

Understanding Asset Management through the use of a trimetric AM model

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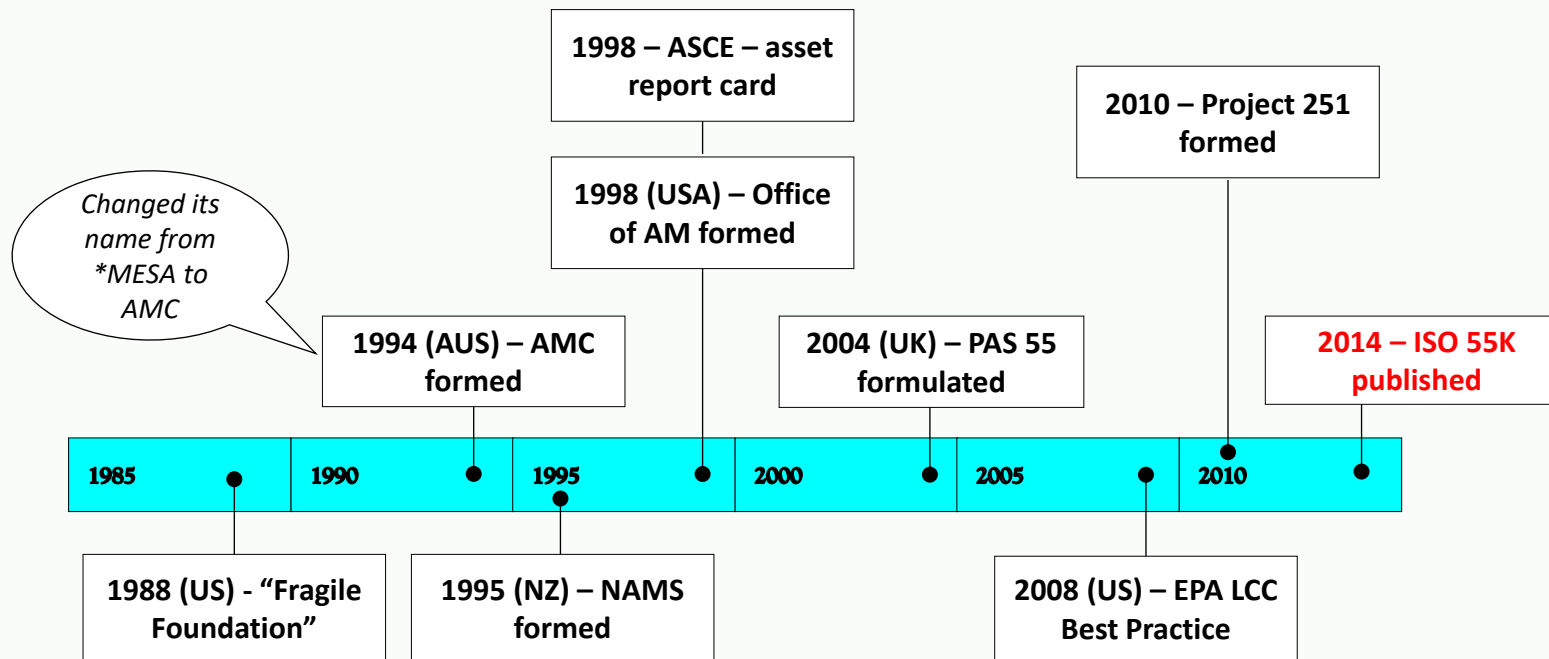
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“The views expressed in this presentation are the views of the Presenter and not the views of Department of Health, (WA), Serco Asia Pacific or Fiona Stanley Hospital”.



Asset Management – A brief history

Asset Management – A brief history



MESA – Maintenance Engineering Society of Australia
AMC – Asset Management Council (Australia)
NAMS – National Asset Management Strategy (Committee)
ASCE – American Society of Civil Engineers

PAS – Publicly Available Specification (UK)
EPA LCC – Environmental Protection Agency Life-Cycle Costing
ISO - International Organization for Standardization

Asset Management – A brief history

Fragile Foundations: A Report on America's Public Works

Final Report to
the President and Congress



Asset Management – A brief history

2013 | REPORT CARD for **america's INFRASTRUCTURE**

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

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INFRASTRUCTURE IS AMERICA'S BACKBONE

Your local water pipes and the Hoover Dam, the power lines connected to your house and the electrical grid spanning the U.S., your street and the national highway system - they need your help.

LAUNCH THE REPORT CARD TO FIND OUT WHY



Asset Management – A brief history



**Financial
Management**



**Engineering
Management**



**Environmental
Management**



**Facilities
Management**



**Asset
Management**





Definitions

Asset :

“item, thing or entity that has potential or actual value to an organization ”

ISO 55000

Asset Management:

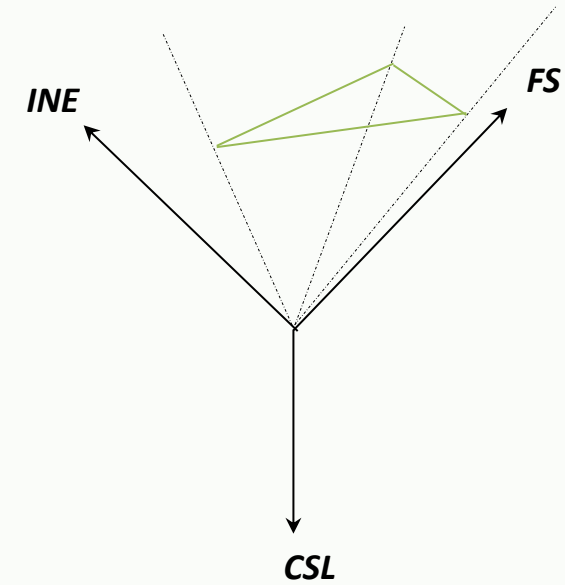
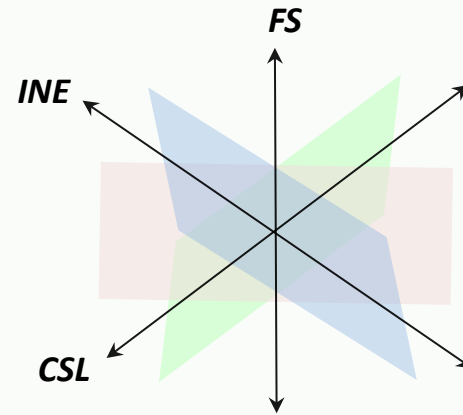
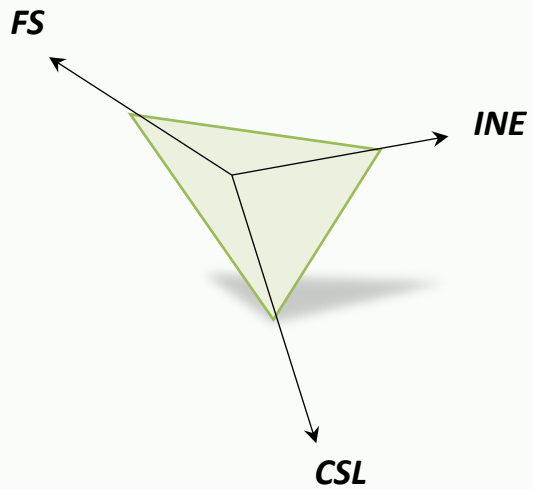
“ a coordinated effort to realise value from assets”

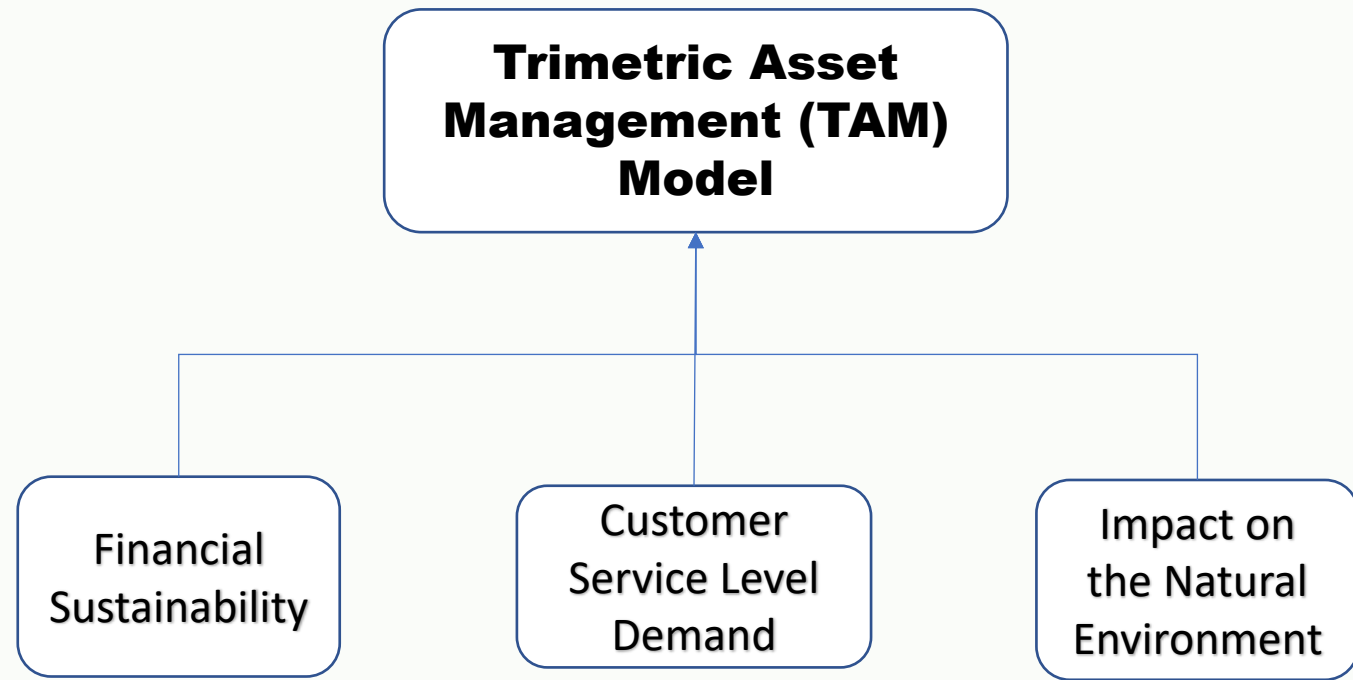
ISO 55000



Trimetric Asset Management model

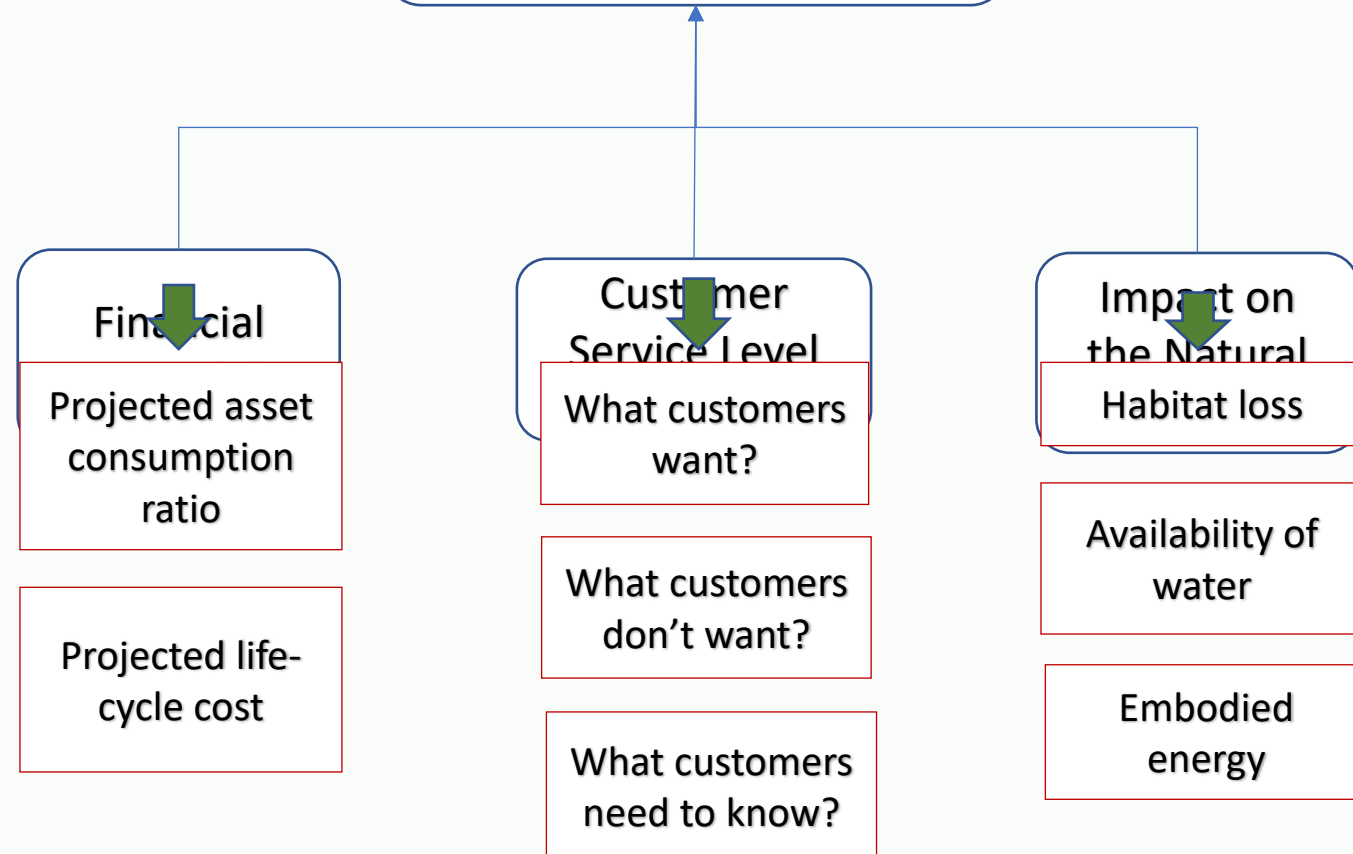
Trimetric Asset Management model





← *Realising the **value** of assets* →

Trimetric Asset Management (TAM) Model



Application –

Stormwater Drainage Network



Scenario



Customer Service Level Demand

CSL attribute:	CSL elements (examples) :
1. What customers want?	<ul style="list-style-type: none">a) SDN asserts do not affect street appeal.b) Minimum alteration to existing infrastructure.c) No loss of flora and fauna.
2. What customers don't want?	<ul style="list-style-type: none">a) Damage due to floodingb) Debris build-up.c) Reduced property value.
3. What customers need to know?	<ul style="list-style-type: none">a) Potential habitat loss.b) Life-cycle cost.

Financial Sustainability

FS attribute:	FS elements :
1. Asset consumption ratio	a) Project depreciated replacement cost. b) Current replacement cost (based on Net Present Value).
	a) Design and construction cost
2. Life-cycle cost	b) Maintenance cost
	c) Disposal cost

Impact on the Natural Environment

INE attribute:	INE Elements :
1. Habitat loss	a) SDNs not obvious and does not affect street appeal b) Minimum alteration to existing infrastructure c) No loss of flora and fauna

Application of survey results to TAM model

Elements	CSL			FS	INE
	What customers want?	What customers don't want?	What customers need to know?	LCC	Loss of flora and fauna
The existing rows of trees must not be removed – they provide shade and shelter.	✓ (51)				◆
Preserve or enhance street appeal – preserve the “leafy” suburb look.	✓ (51)				◆
Property value must not be diminished in any way.	✓ (51)				
Provide smooth passageway for vehicle traffic	✓ (48)			◆	
Council rate rise must be justified	✓ (51)		✓ (51)	◆	

Application of survey results to TAM model (con't)

Elements	CSL			FS	INE
	What customers want?	What customers don't want?	What customers need to know?	LCC	Loss of flora and fauna
No flooding to properties and ponding of roads		✓ (51)		◆	
No excessive build-up of debris – are unsightly and smelly when damp.		✓ (49)		◆	
Loss of shades		✓ (51)			◆
Loss of habitat		✓ (48)			◆
Overall initial cost of project – value for money.			P (35)	◆	

Summary of cost for BAU and proposed designs

	BAU Model	Option 1 - Tree Removed / Replaced	Option 2 – Trees not removed; collectors re- positioned
Number of assets:			
Gullies	4	4	5 (bigger capacity)
SEPs	4	4	0
Manholes	2	2	2
Summary of cost (NPV over 30-yr period):			
Total capital renewal cost	\$30,009	\$97,054	\$128,748
Total maintenance cost	\$279,342	\$159,447	\$137,096
Total Life-Cycle Cost	\$309,351	\$256,501	\$265,844
Average LLC	\$10,312	\$8,550	\$8,861



Future Work

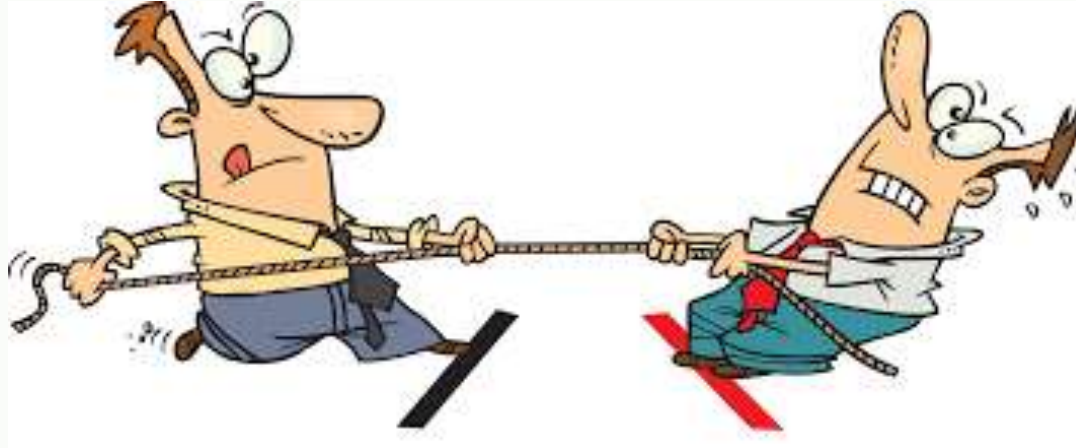
Facilities Asset Management -

Asset Classification:

**BSSA, BSC and Elements (Principal), FM,
Third-Party**

Ownership

Life-Cycle maintenance and renewal



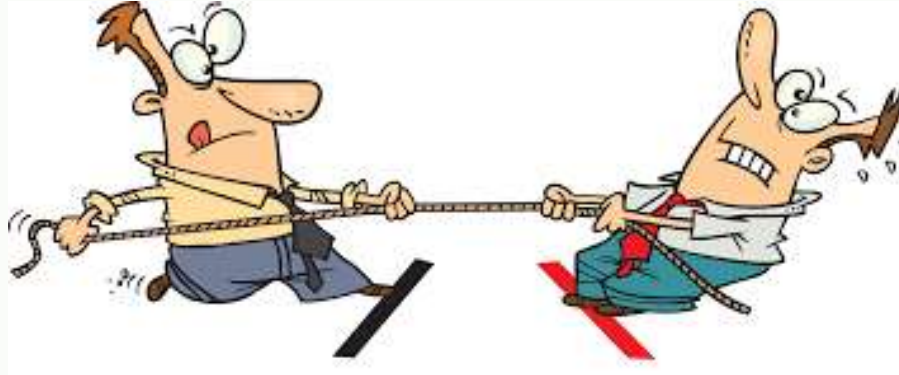
“a” - asset

“A” - Asset



Useful Life

Useful life as
short as
possible



Useful life as
long as
possible

Value?

Coordinated effort?

Financial sustainability?

Impact on the natural environment?

Customer service level demand?



Thank-you