

Asset Management - Leveraging Risk



FEBRUARY 8, 2023



Introduction



Disclaimer

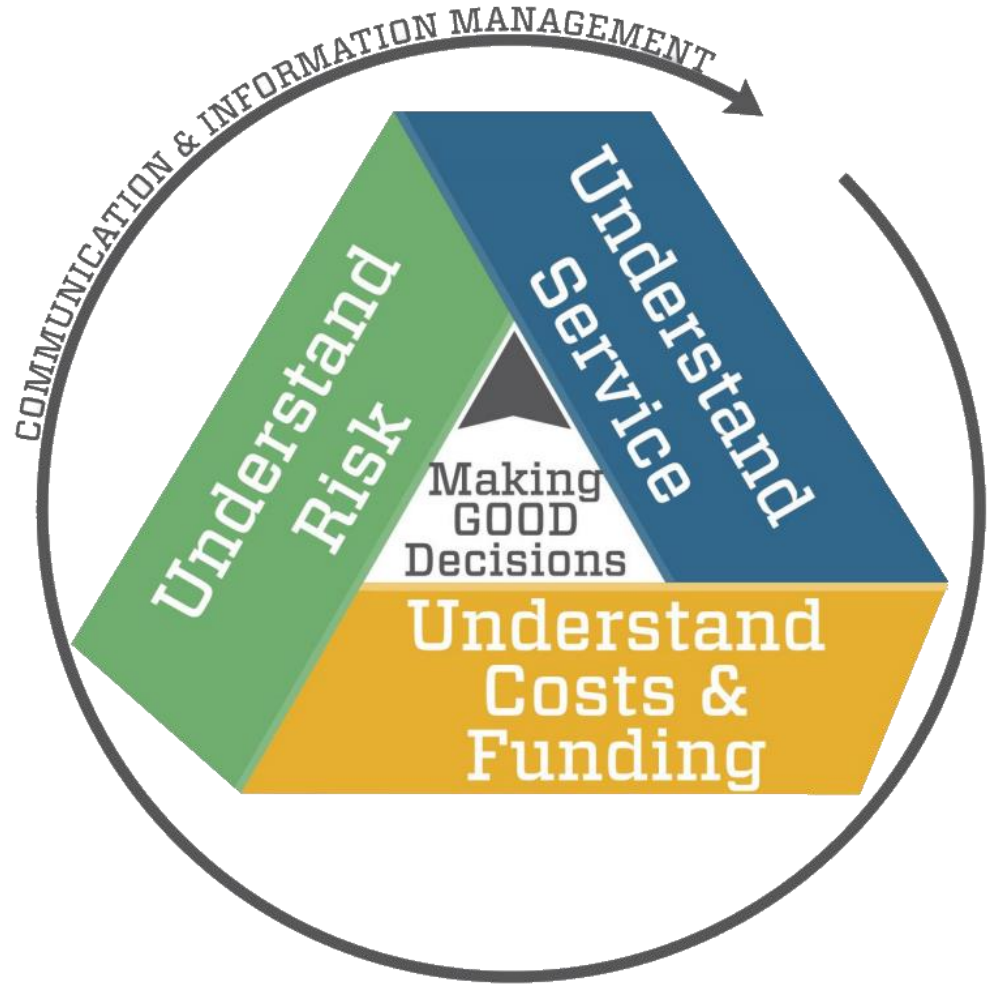


Objectives:

- Awareness
- Introduction to Concepts
- Inspire Conversation





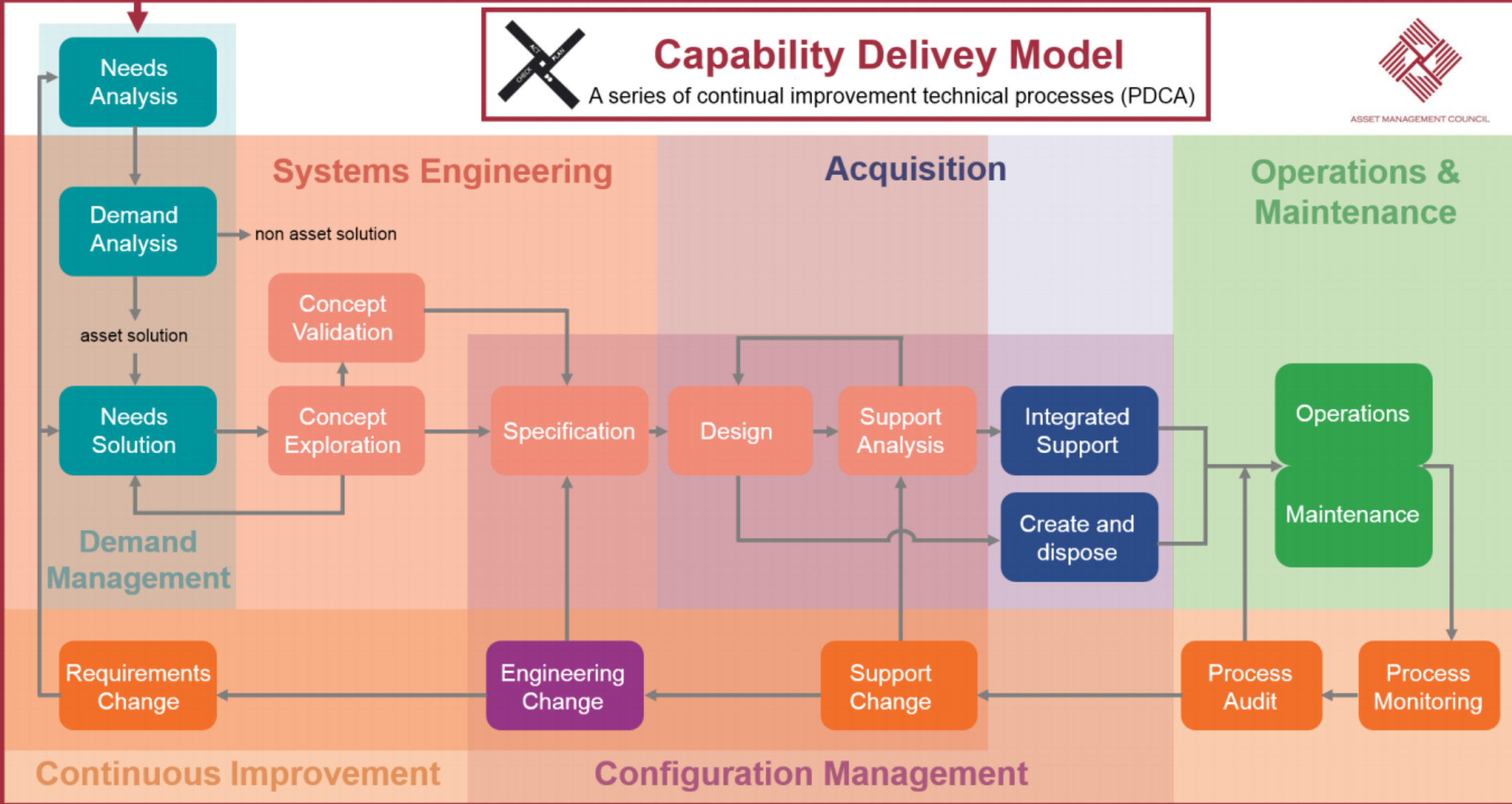


Stakeholders



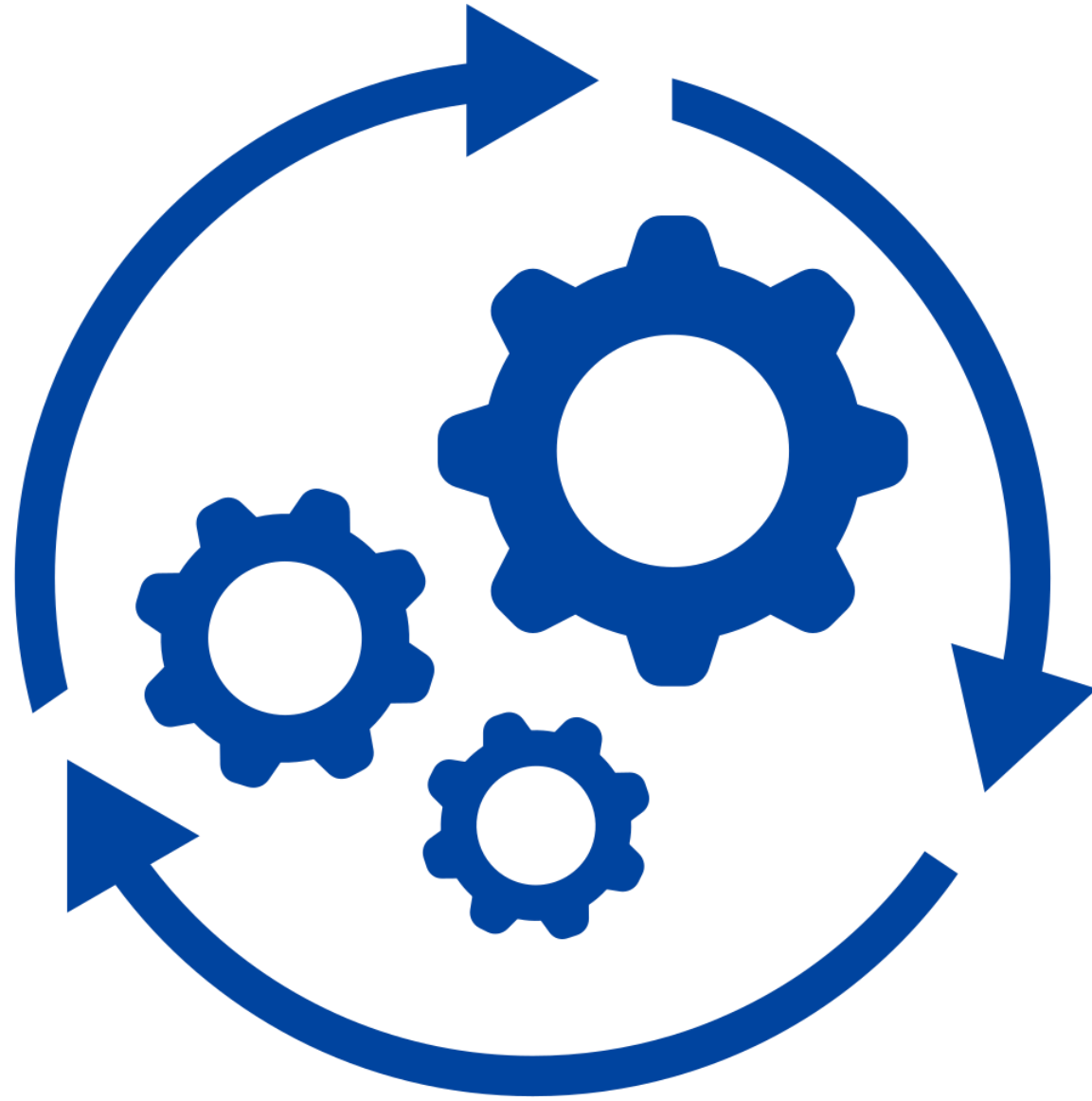
Capability Delivery Model

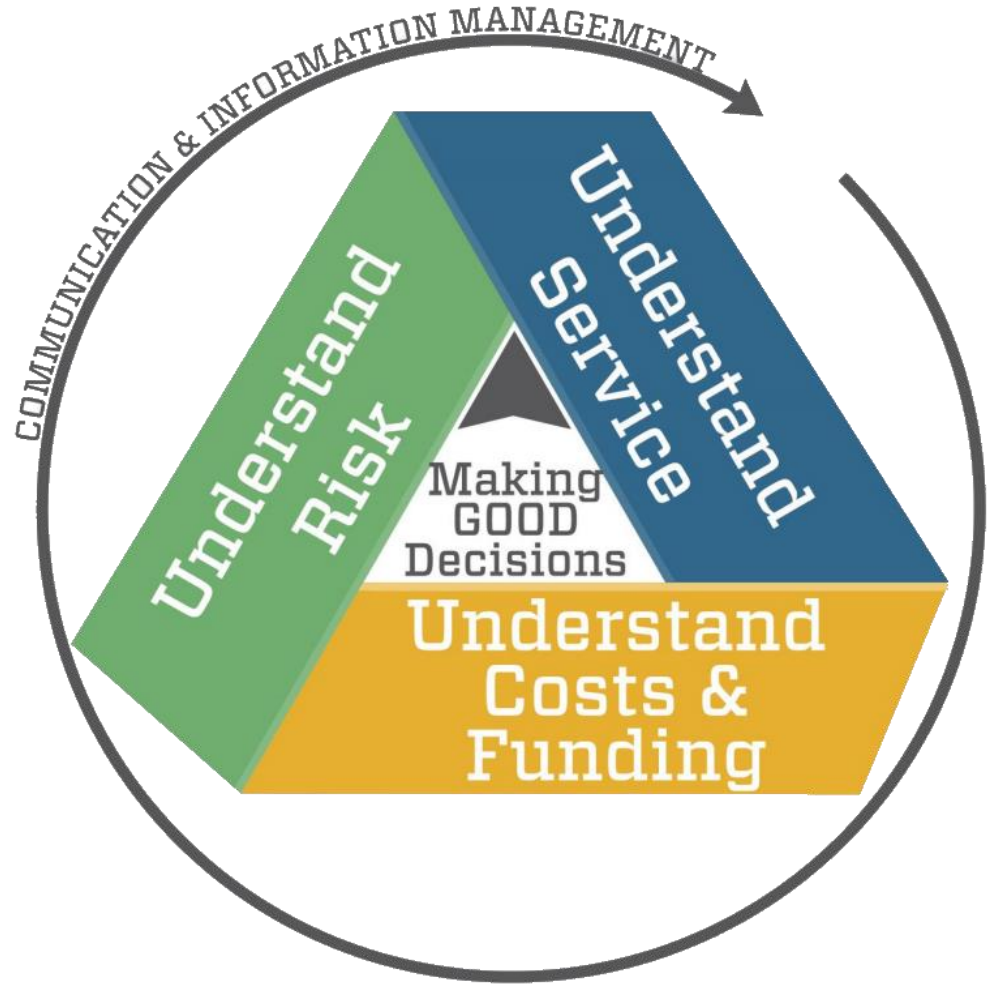
A series of continual improvement technical processes (PDCA)



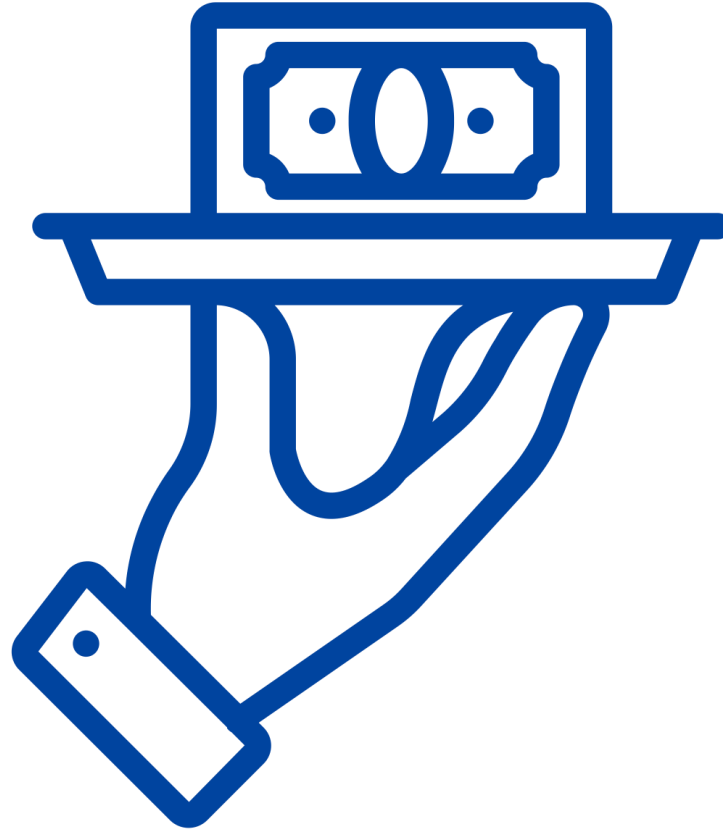








Levels of Service



ISO 55000

Organizational Objectives



Asset Management Objectives



Level of Service Standard

Corporate LOS

The overarching corporate goals, values, mission statements
e.g. safest Town in Canada

Service Outcome Statements

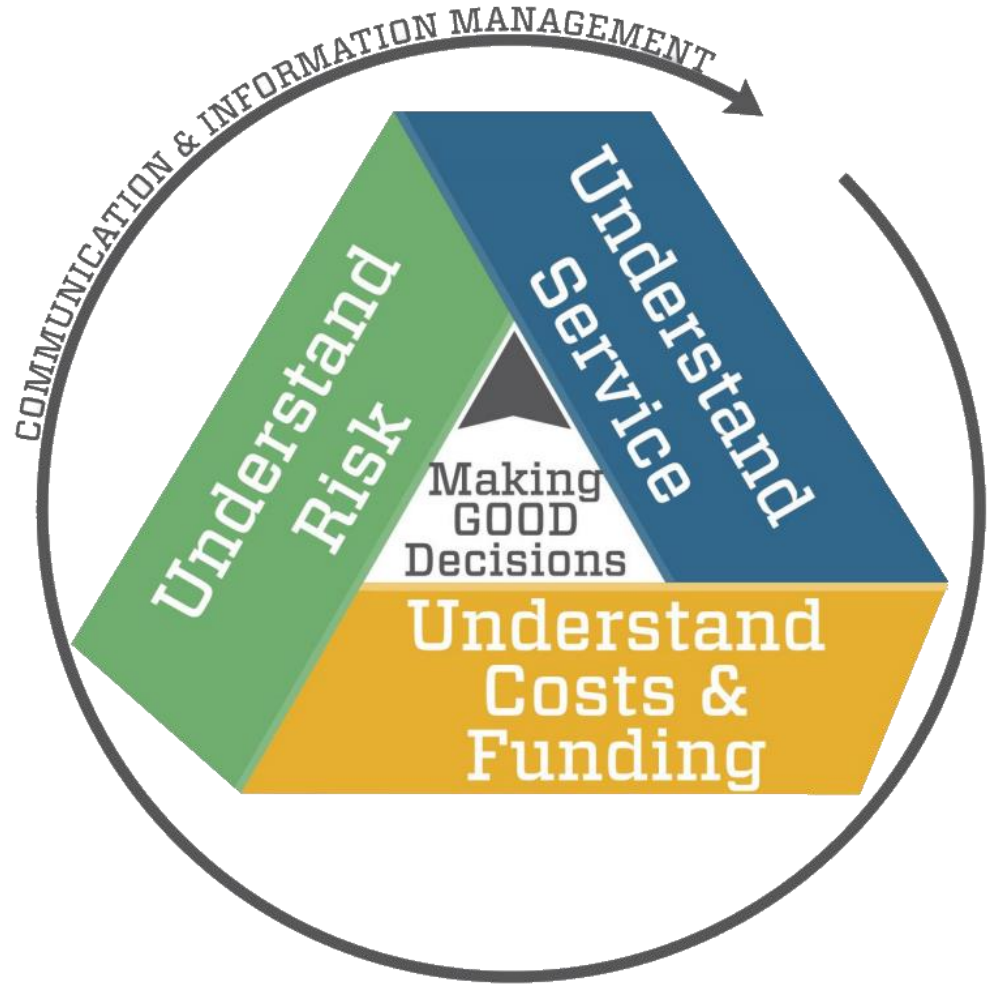
High level statements of AM Objectives
e.g. Improve response time from X to Y mins

Customer LOS

The LOS that the Asset Manager / Corporation provides to the Customer
e.g. % Fire response time of Y mins

Technical LOS

The LOS that the asset is capable of providing to the Asset Manager / Corporation
e.g. Fire Truck up-time/availability

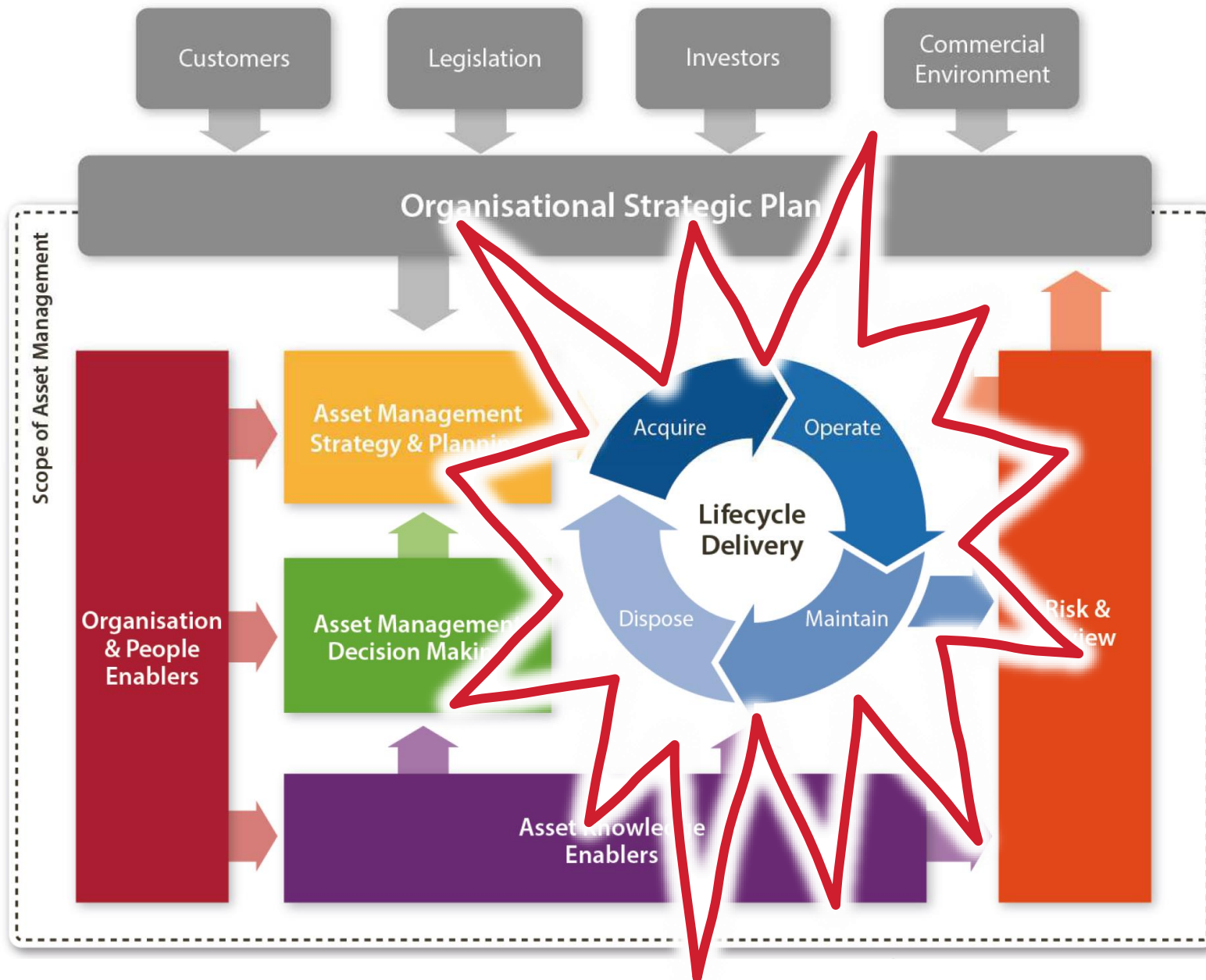


ONE DOES NOT SIMPLY

UNDERSTAND COSTS AND FUNDING





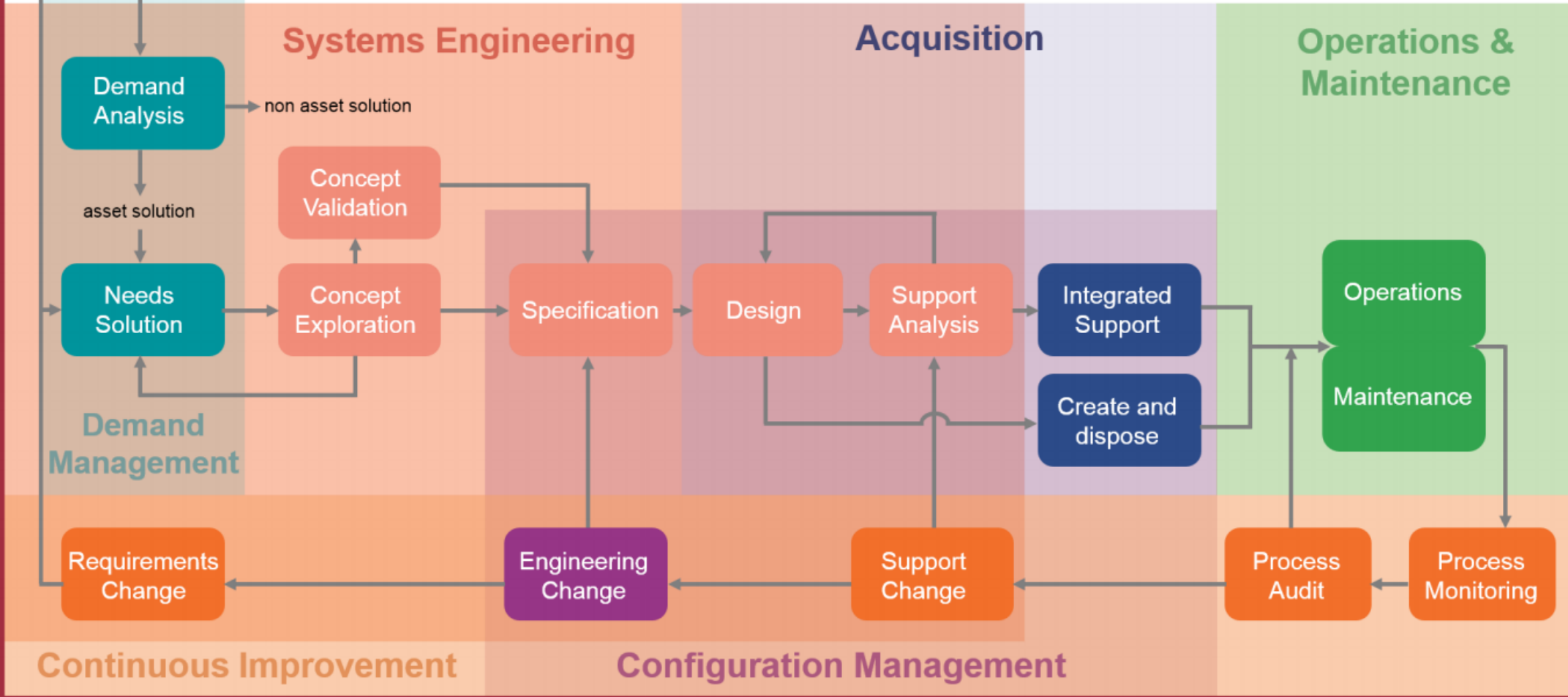


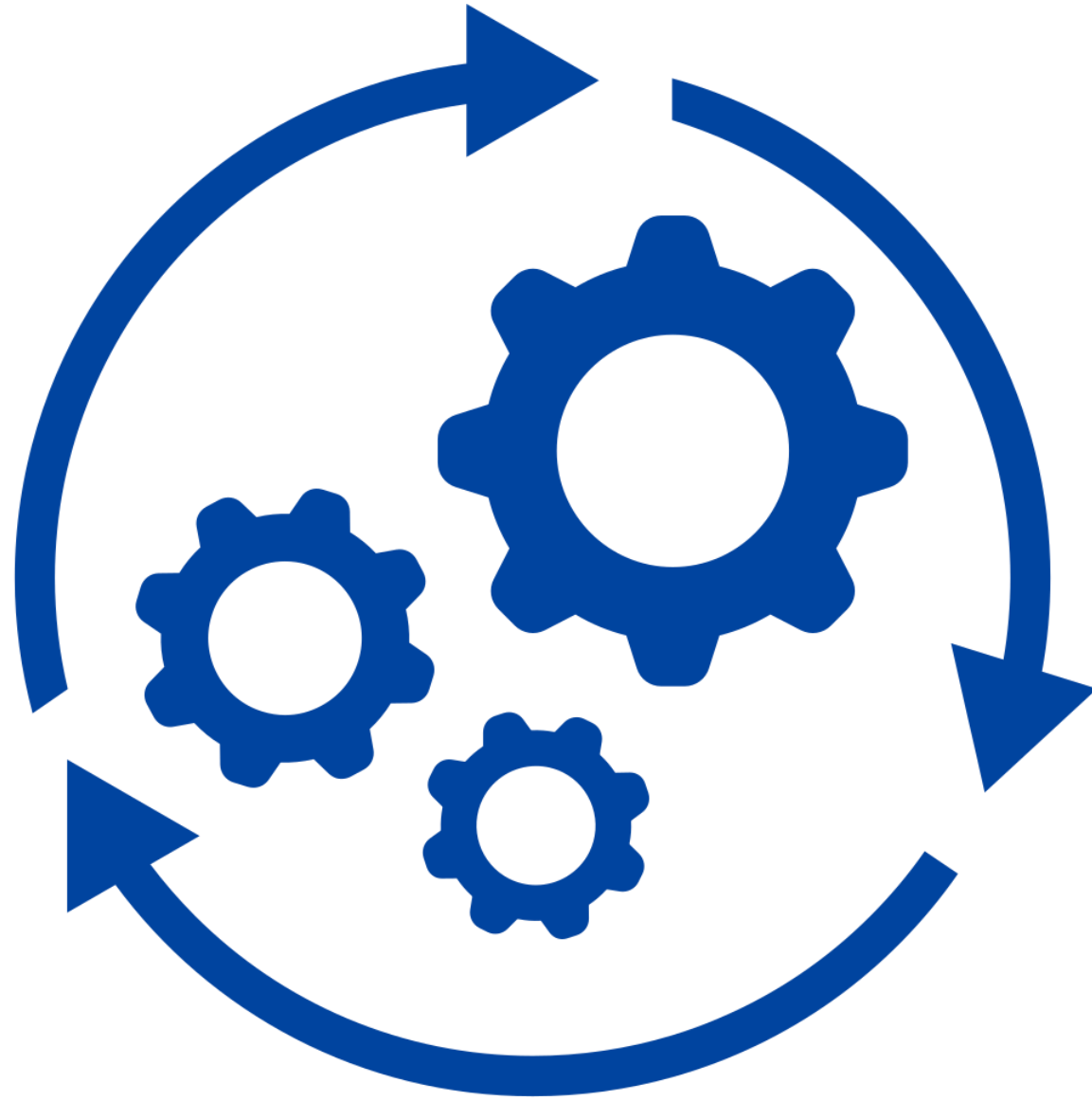
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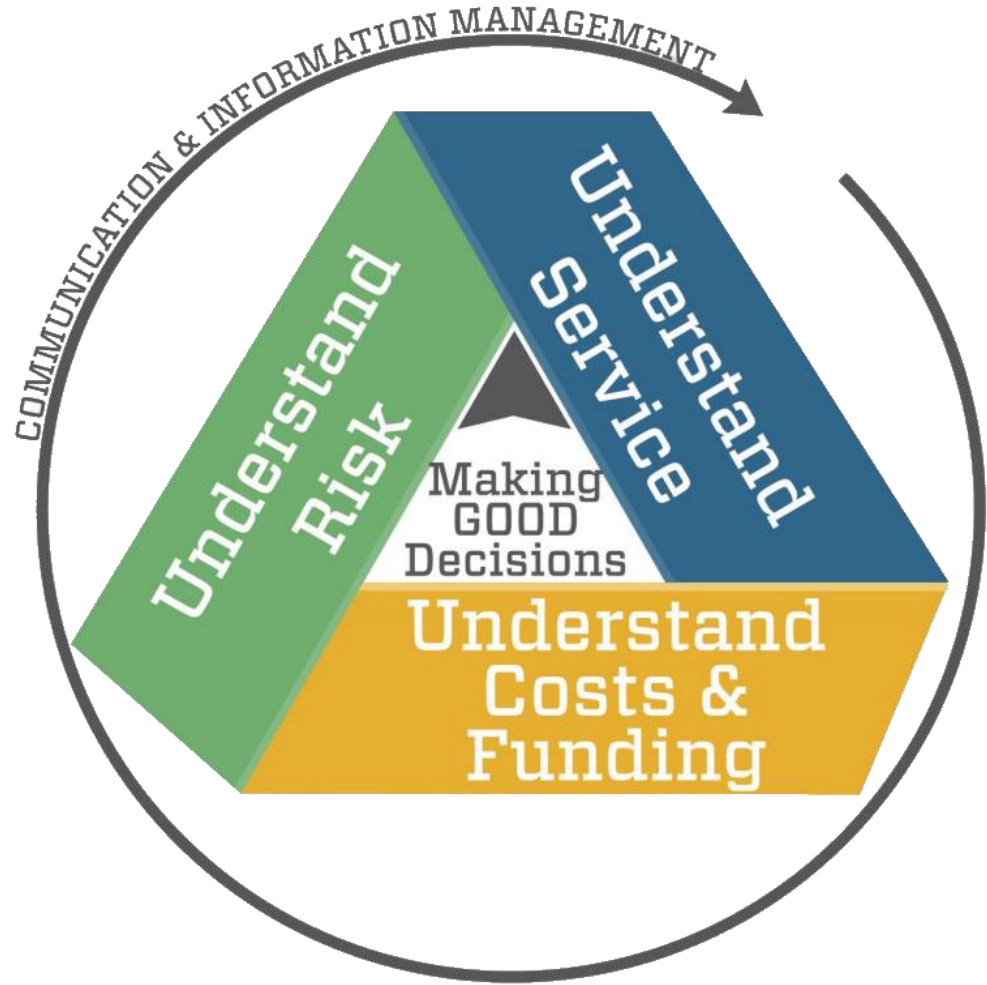


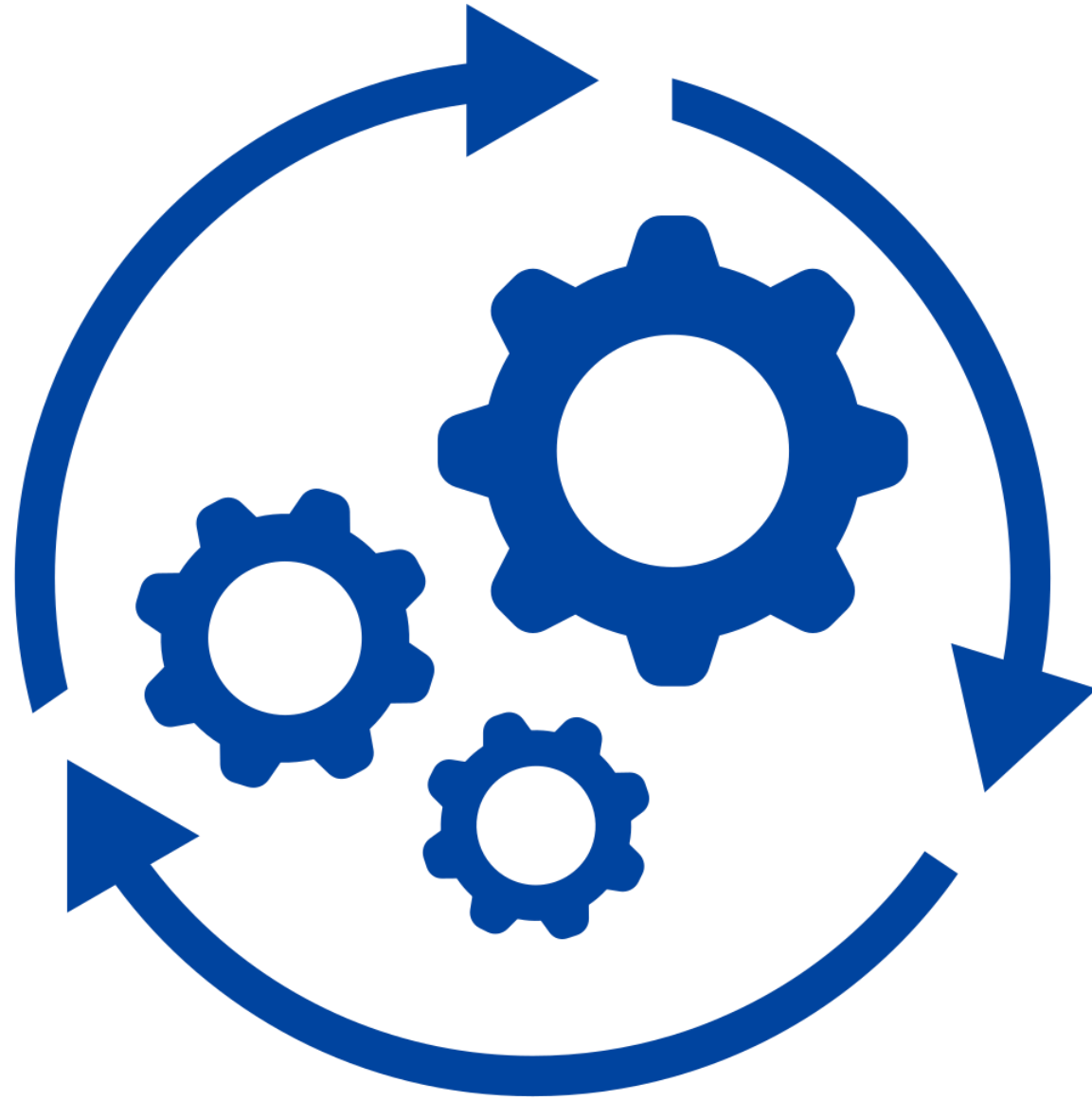
Capability Delivery Model

A series of continual improvement technical processes (PDCA)









Risk



Probability

Risk Assessment Matrix				
Severity				
	Catastrophic - 4	Critical - 3	Marginal - 2	Negligible - 1
Frequent - 4	High (16)	High (12)	Serious (8)	Medium (4)
Probable - 3	High (12)	Serious (9)	Serious (6)	Medium (3)
Remote - 2	Serious (8)	Serious (6)	Medium (4)	Low (2)
Improbable - 1	Medium (4)	Medium (3)	Low (2)	Low (1)

What is risk?

The effect of uncertainty on the ability of an organization to meet its objectives.

What is risk?

Risk = Likelihood x Consequence

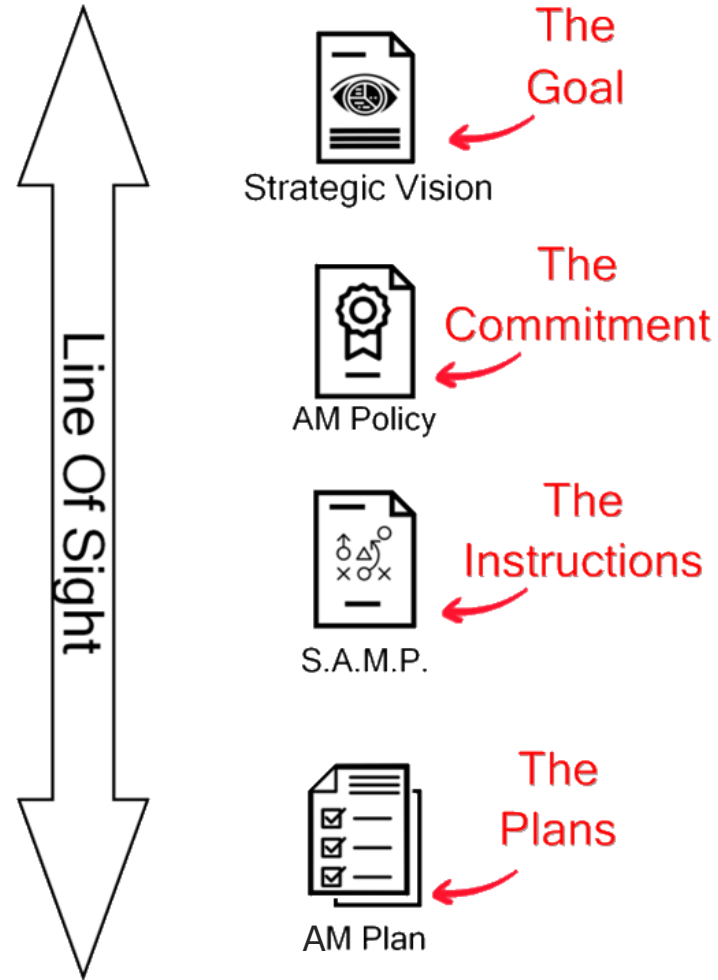


What is risk?

Risk = Likelihood x Consequence

**Why risk and
asset management?**

Asset Management System:



Administration execute on their commitment and strategy by producing an asset management plan

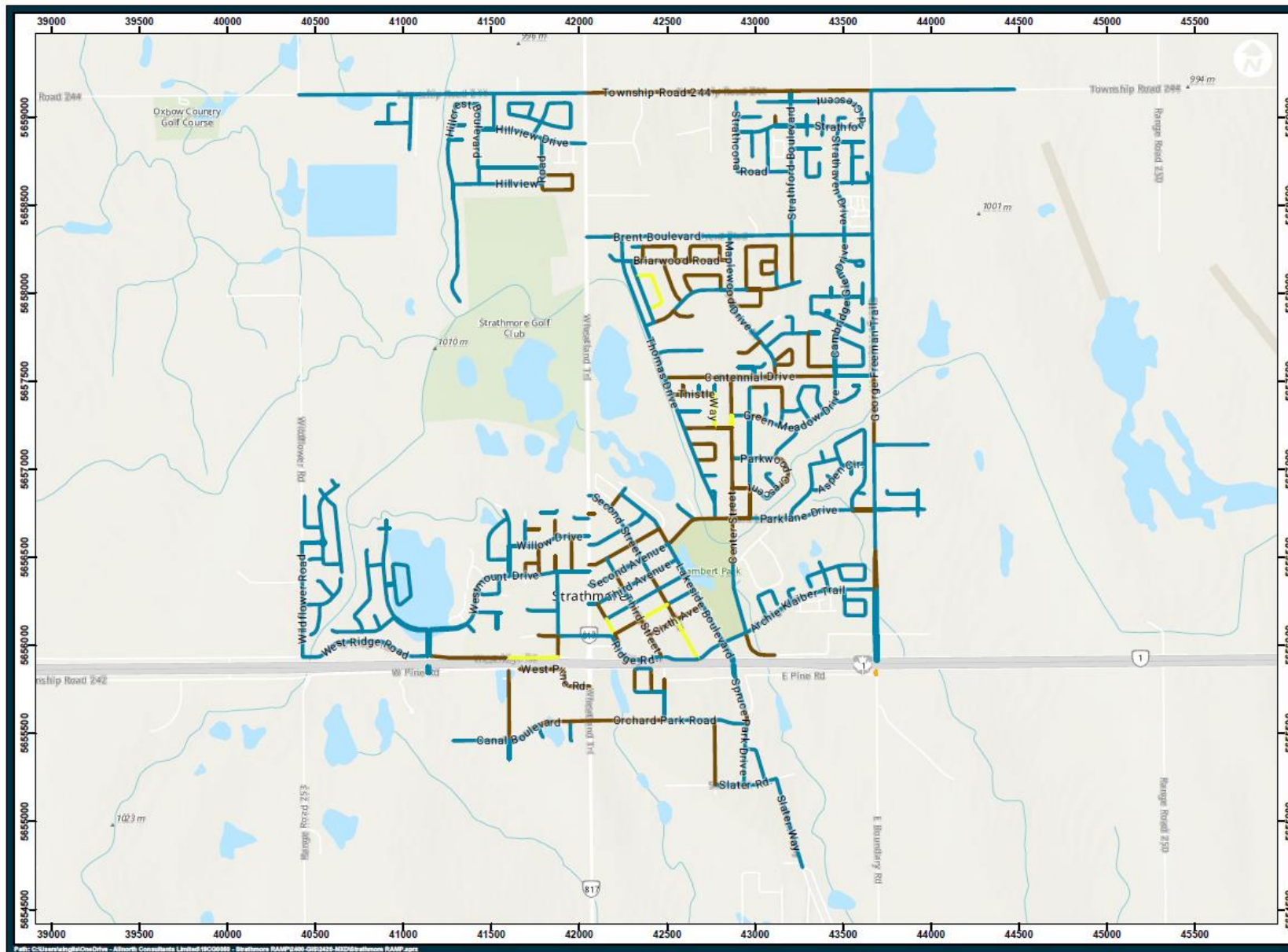


AM Plan



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- Asset Criticality and Risk
- Asset Specific Strategies
- Financing Strategies



Road Asset Management Plan
Figure 3-2
2019 Asphalt Conditions

- Asphalt Roads 2019**
Surface Distress Index (SDI)
- 8 < SDI ≤ 10
 - 6 < SDI ≤ 8
 - 4 < SDI ≤ 6
 - 2 < SDI ≤ 4
 - 0 < SDI ≤ 2

Date: 4/29/2020
 Projection: NAD 1983 3TM 114
 Scale: 1:20,000
 Author: anglis
 Last Modified By: anglis
 Checked By:
 Revision #:



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ISO 55000



Organizational Objectives



Asset Management Objectives

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Service Outcome Statements

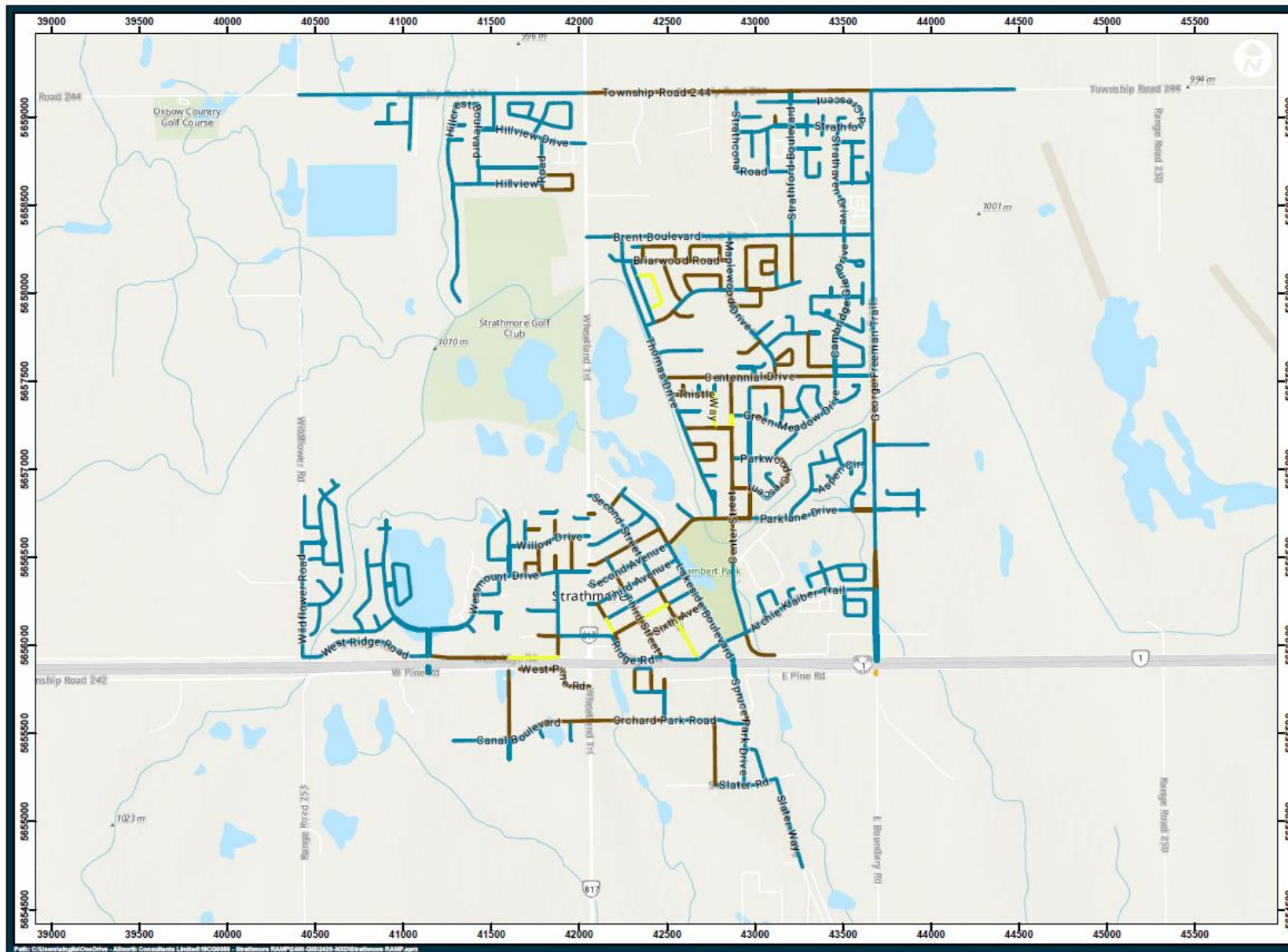
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Fortune Teller



Fortune Teller



\$39.99

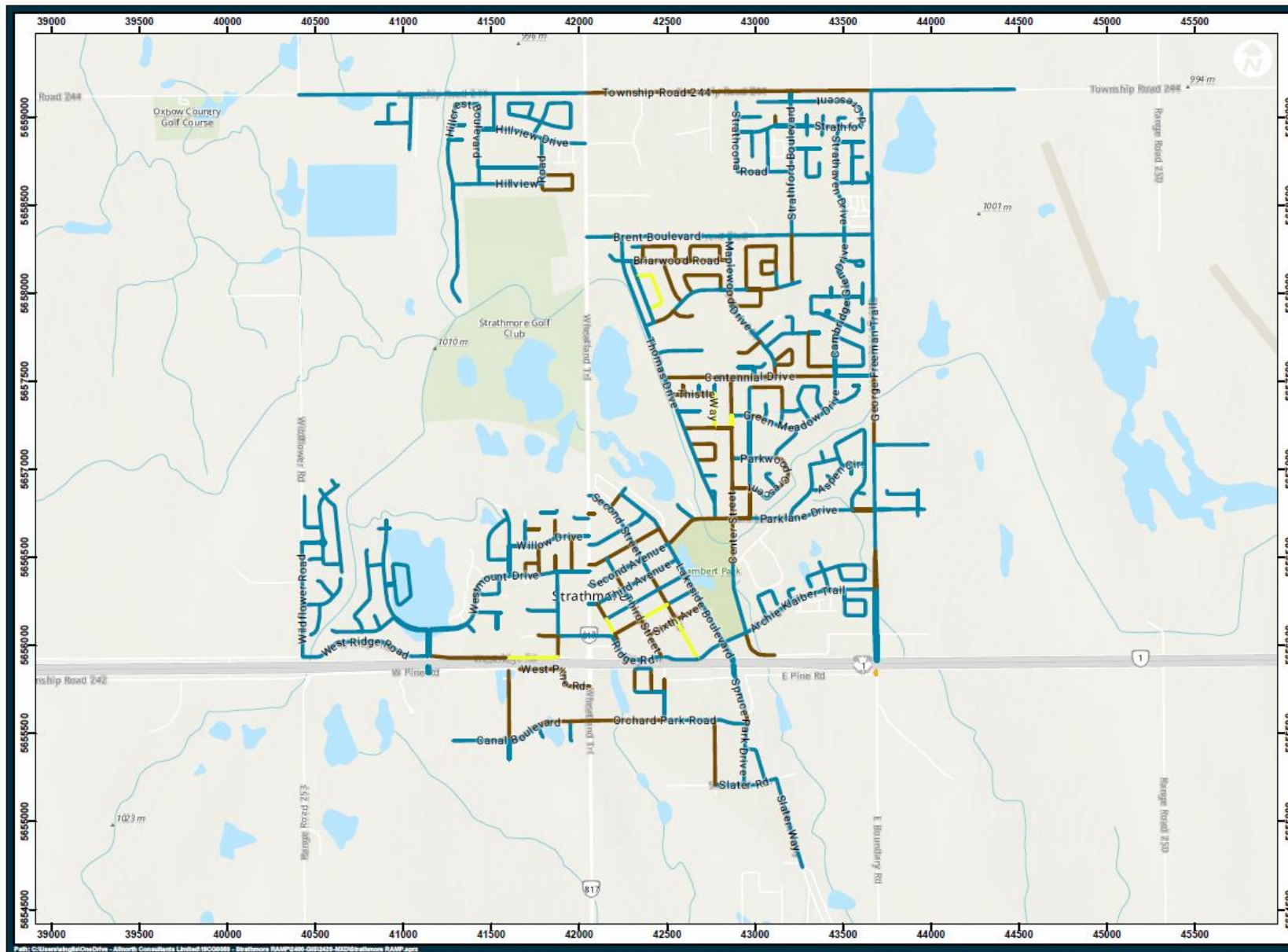
Out Of Stock





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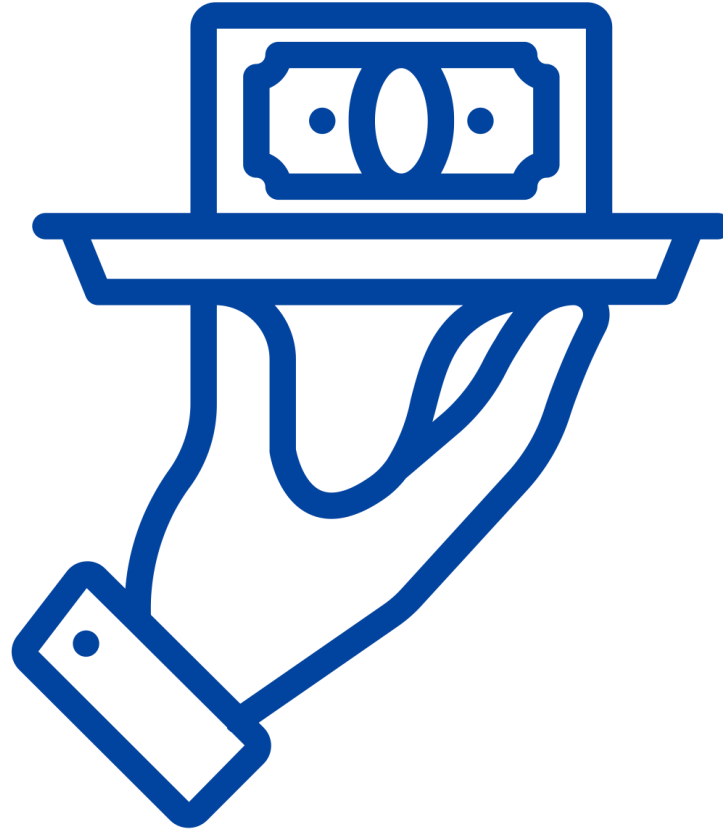
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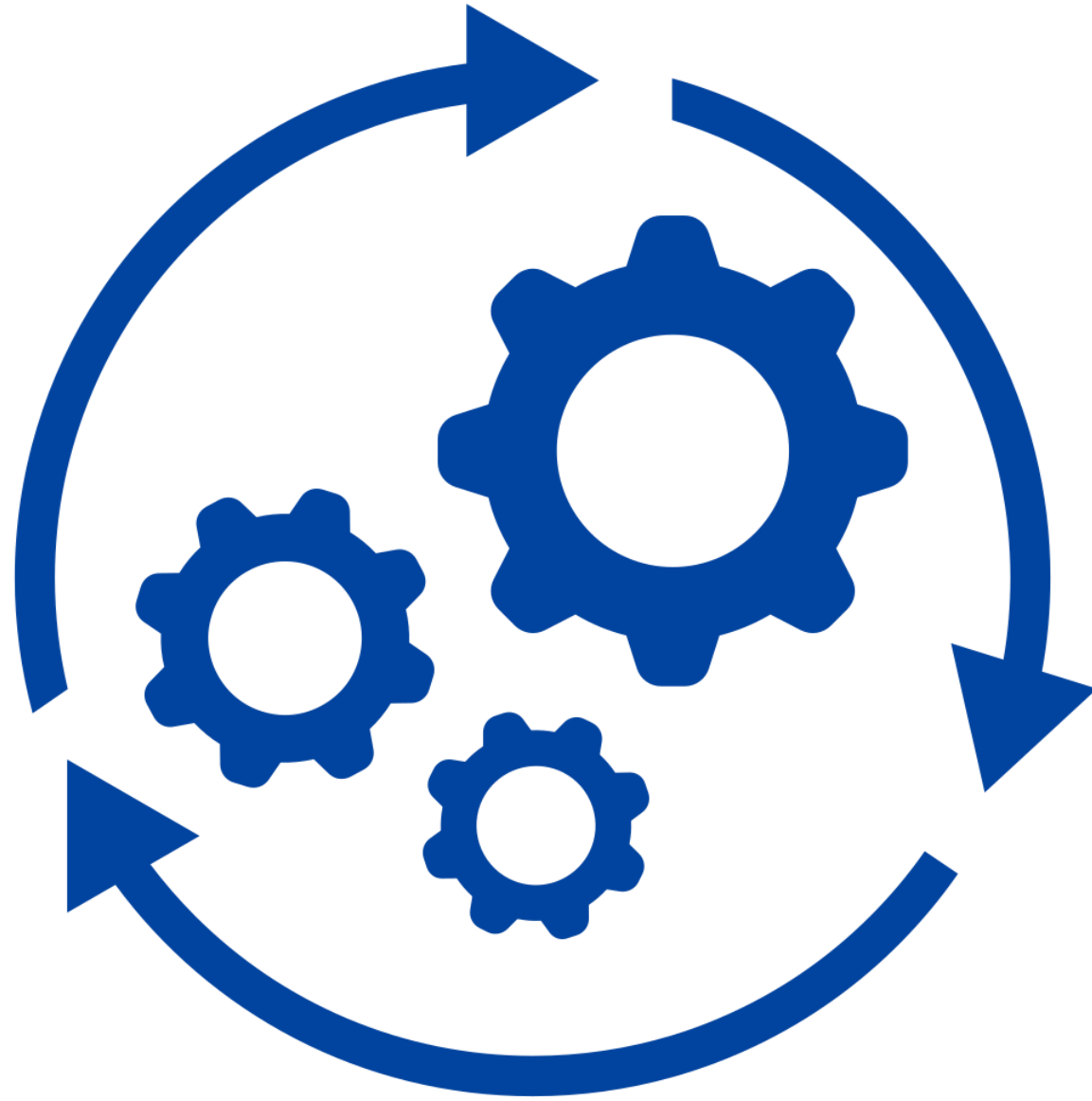
Risk = Likelihood x Consequence

Likelihood

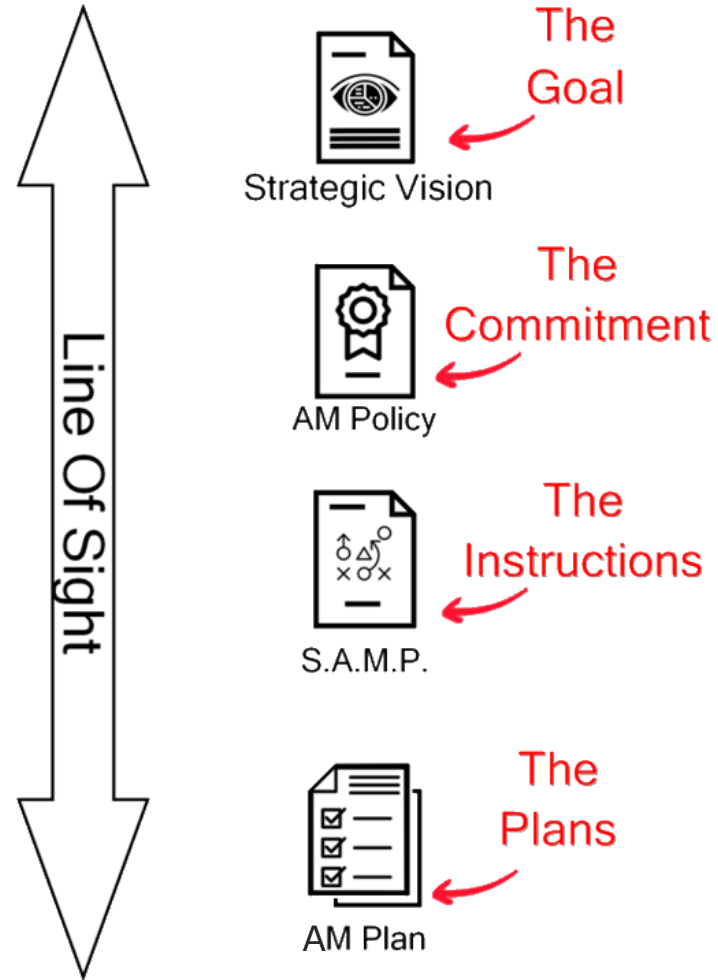
A qualitative description of probability or frequency.

Levels of Service





Asset Management System:





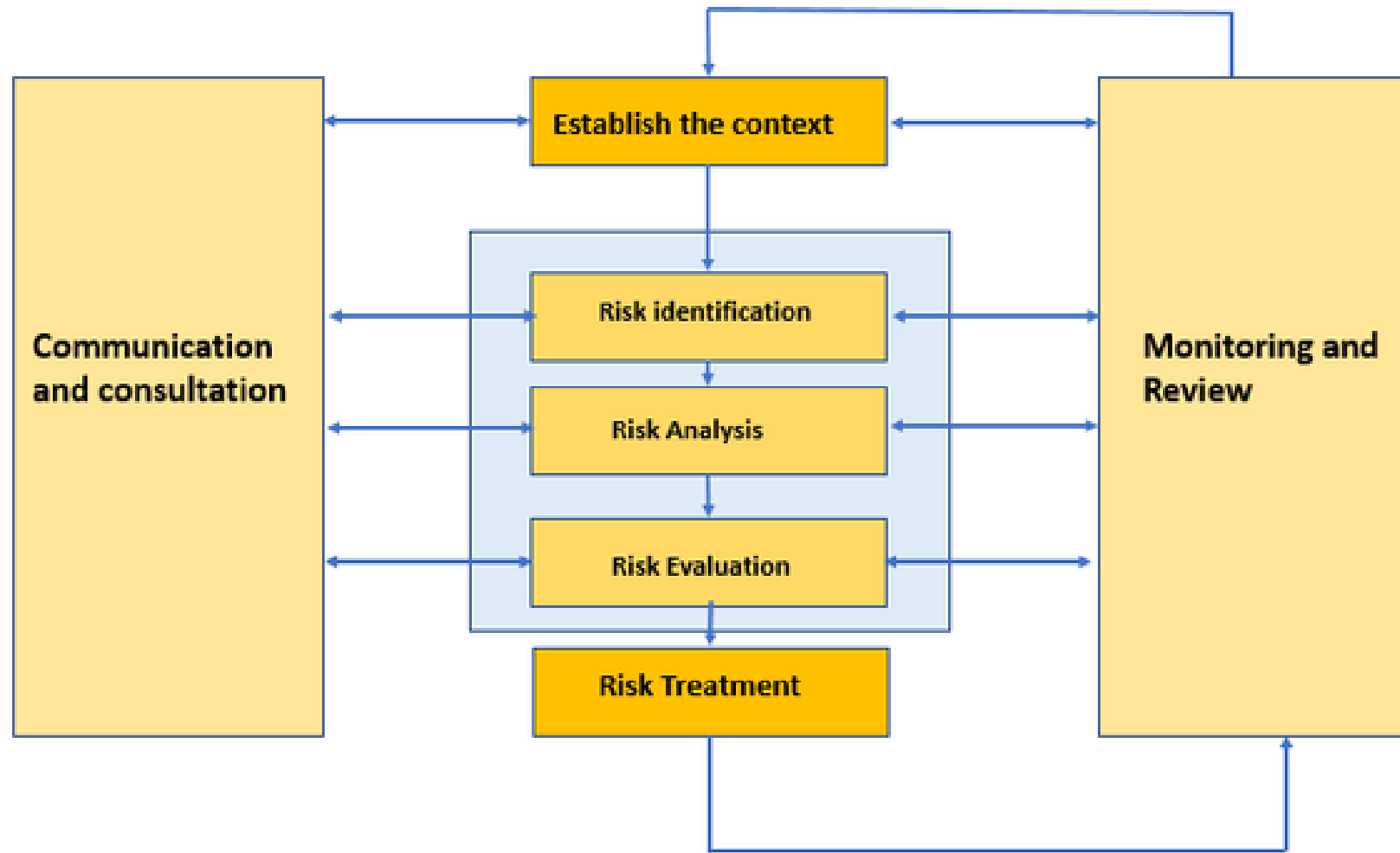
Likelihood

A qualitative description of probability or frequency.

Establishing Risk Context

General process to establish the
scope of risk analysis

ISO 31000 Process



Likelihood

A qualitative description of probability or frequency.

Simple Likelihood Matrix

Very High	?
High	?
Medium	?
Low	?
Very Low	?

Simple Likelihood Matrix

Very High	Occurs every year
High	Occurs every 1 or 2 years
Medium	Occurs every 5 years
Low	Occurs every 10 years
Very Low	Occurs every 20 years

Simple Likelihood Matrix

Very High	Occurs every year
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Very Low	Occurs every 20 years

Consequence

The outcome of an event in the form of loss, gain, disadvantage, advantage or injury.

Simple Consequence Matrix

Category of Consequence	Very Low	Low	Moderate	High	Very High
Delivery of Service	?	?	?	?	?
Health & Safety	?	?	?	?	?
Reputational	?	?	?	?	?
Financial	?	?	?	?	?
Environmental /Social	?	?	?	?	?

Simple Consequence Matrix

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Health & Safety	?	?	?	?	?
Reputational	?	?	?	?	?
Financial	\$	\$\$	\$\$\$	\$\$\$\$	\$\$\$\$\$
Environmental /Social	?	?	?	?	?

Simple Consequence Matrix

Category of Consequence	Very Low	Low	Moderate	High	Very High
Delivery of Service	Momentary Interruption	Partial Interruption	Short Term Interruption	Extended Interruption	Aabolishment of Services
Health & Safety	?	?	?	?	?
Reputational	?	?	?	?	?
Financial	\$	\$\$	\$\$\$	\$\$\$\$	\$\$\$\$\$
Environmental /Social	?	?	?	?	?

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Health & Safety	Minor Injuries	Injuries	Serious Injuries	Death	Multiple Deaths
Reputational	?	?	?	?	?
Financial	\$	\$\$	\$\$\$	\$\$\$\$	\$\$\$\$\$
Environmental /Social	?	?	?	?	?

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Reputational	One complaint	Several Complaints	Social Media Coverage	Local Coverage	National Media Coverage
Financial	\$	\$\$	\$\$\$	\$\$\$\$	\$\$\$\$\$
Environmental /Social	?	?	?	?	?

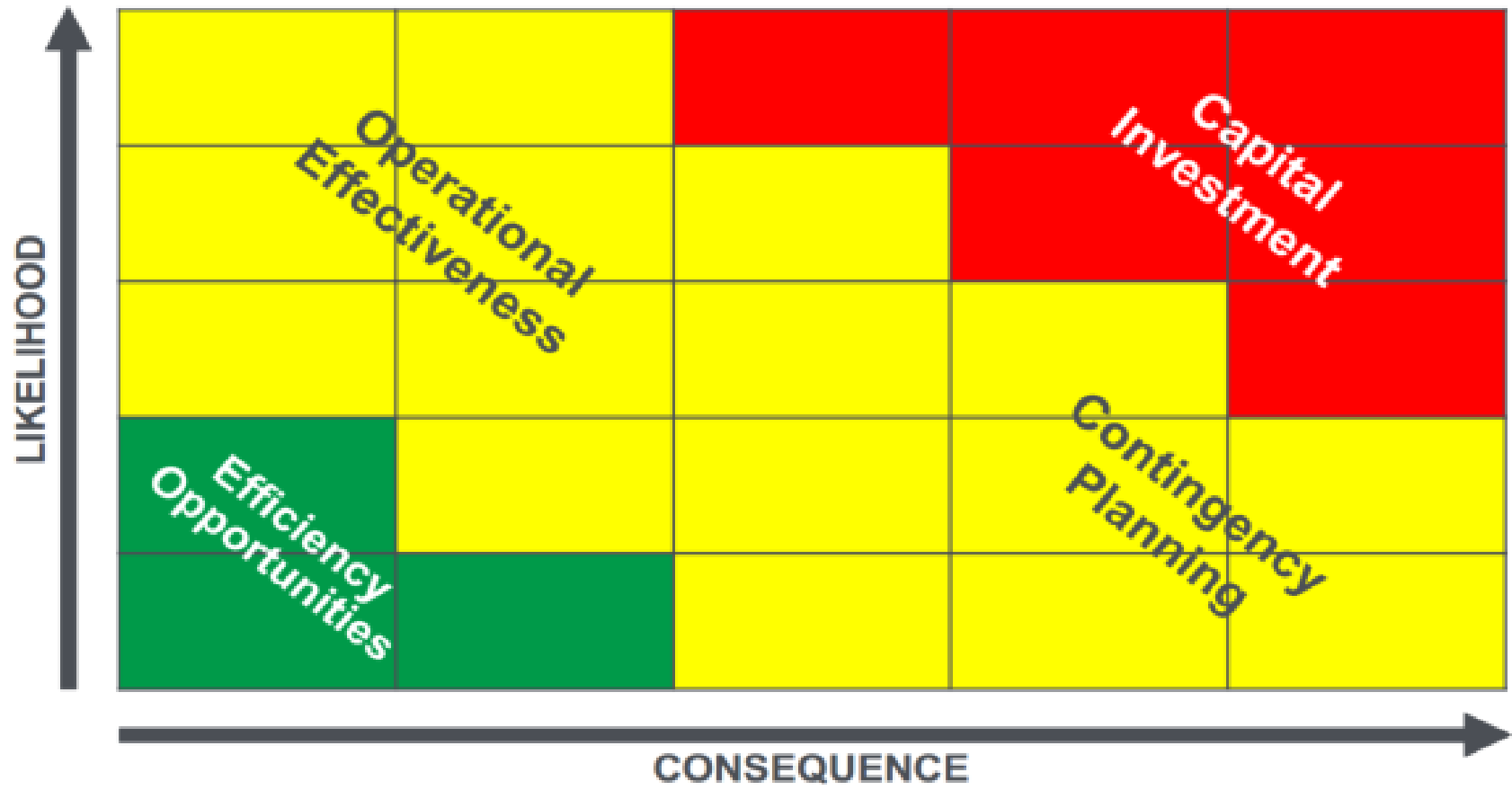


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Environmental /Social	1 km or less	>1, <15km	Regional	Provincial	National

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Let's Be Real

Establishing Risk Context

General process to establish the
scope of risk analysis

Establish Criticality

- Legislated Requirements
- Health and Safety Risks
- Financial Risks

Summary:



- AM is a system
- Risk is the effect of uncertainty on the ability of an organization to meet its objectives.
- The risk management process can be used to optimize asset management decisions

Summary:

- We reviewed how to use a likelihood/consequence matrix for risk analysis
- Review ISO 31010 for additional risk analysis tools
- Establish Criticality

