



Urban Water Symposium – from Amsterdam to Toronto
THEME: Urban Water Use and Demand
January 20, 2020

Asset Management

Aging Infrastructure, Service Delivery & Risk

Presented by:

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Asset Management



SOURCE: **InfraGuide**: Managing Infrastructure Assets (Oct 2005)

Asset Management and Risk

RISK DEFINITION (FCM)

The product of the likelihood and consequence of an undesirable event or circumstance. Risk includes both asset risks (e.g. a pipe failing) and strategic risks (e.g. insufficient funds for renewal of critical assets).

- **RISK (ISO 55000:2014)**
effect of uncertainty on objectives (3.1.12)

Note 1 to entry: An effect is a deviation from the expected — positive and/or negative.

What are your objectives?

SOURCE: **ISO 55000:2014** Asset Management

Asset Management and Service Delivery

Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure

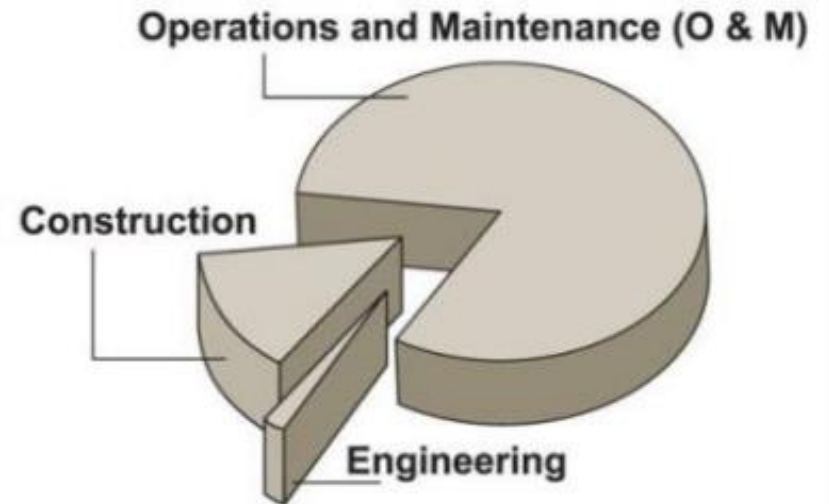
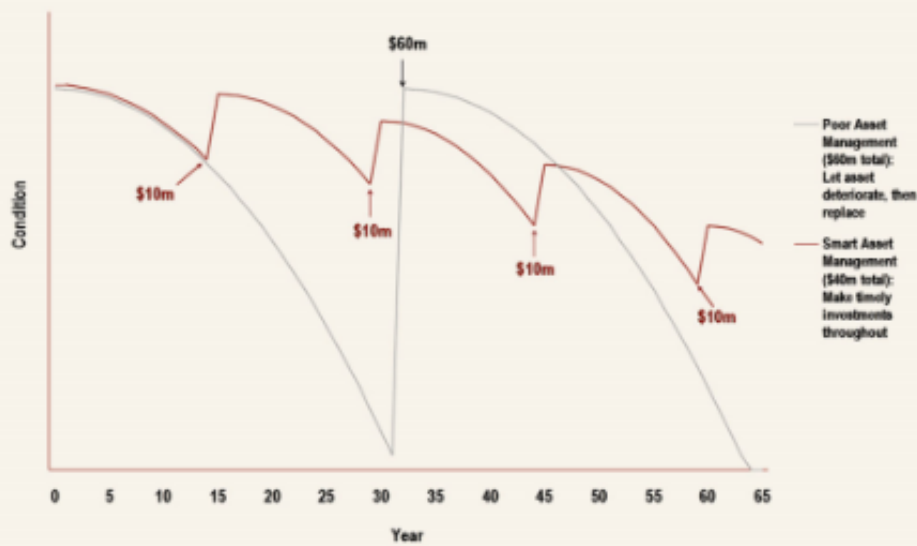
- In effect January 1, 2018
- **Strategic asset management policy (July 2019)**
- Promote best practices
 - Link AM plan with budgeting, operations, maintenance and other planning activities
- **Core infrastructure (July 2021); current levels of service**
- **All assets (July 2023); proposed levels of service (July 2024)**
- Report on implementation annually; 5 year updates.
- *“Actions that may be required to address the vulnerabilities that may be caused by **climate change** to the municipality’s infrastructure assets...”*

SOURCE: **Ontario Regulation 588/17** Asset Management Planning for Municipal Infrastructure

Lifecycle Approach

Figure 1

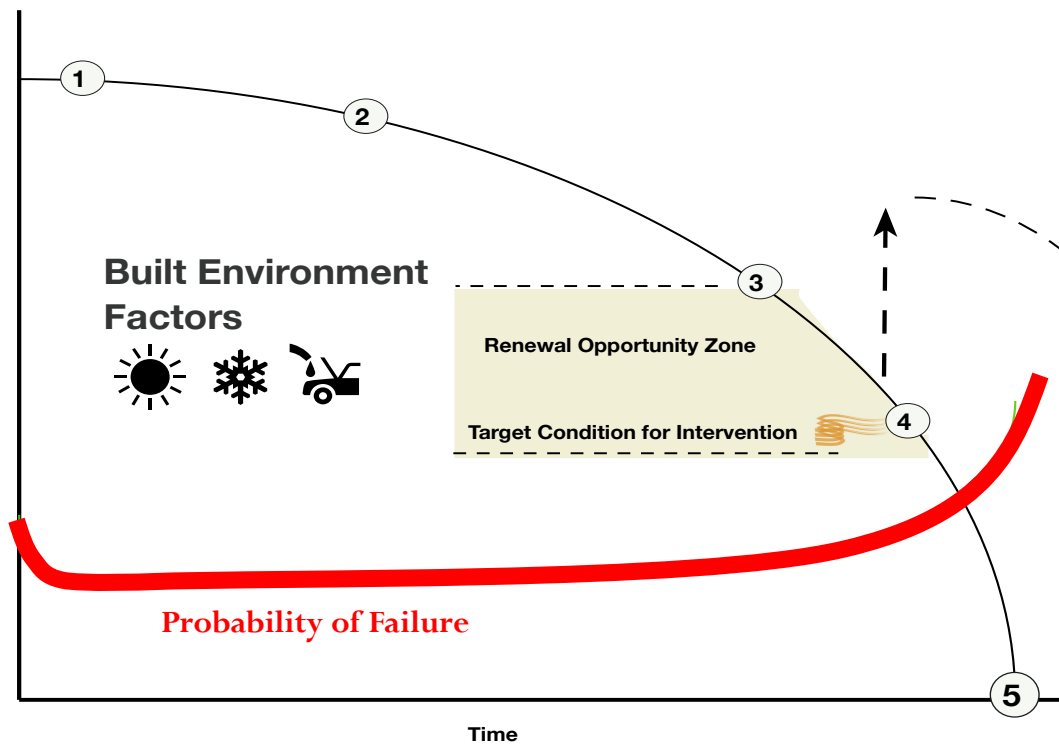
Small but Timely Renewal Investments Save Money



REF: Ontario Guide for Municipal Asset Management Plans

REF: InfraGuide

Deterioration Curve



5 Point Scale:

1 = Very Good (New)

2 = Good

3 = Fair

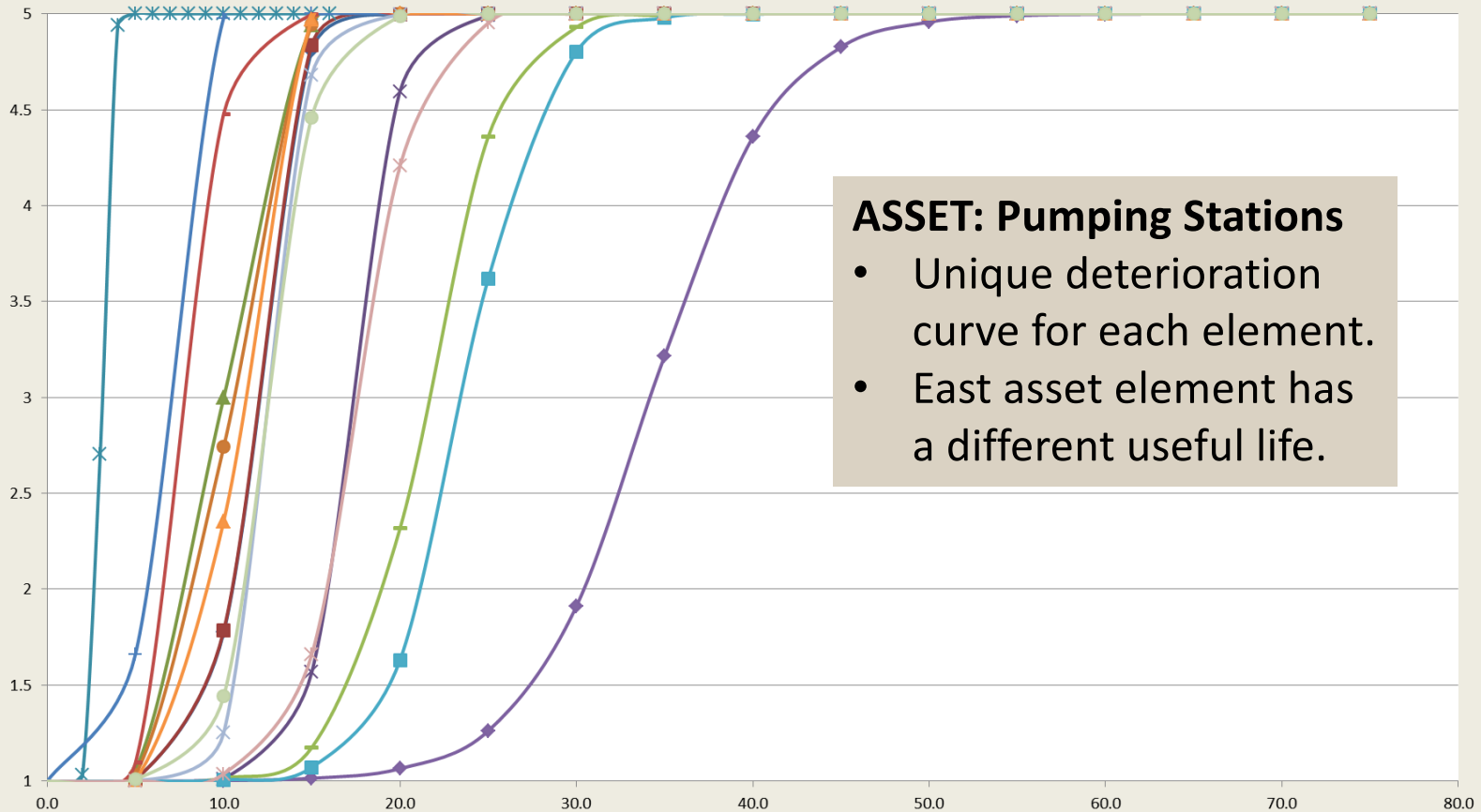
4 = Poor

5 = Very Poor

Renewal Zone:

Threshold of acceptability, or state in which an asset required to be rehabilitated/ refurbished in order to avoid failure and potentially costly consequences

Asset Condition Curves



ASSET: Pumping Stations

- Unique deterioration curve for each element.
- Each asset element has a different useful life.

Asset Portfolio Statistics

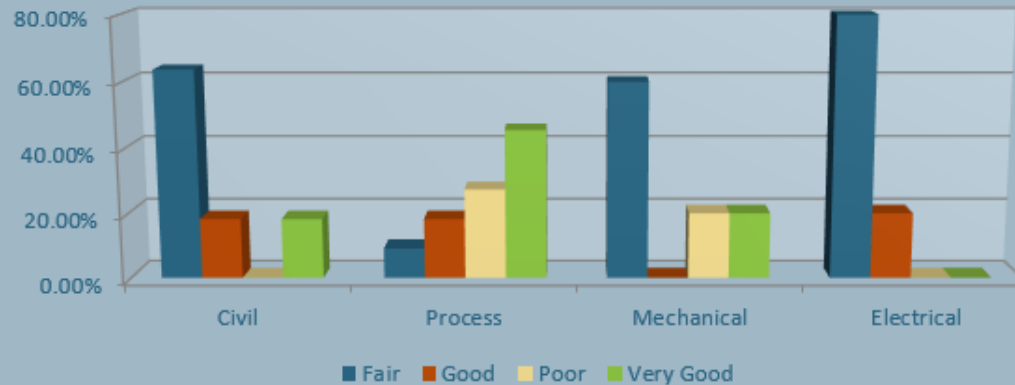
Total Assets :	12
Assets with Condition Data :	12
Total Asset Elements :	73

Average Assets Condition :	2.29 (Fair)
Worst Asset Condition :	4.49 (Poor)
Best Asset Condition :	1.00 (Very Good)

Asset Condition Grades



System Condition Grades (All Assets)



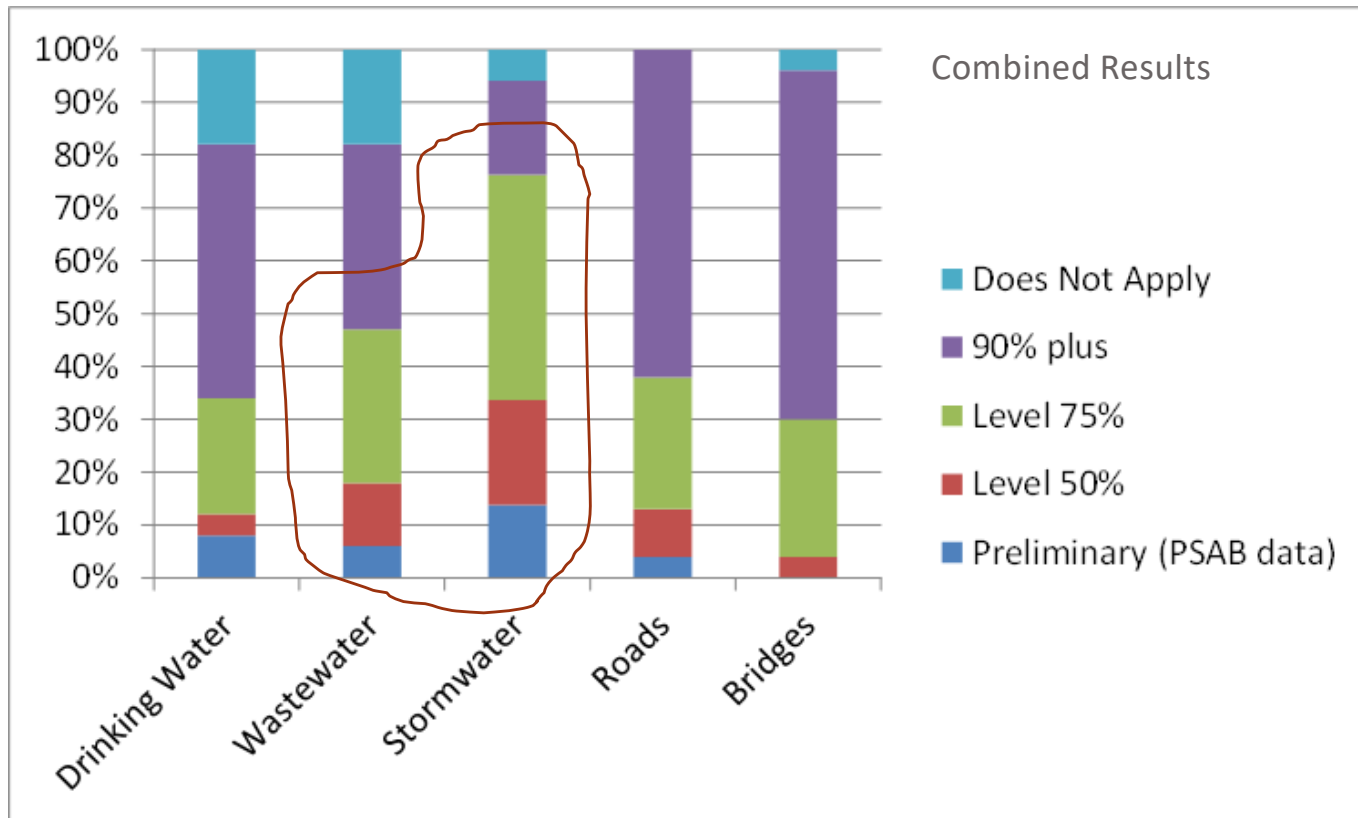
ASSET: Pumping Stations

- Condition of main asset components
- Condition of Systems (civil, process, mech, electrical)

In this example:

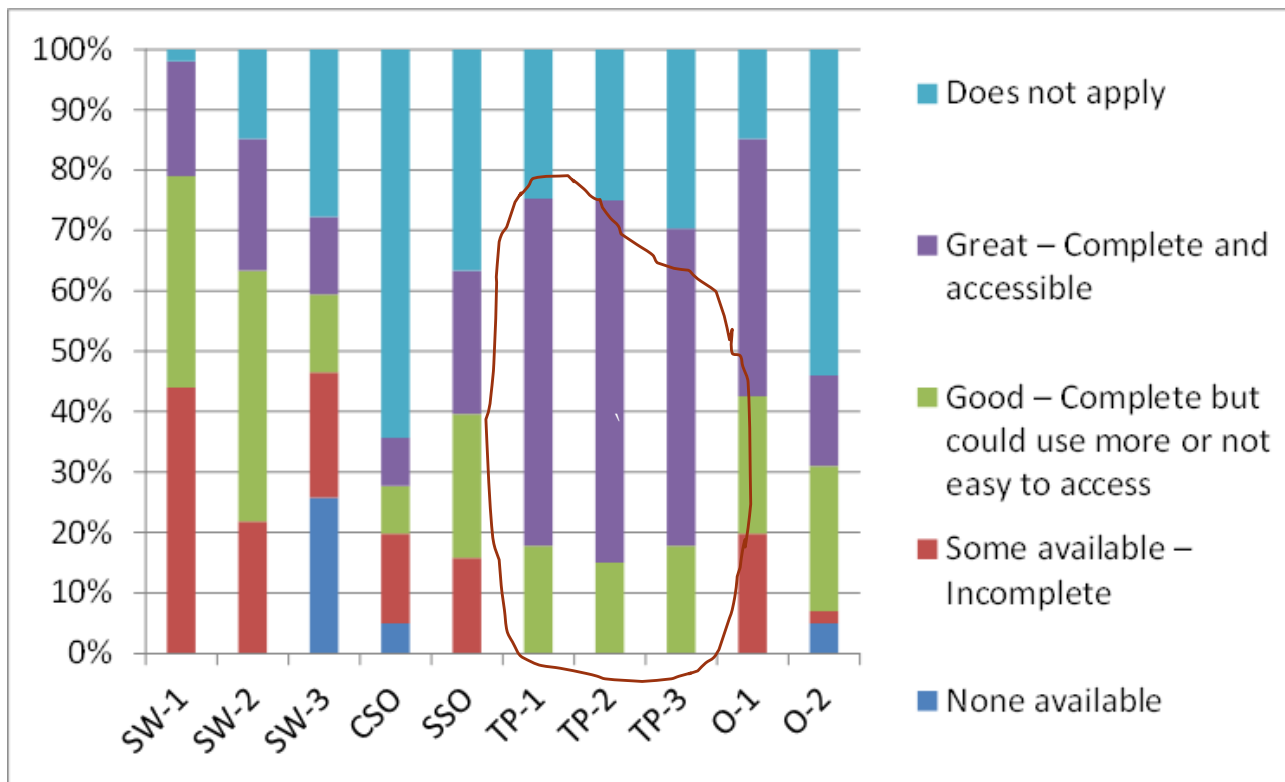
- Average asset condition is 2.29 (fair)
- Worst asset is 4.49 (poor)
- Best asset is 1.00 (very good)

Confidence in Your Asset Data



Ref: **Survey Q4a**
When the Bough Breaks:
Helping municipalities
prioritize infrastructure
investment to build
resilient wastewater and
stormwater systems (2014)

Quality of Information



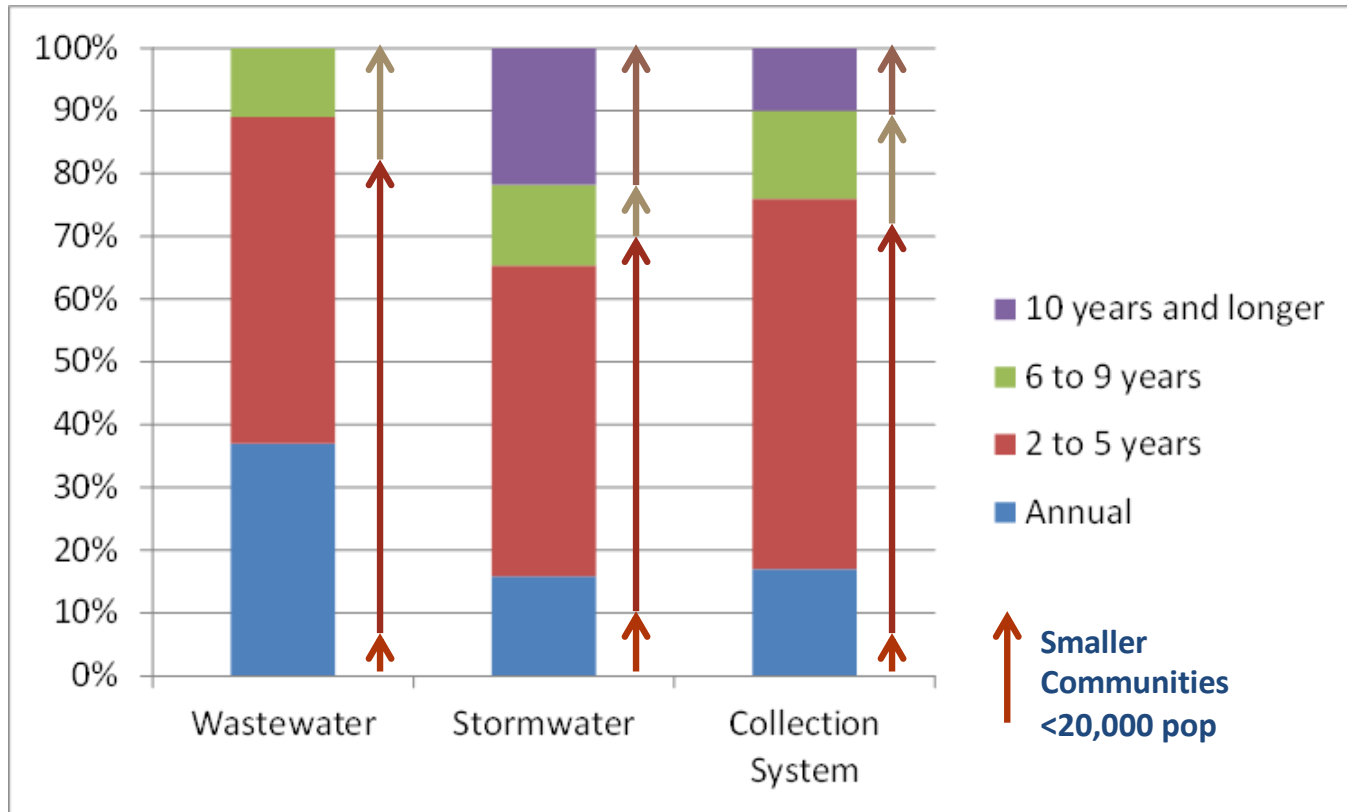
LEGEND

- SW-1:** Storm Sewers
- SW-2:** Convention (ponds)
- SW-3:** Green /LID
- CSO:** Combined Sewer Overflow
- SSO:** Sanitary Sewer Overflow
- TP-1:** WWTP operation
- TP-2:** WWTP discharge
- TP-3:** WWTP by-passes
- O-1:** Receiving water quality
- O-2:** Beach closures

Ref: **Survey Q11**

When the Bough Breaks:
 Helping municipalities
 prioritize infrastructure
 investment to build
 resilient wastewater and
 stormwater systems (2014)

Frequency of Condition Assessment



Ref: **Survey Q23**
When the Bough Breaks:
Helping municipalities
prioritize infrastructure
investment to build
resilient wastewater and
stormwater systems (2014)

Alignment in the Organization



Global Contribution

Asset Management, specifically the ISO55000 standard, contributes to the following Sustainable Development Goals:

- 6 – Clean Water and Sanitation**
- 7 – Affordable and Clean Energy
- 8 – Decent Work and Economic Growth
- 9 – Industry, Innovation and Infrastructure
- 11 – Sustainable Cities and Communities**
- 12 – Responsible Consumption and Production
- 13 – Climate Action

SUSTAINABLE DEVELOPMENT GOALS





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QUESTIONS?

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