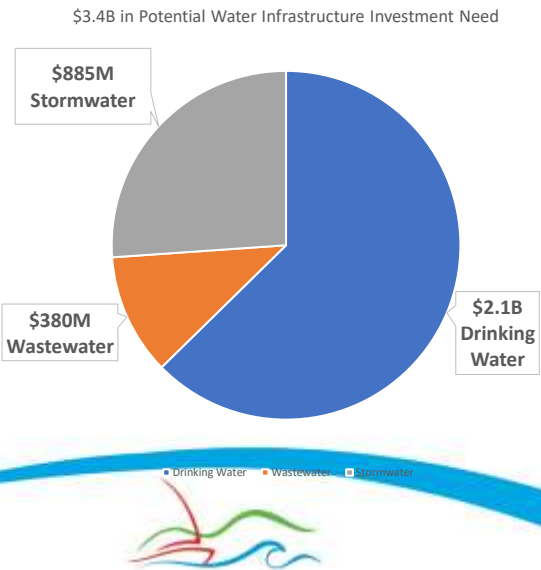
<https://www.michigan.gov/egle/about/groups/water-asset-management-council/kpi-committee>

# Asset Management Survey – Capital Improvement Plan

Utility	Proposed 5 Year Capital Plan	1% Replacement Value	Replace Poor and Very Poor in 5 yrs
Drinking Water	\$ 561,525,372	\$ 1,089,067,271	\$ 2,124,390,500
Wastewater	\$ 396,416,236	\$ 102,011,573	\$ 381,168,980
Stormwater	\$ 30,858,298	\$ 495,691,120	\$ 885,105,000
<b>Total</b>	<b>\$ 988,799,906</b>	<b>\$ 1,686,769,965</b>	<b>\$ 3,390,664,480</b>



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## Just the Tip of the Iceberg







# Moving Forward – WAMC Recommendations

- DATA COLLECTION
- ASSET MANAGEMNET TRAINING
- WORKFORCE



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## QUESTIONS?



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248-470-1314  
<https://www.michigan.gov/egle/about/groups/water-asset-management-council>

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