

# Asset Management Webinar Series Fundamentals

The Association of Municipalities of Ontario (AMO) entered into an Agreement with FCM to work directly with municipalities to make progress in asset management. AMO engaged Asset Management Ontario (AMONTario) in this initiative.

The initiative is delivered through the Municipal Asset Management Program, which is delivered by the Federation of Canadian Municipalities and funded by the Government of Canada.

Contact [GasTax@amo.on.ca](mailto:GasTax@amo.on.ca) for more information



# Understanding Levels of Service

February 13, 2020

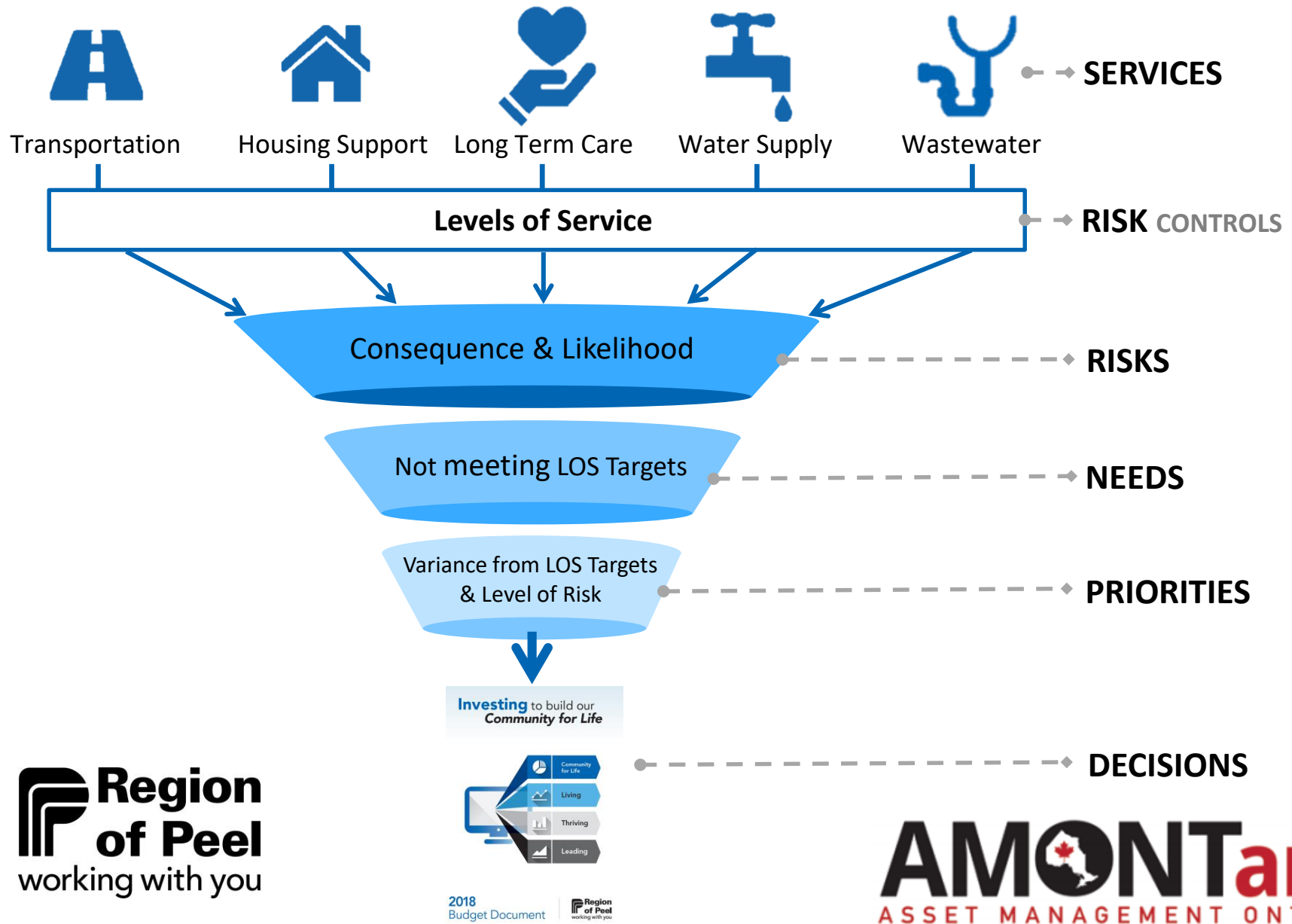
# Goals for Today

- Understand process to create Levels of Service
  - Community Levels of Service
  - Asset (Technical) Levels of Service (ALOS)
  - Where they fit in your hierarchy
  
- How to set and measure ALOS
  - Available data in the asset register to help set and measure ALOS
  - Tools and resources

# Why are Levels of Service Important?

- The basis for asset management planning & decision making
  - Sets targets for the desired state
  - Informs asset improvements to achieve service objectives & sustainability
  - Measure progress, trends & priorities
  - Measures the state of infrastructure
  - Identify gaps between the current and desired state of asset and services.

# PEEL'S ASSET MANAGEMENT STRATEGY



# What Are Levels of Service?

- Composite indicators that relate the asset performance to a municipality's service objectives.
  - *May be described by both technical and non-technical performance criteria.*
  - *May be defined at the service level (Community LOS) or at the asset level (Asset LOS).*
  - *Criteria may vary from asset type to asset type and service area to service area.*
  - *Specific technical and non-technical performance criteria are specified for water, stormwater, wastewater, road, and bridge/culvert assets in O.Reg 588/17.*





# LOS Hierarchy: Strategic Level

**Community Aspirations:**  
Safety, Quality, Efficiency

**Service Objective:**  
Potable, high quality  
& reliable water

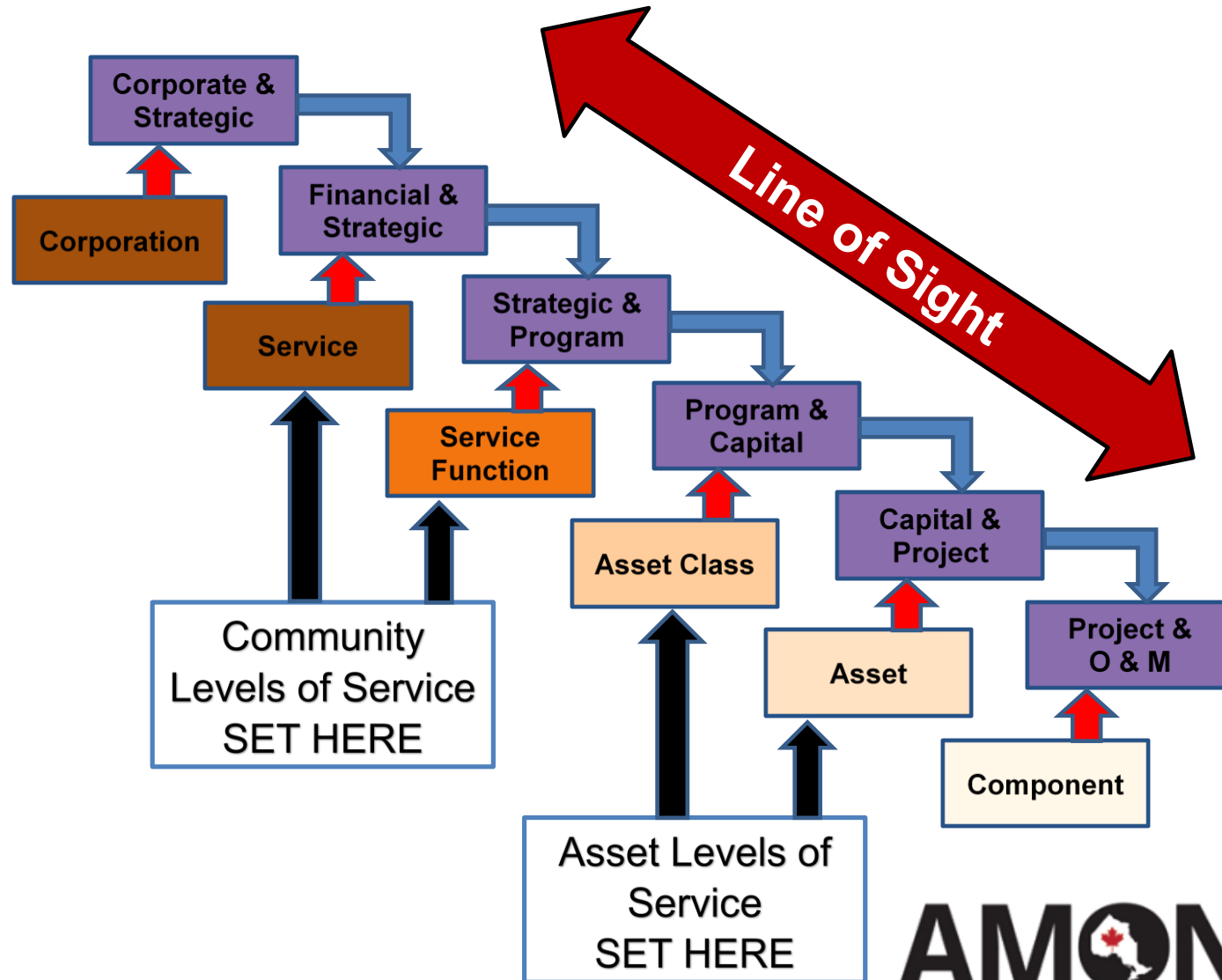
**Community LOS:**  
I receive reliable,  
clean water

# Levels of Service Hierarchy

- **Service Objectives** define the expected outcomes of services to the community.
  - *Strategic Statements*
- **Community (customer) Levels of Service (CLOS)** are descriptions of how the community (customers) expects to experience services.
  - *Can be technical/quantitative and/or non-technical/qualitative.*
  - *Typically service area specific.*
- **Asset Levels of Service (ALOS)** measure the ability of assets to provide services and meet service objectives.
  - *Generally technical and quantitative.*
  - *Typically asset specific.*



# Asset Management Hierarchy: LOS





# LINE OF SIGHT

**Strategic Plan**  
Vision & Mission



**Community  
For Life**

## Mission

Working with You to  
create a healthy safe and  
connected community

## Area of Focus Outcome

Communities are  
integrated, safe and  
complete

**Area of  
Focus**



**Thriving**

**Service**



**Water  
Supply**

## Service Outcome

Safe, reliable and high  
quality drinking water is  
available to Peel  
customers

## Customer Levels of Service

- Potable water at an appropriate pressure and quality.
- Efficient delivery of water services.

**Service  
Category**



**Lake  
Based Water  
Treatment**

**Asset  
Class**



**Water  
Disinfection**

## Asset Levels of Service

- Asset Condition = B (Good)
- Sufficient Capacity to meet demand
- Backup Power and Capacity

**Asset**



**Ozone  
Generator**

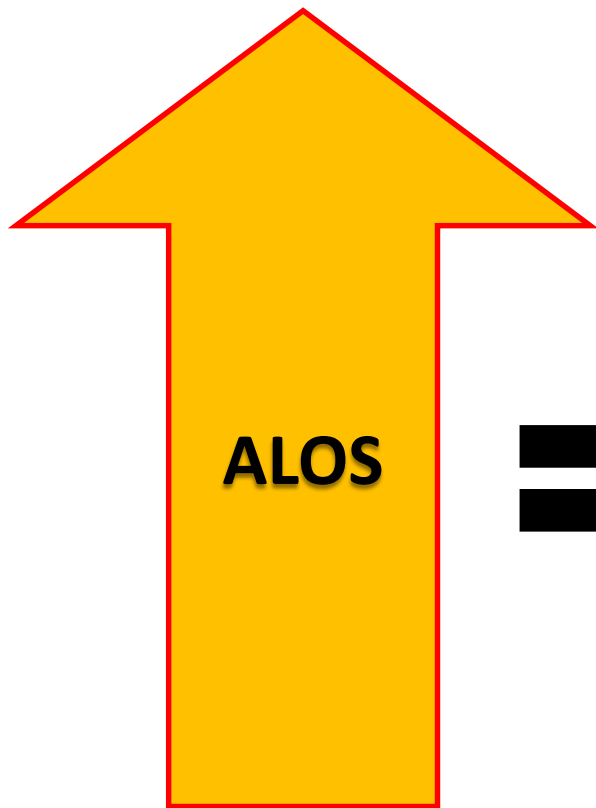
## Asset Information

- Asset Condition
- Lifecycle/Rehabs
- Asset specific Attributes
- Suitability
- Capex & Opex

# Choosing Levels of Service Criteria

- Asset level of service criteria should be measurable attributes that reflect:
  - A. Health & Safety*
  - B. Quality & Quantity*
  - C. Efficiency & Reliability*
  - D. Legislated Requirements*
- Asset level of service targets must be:
  - A. Specific*
  - B. Measurable*
  - C. Relevant*
  - D. Achievable*
  - E. Sustainable*
- Benchmarking studies, Municipal Peers and AMONTario's Municipal Metrics Catalogue are great places to get examples

# Key Points Related to Asset LOS



## Higher ALOS Targets

- *Improves services*
- *Reduces risks*
- *More difficult to sustain*
- *More costly to maintain*

# Key Points Related to Asset LOS



**ALOS**

**=**

## Lower ALOS Targets

- *Reduces services*
- *Increases risks*
- *Easier to sustain*
- *Less costly to maintain*

# Finding the Balance

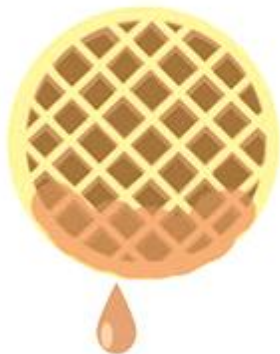


- *Start with reasonable community expectations.*
- *What services are good, what need improvement?*
- *Maintain ALOS targets for what works!*
- *Revise ALOS targets for what doesn't work!*

# Current vs. Desired Level of Service

- Desired level of service describes the performance level that a municipality seeks to achieve from a particular asset, asset class, or service area.
- Current level of service describes the present performance level of a particular asset, asset class, or service area.

**WANT**



**HAVE**





# Current vs. Desired Level of Service

- The gap between current levels of service and desired level of service enables a municipality to identify:
  - A. Asset and/or service deficiencies;*
  - B. Risk exposure; and*
  - C. Asset and/or service needs.*



# The Key To Success

## Optimized-Decision Making



# Service to Asset “Line of Sight”



# The Level of Service Process

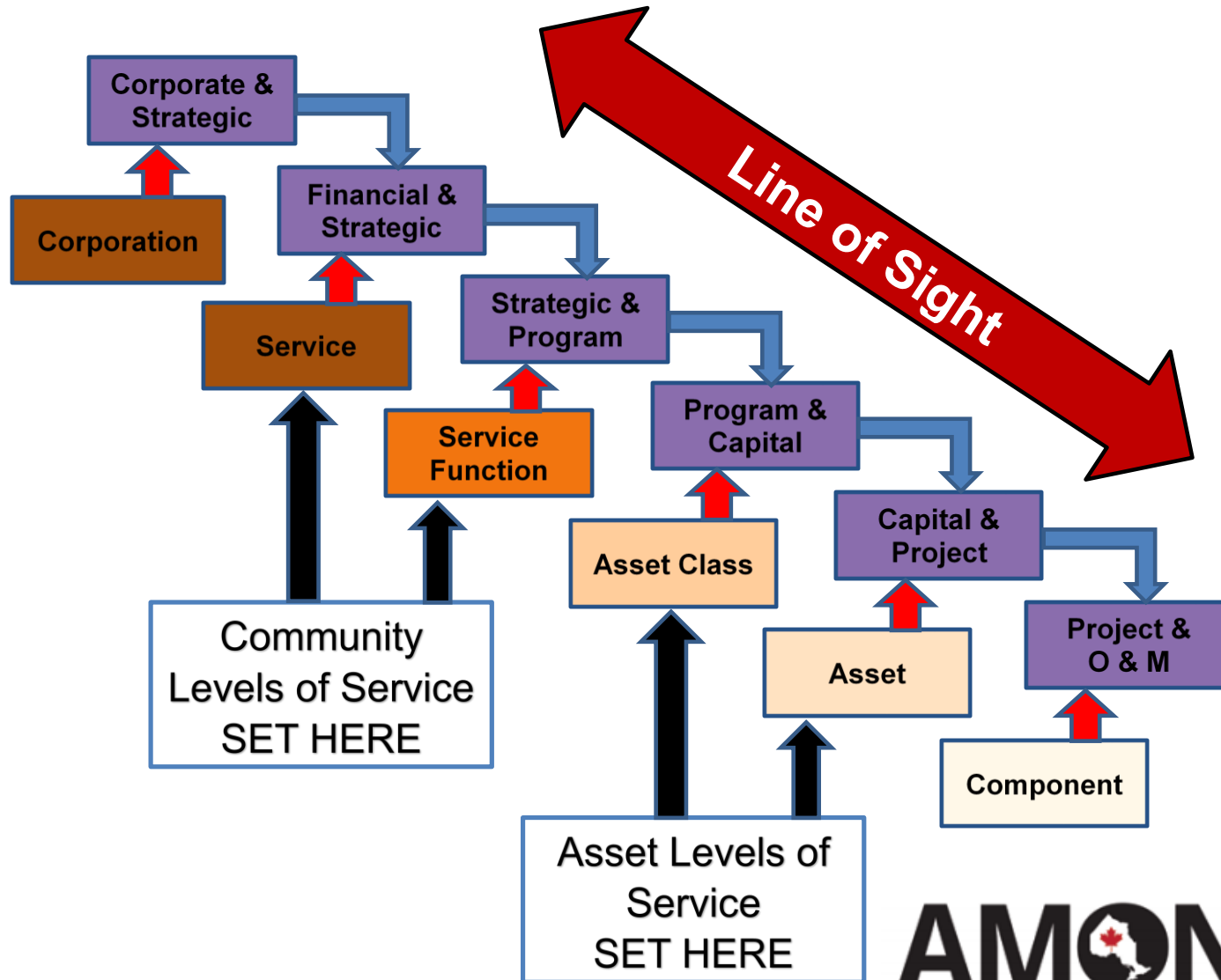


## Step 1: Identify Service Objectives

What are Council's Service Objectives?

- Provide a safe, reliable road network

# “Line of Sight” Recap: LOS



# The Level of Service Process



## Step 2: Define Community Levels of Service (CLOS) Criteria

What would customers experience from the service objectives?

- 
1. Safe, reliable driving conditions
  2. A comfortable drive at posted speeds

# The Level of Service Process



## Step 3A: Identify the Assets

What classes of assets involves in providing the service?

1. HCB Pavement
2. LCB Pavement
3. Gravel Surfaces
4. Bridges & Culverts
5. Street Lights
6. Retaining walls
7. Storm Sewers

**Use the  
Asset  
Hierarchy!**



# The Level of Service Process



## Step 3B: Identify the Condition Rating Metrics

How will the assets be measured?

1. HCB Pavement: PCI
2. LCB Pavement: PCI
3. Gravel Surfaces: General Rating
4. Bridges & Culverts: BCI
5. Street Lights: General Rating
6. Retaining walls: General Rating
7. Storm Sewers: PACP

Use legislated/  
published  
standards,  
if available.

# The Level of Service Process



## Step 4: Identify the Threats

Consider how assets can be affected by possible events...

1. **Pavement & Gravel :Extreme rutting & cracking**
2. **Bridges: Weaken/collapsed deck**
3. **Streetlighting: poor visibility**
4. **Retaining Walls: collapsed embankment/lose road section**
5. **Storm Sewers: Pipe Collapse**



**Provides context for setting ALOS!**

# The Level of Service Process



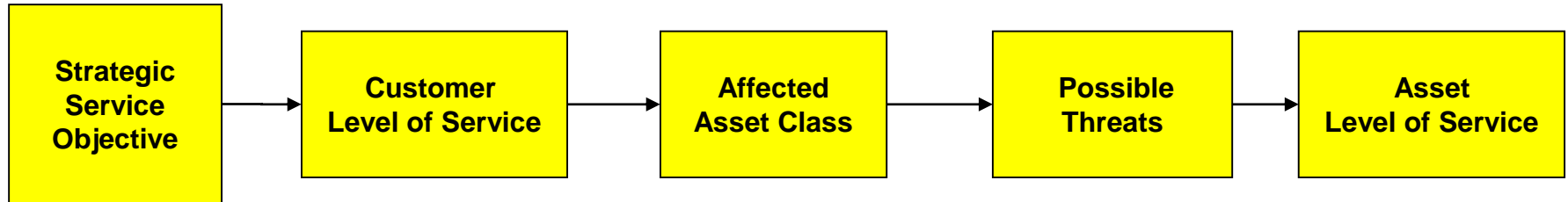
## Step 5: Identify ALOS Targets

Consider the minimum condition at which assets can continue to provide services at a tolerable risk level AND applicable legislated requirements, minimum standards, codes, etc.

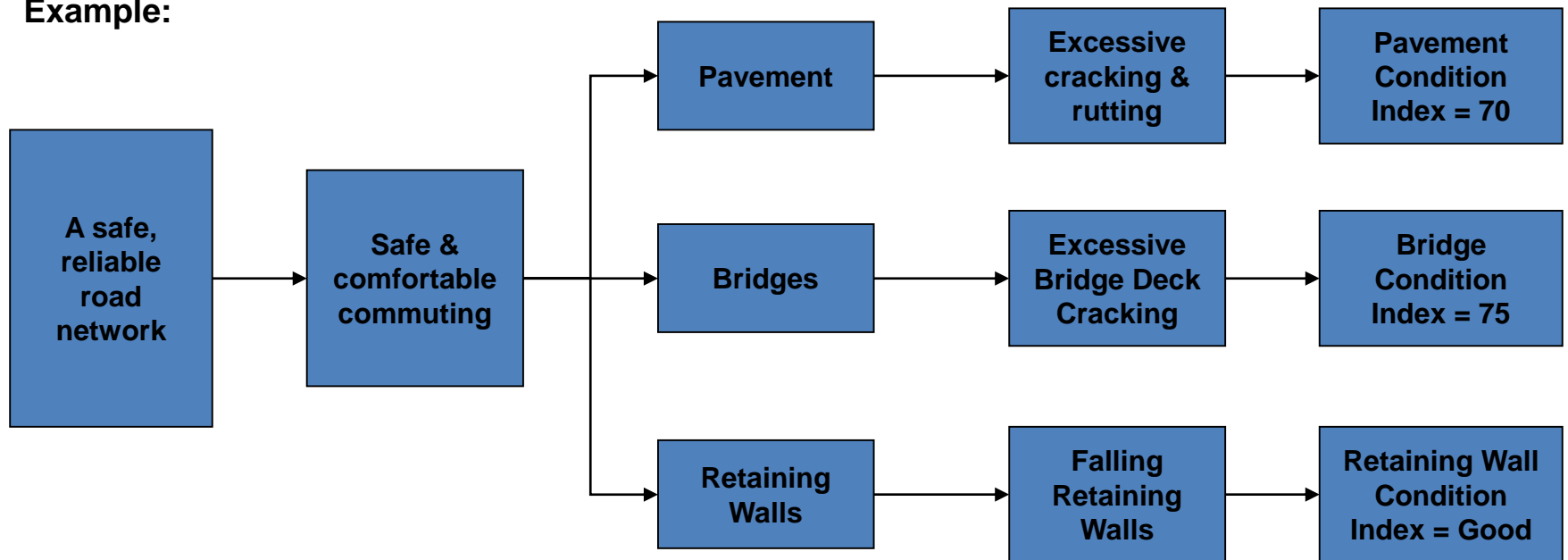
1. **HCB Pavement: PCI = 70**
2. **LCB Pavement: PCI = 70**
3. **Gravel Surfaces: Fair**
4. **Bridges & Culverts: BCI = 75**
5. **Street Lights: Good**
6. **Retaining walls: Good**
7. **Storm Sewers: PACP = 3**

**Benchmarking studies on municipal service standards are useful!**

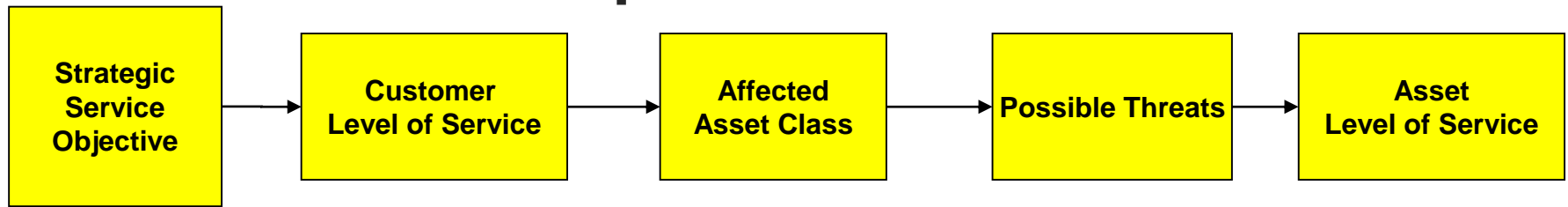
# Example: Roads ALOS



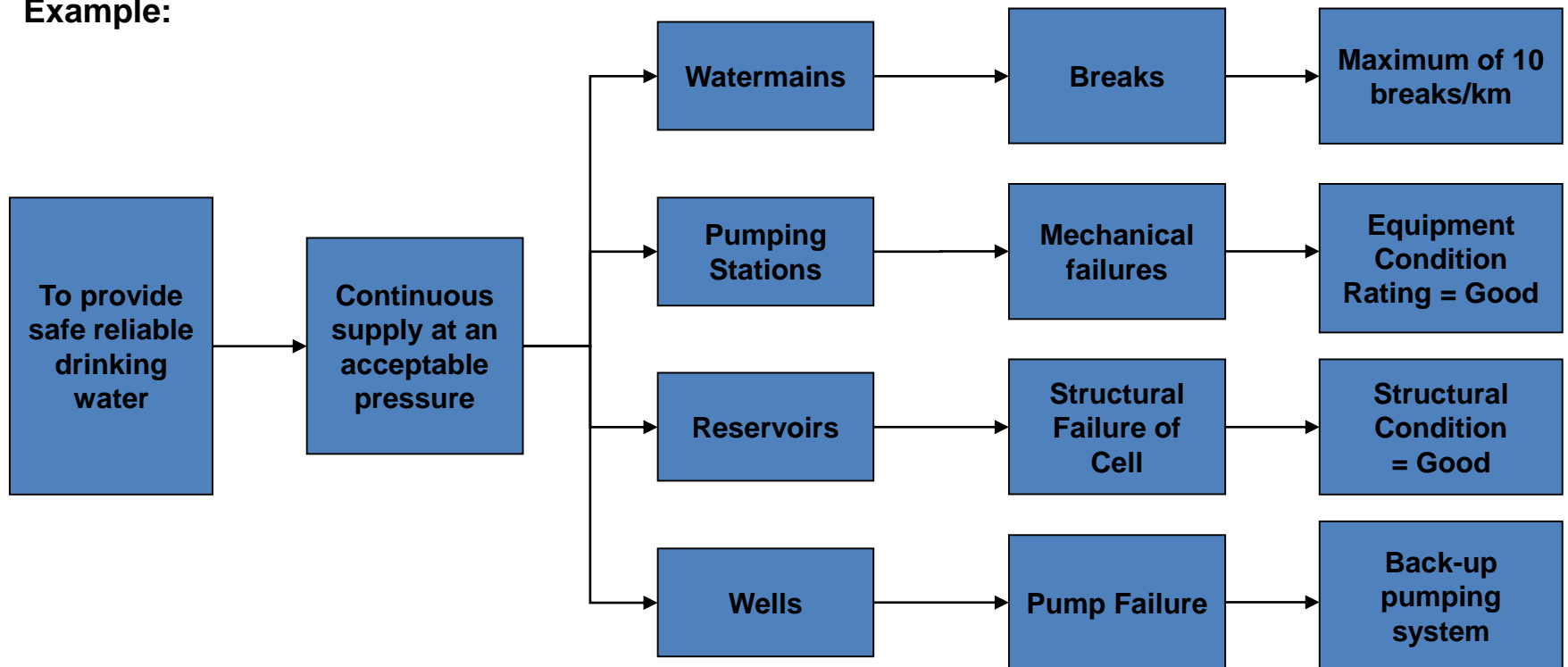
## Example:



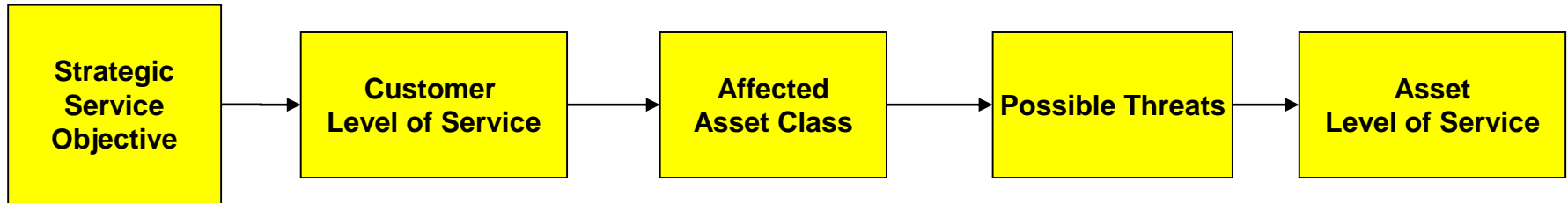
# Example: Water ALOS



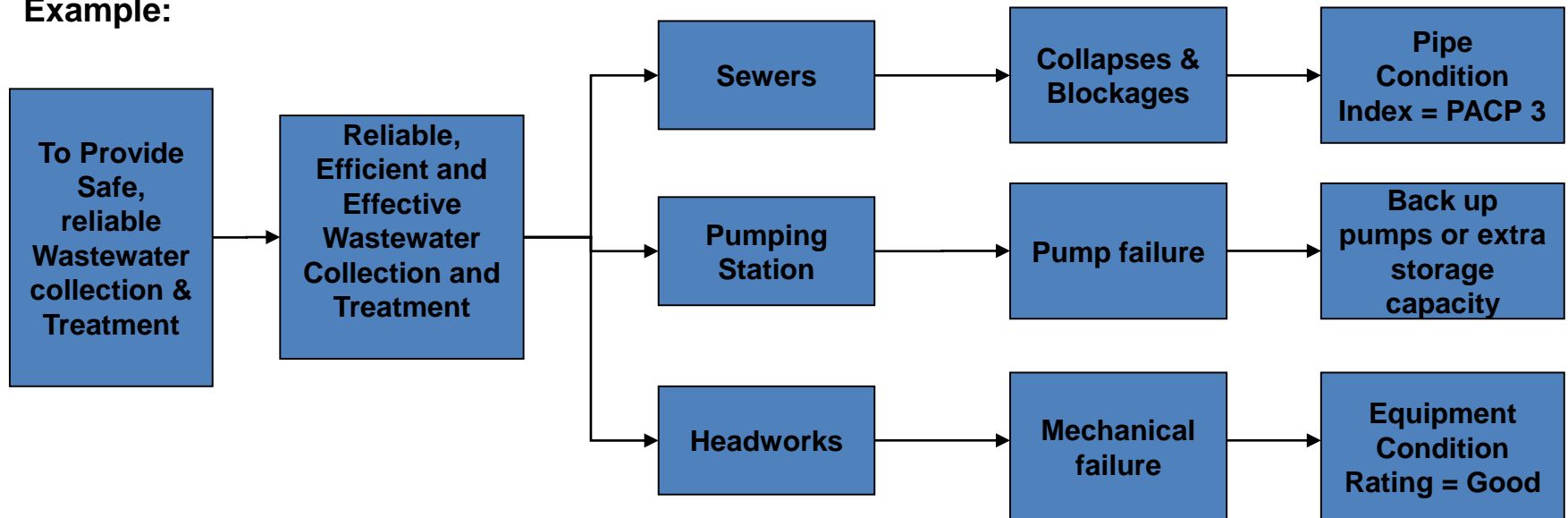
## Example:



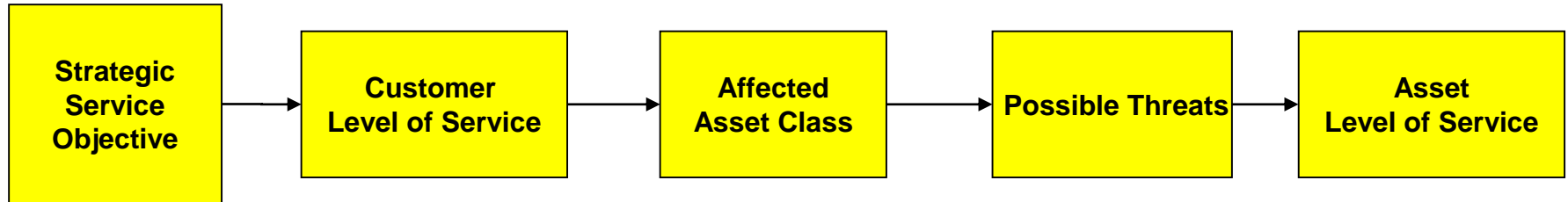
# Example: Wastewater ALOS



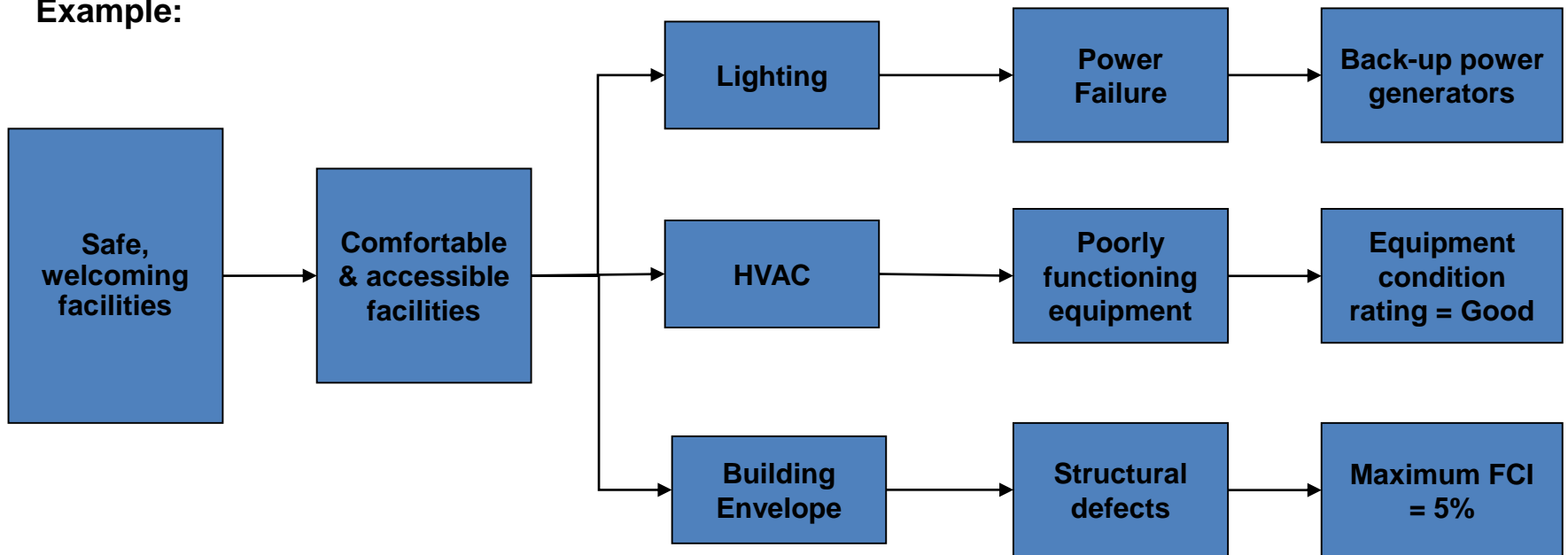
## Example:



# Example: Building ALOS



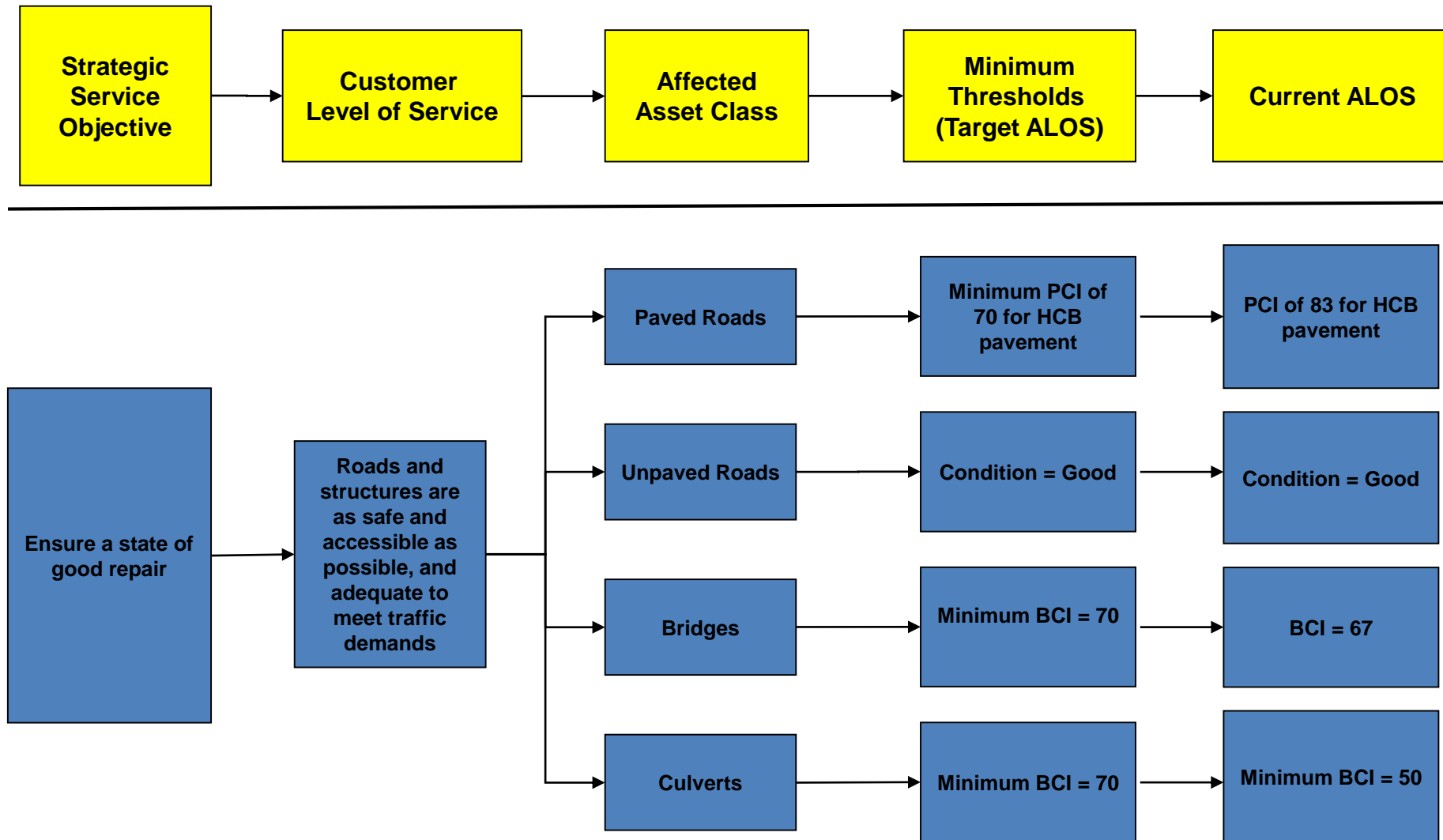
## Example:





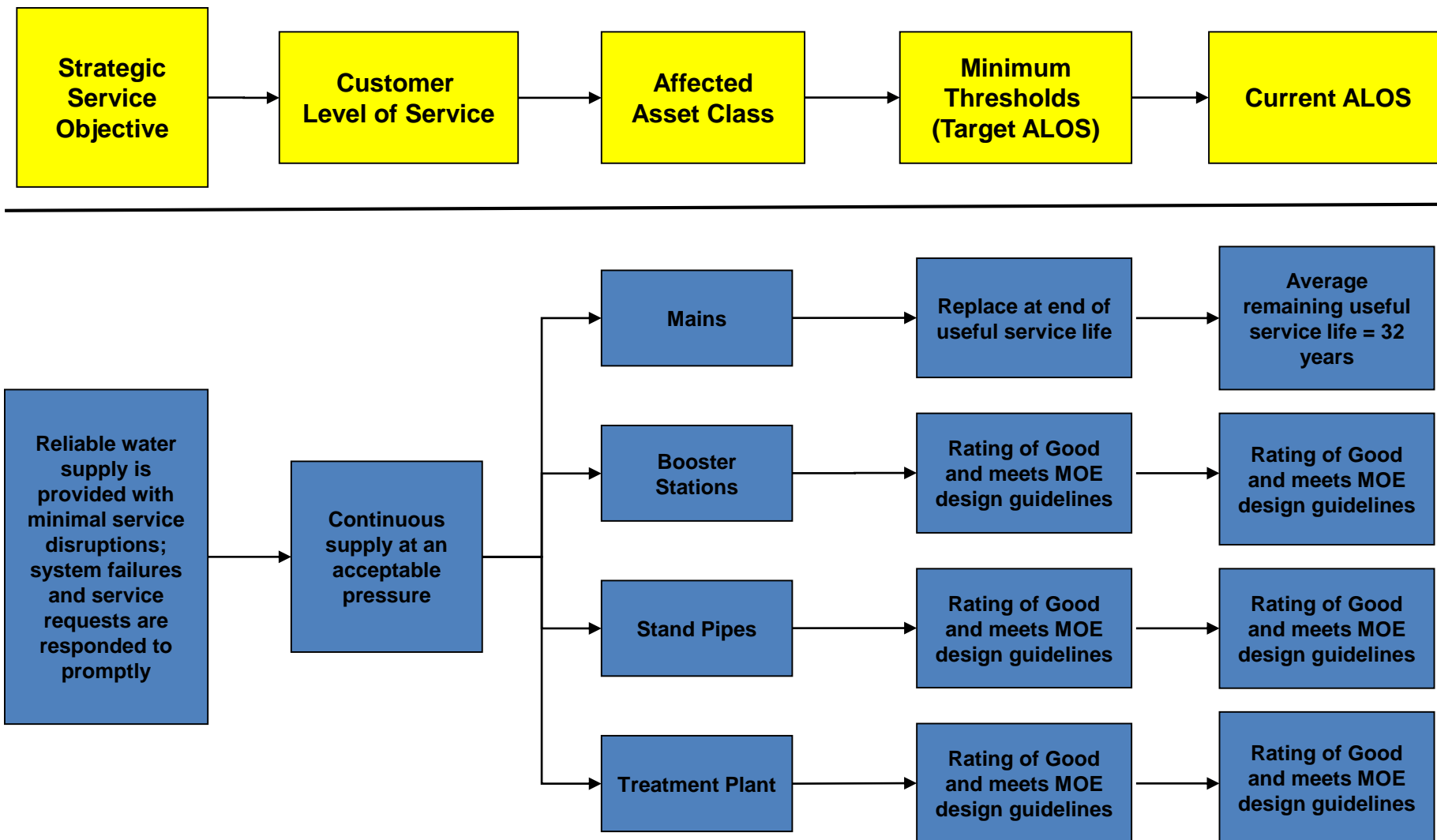
# Example from AM Technical Assistance Project

## Draft Transportation Levels of Service – Town of Bracebridge



# Example from AM Technical Assistance Project

## Draft Water Levels of Service – City of Kenora



# From Customer LOS to Budget

## Customer Levels of Service

Potable water at an appropriate pressure and quality.

Efficient delivery of water services.

## Asset Levels of Service

Maintain Equipment at a Condition Rating = B (Good)

Backup capacity for all critical equipment

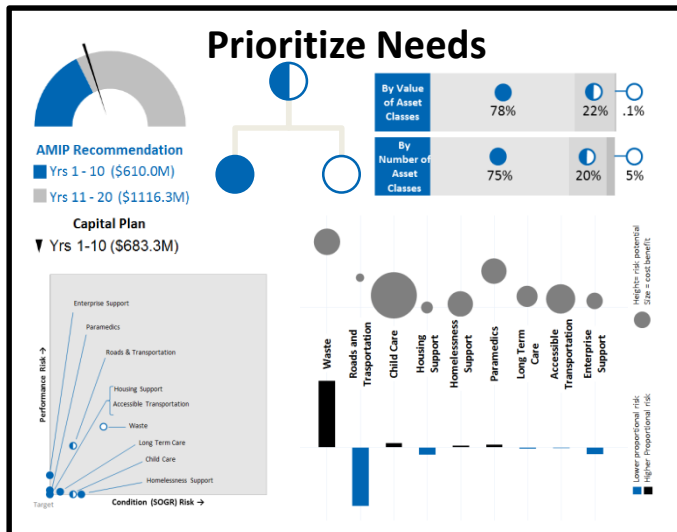
Provide Standby Power

Redundant power supply

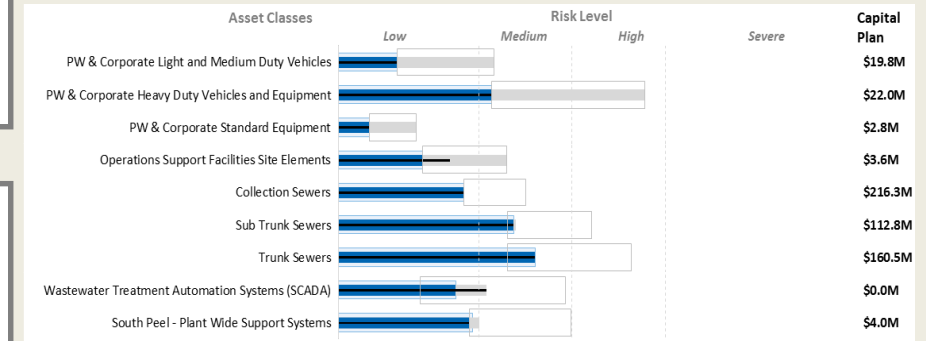
Capacity and technology to produce water of suitable quality

Automated monitoring systems in place

## Prioritize Needs



## Measure Risk and Identify Needs



Break Asset Management down to the Decisions Council has to make

# Useful Tips for Developing LOS

- Keep the LOS simple
  - Focus on asset objectives
- Minimize the number of LOS
  - Enough to reasonably mitigate risks & measure adequacy for service delivery
    - *“Why do we need this LOS?”*
    - *“What will it tell us about the asset/service?”*
- Data are or will be available to measure the LOS
- Avoid using specific design criteria
  - Too detailed, prescriptive & numerous
  - design criteria are an input to achieving the overall ALOS
- ALOS should be applicable to all assets for each asset class

# Free Resources on Establishing Levels of Service

- [Asset Hierarchy and Levels of Service Worksheet](#)
- [Levels of Service Template](#)
- [Municipal Metrics Catalogue](#)

# Questions?

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