



Strategic Asset Management in a Tertiary Education Environment

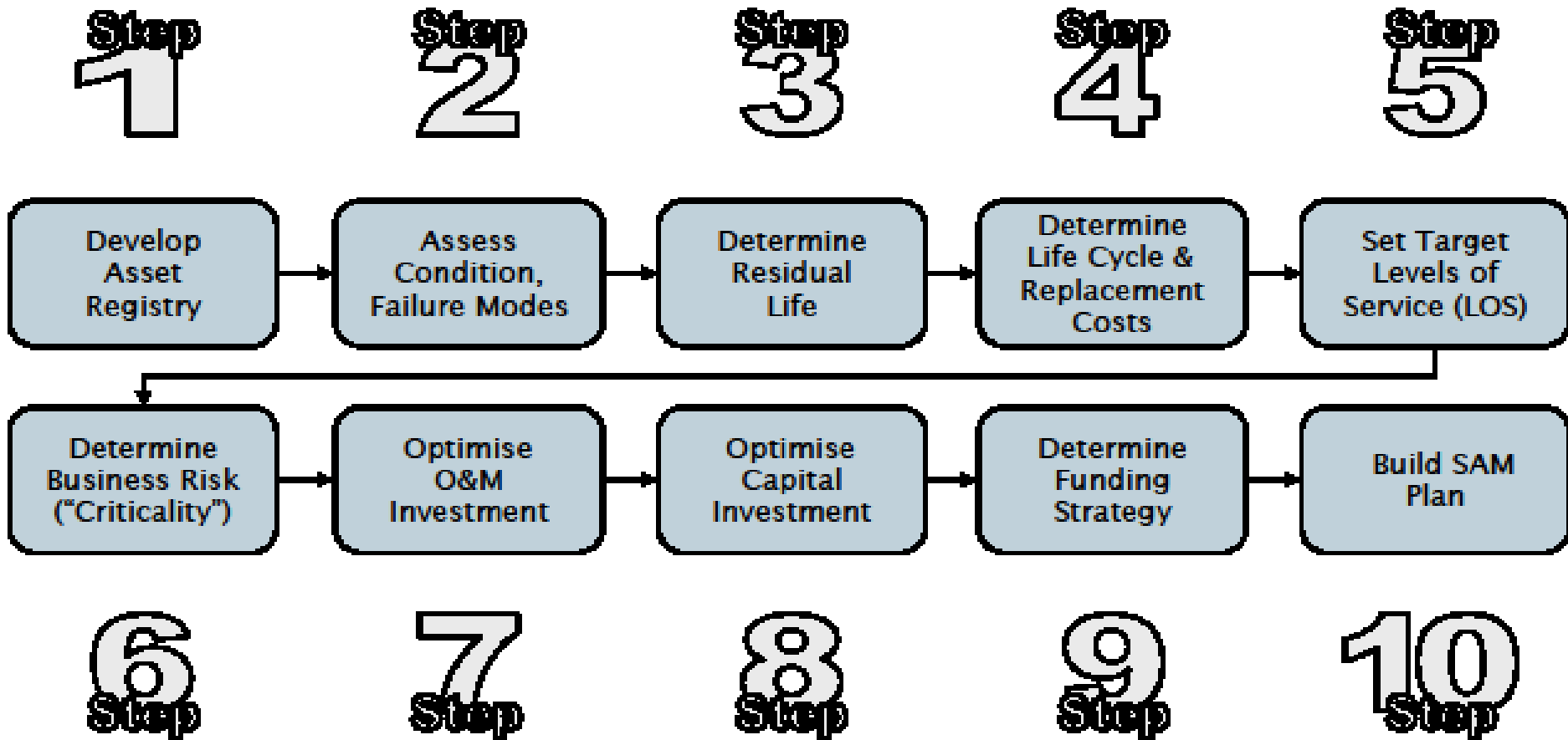


THE UNIVERSITY
OF AUCKLAND

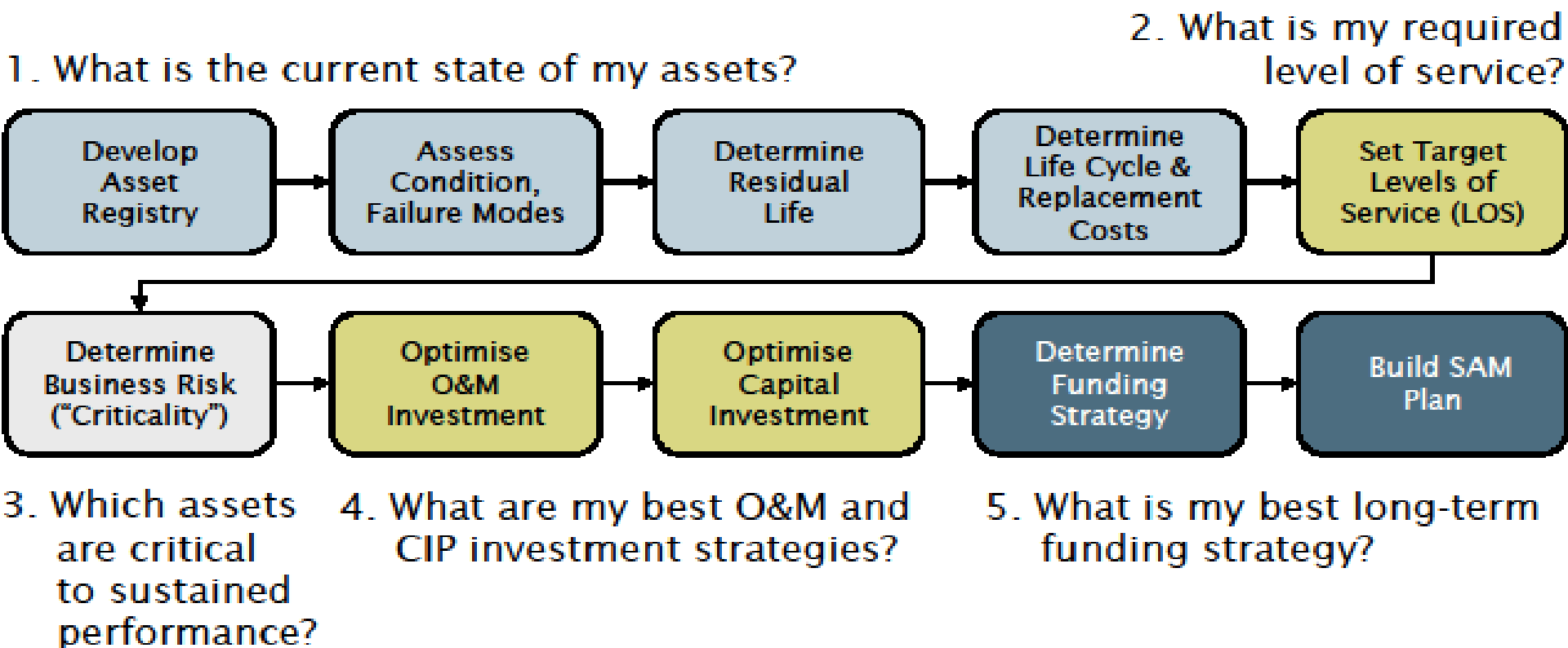
NEW ZEALAND

Te Whare Wānanga o Tāmaki Makaurau

SAM plan 10-step process

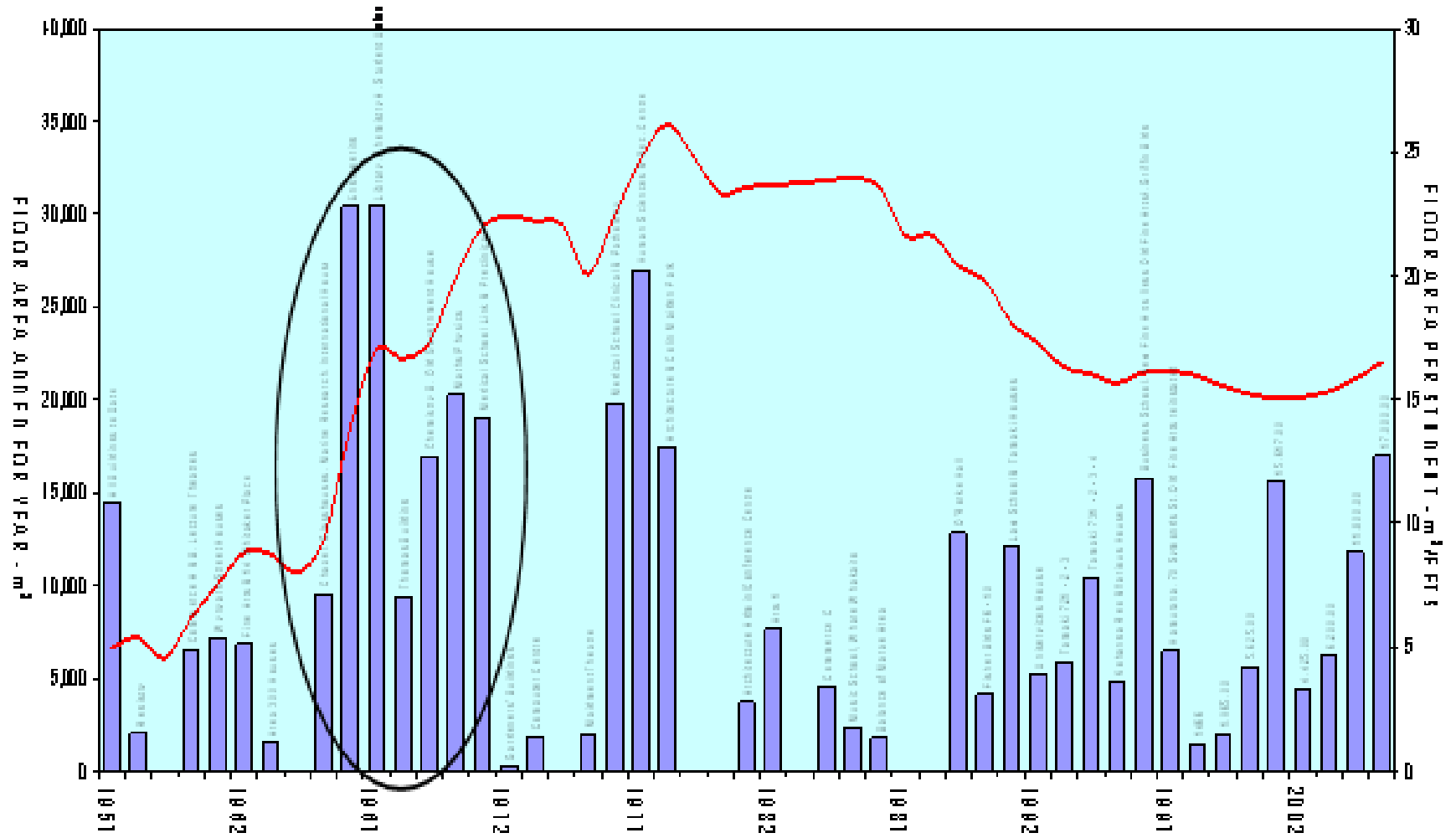


Integration of 5 core questions with 10-step process



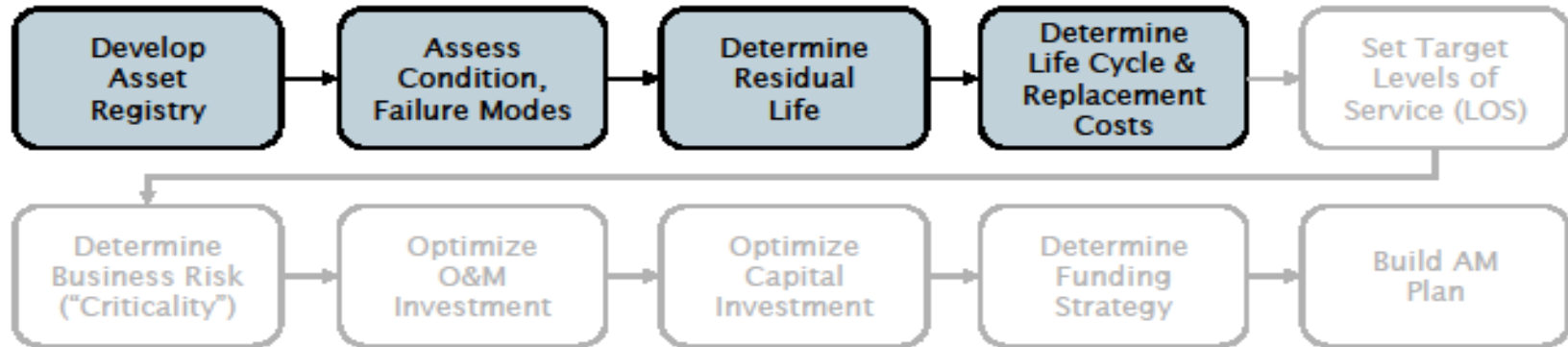
Changing Needs of Modern Teaching

GROSS FLOOR AREA & AREA PER STUDENT



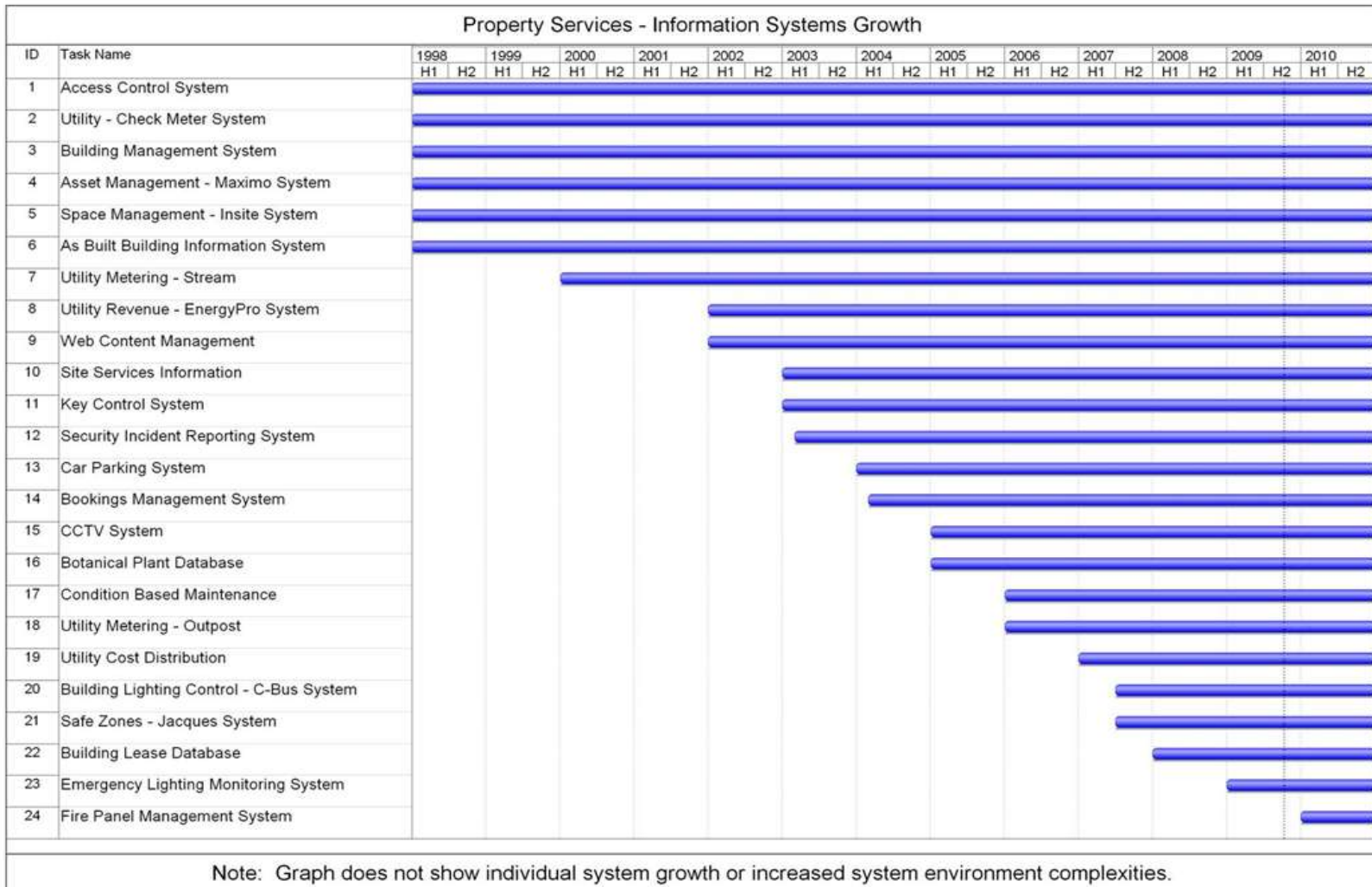
Asset Information

1. What is the current state of my assets?

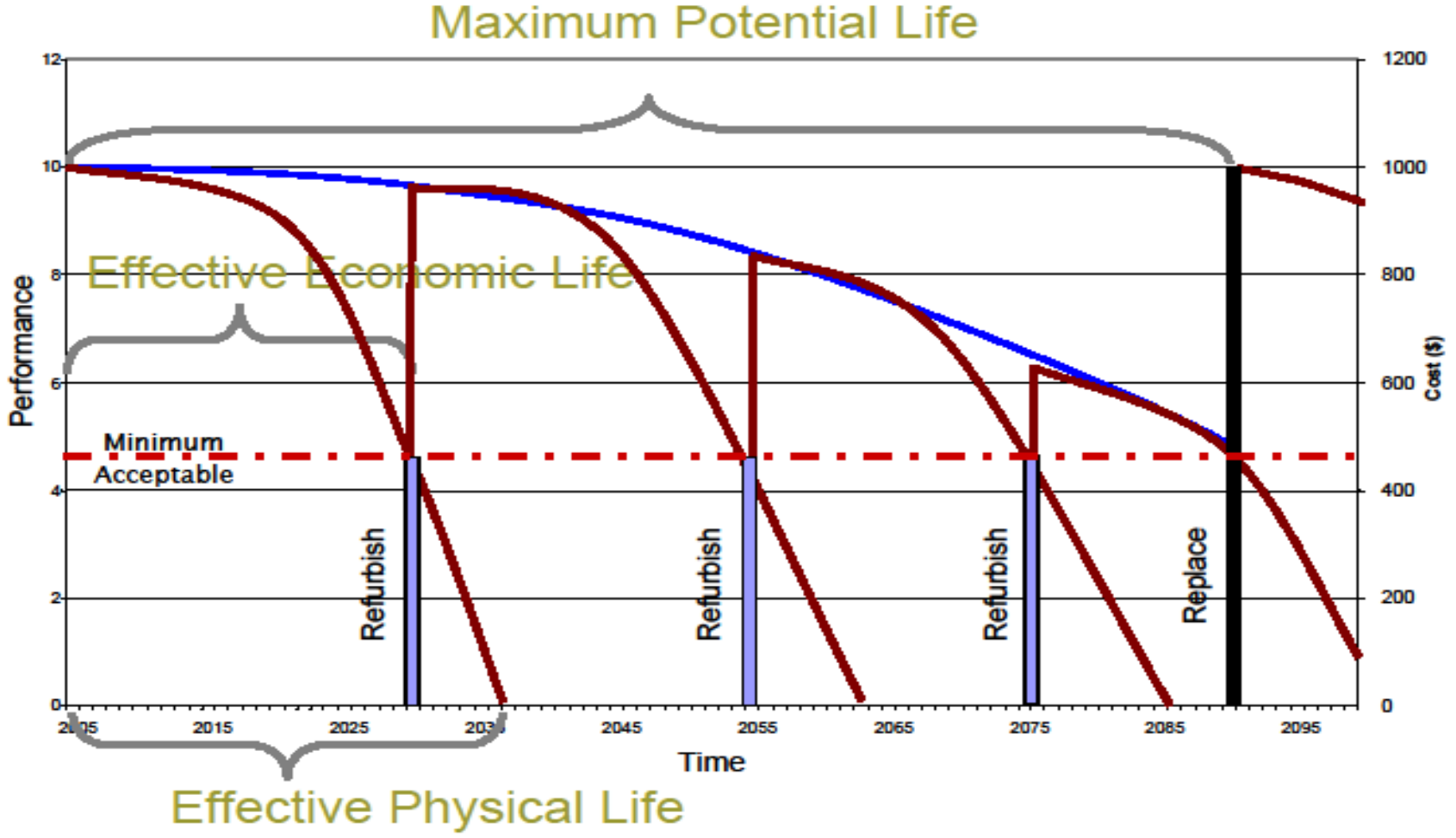


What do you know about your Assets?

IT Systems Growth 1998 - 2010

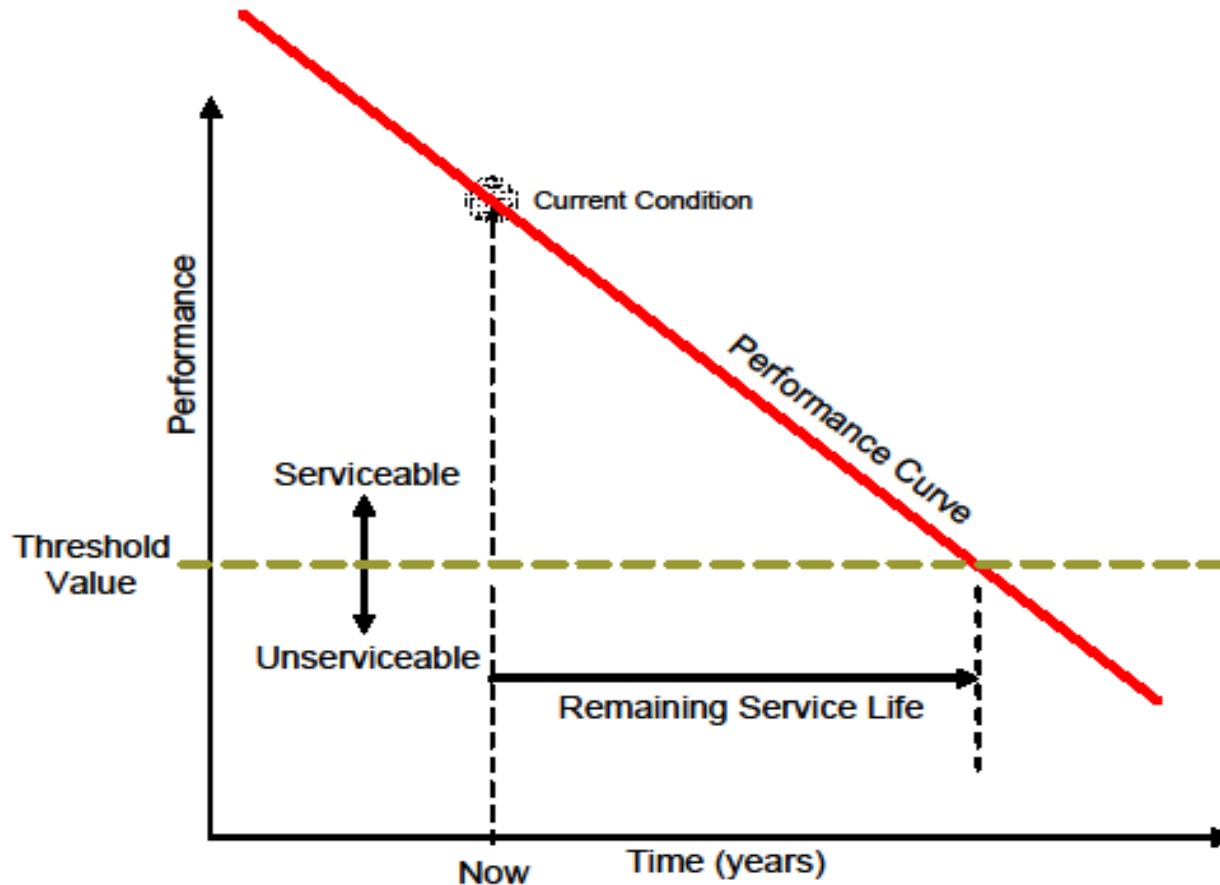


How Do We Make It Last!



How Low do you Go?

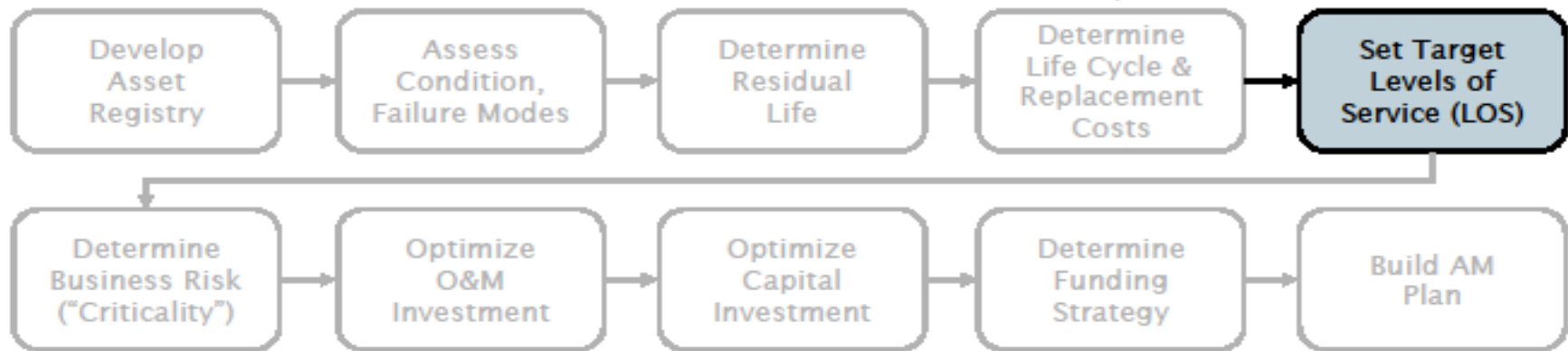
Determining Remaining Life



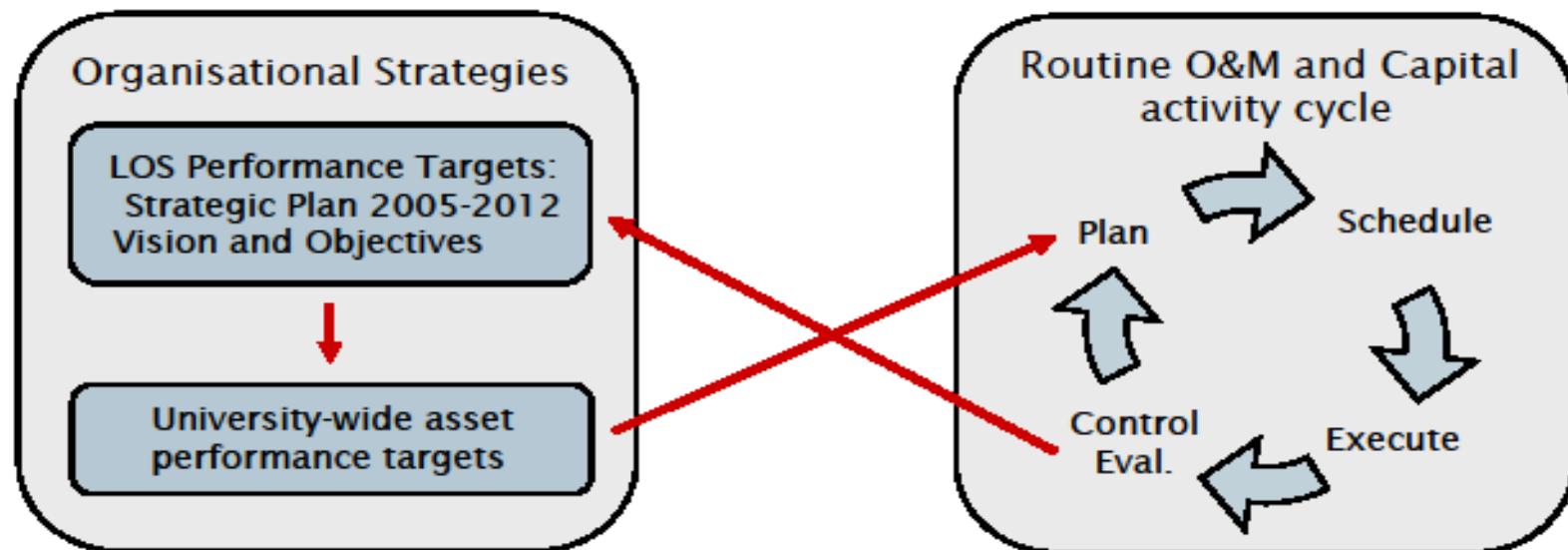
Level of Service

Step
5

2. What is the required level of service?



Alignment of routine O&M and capital activities with organisational strategies

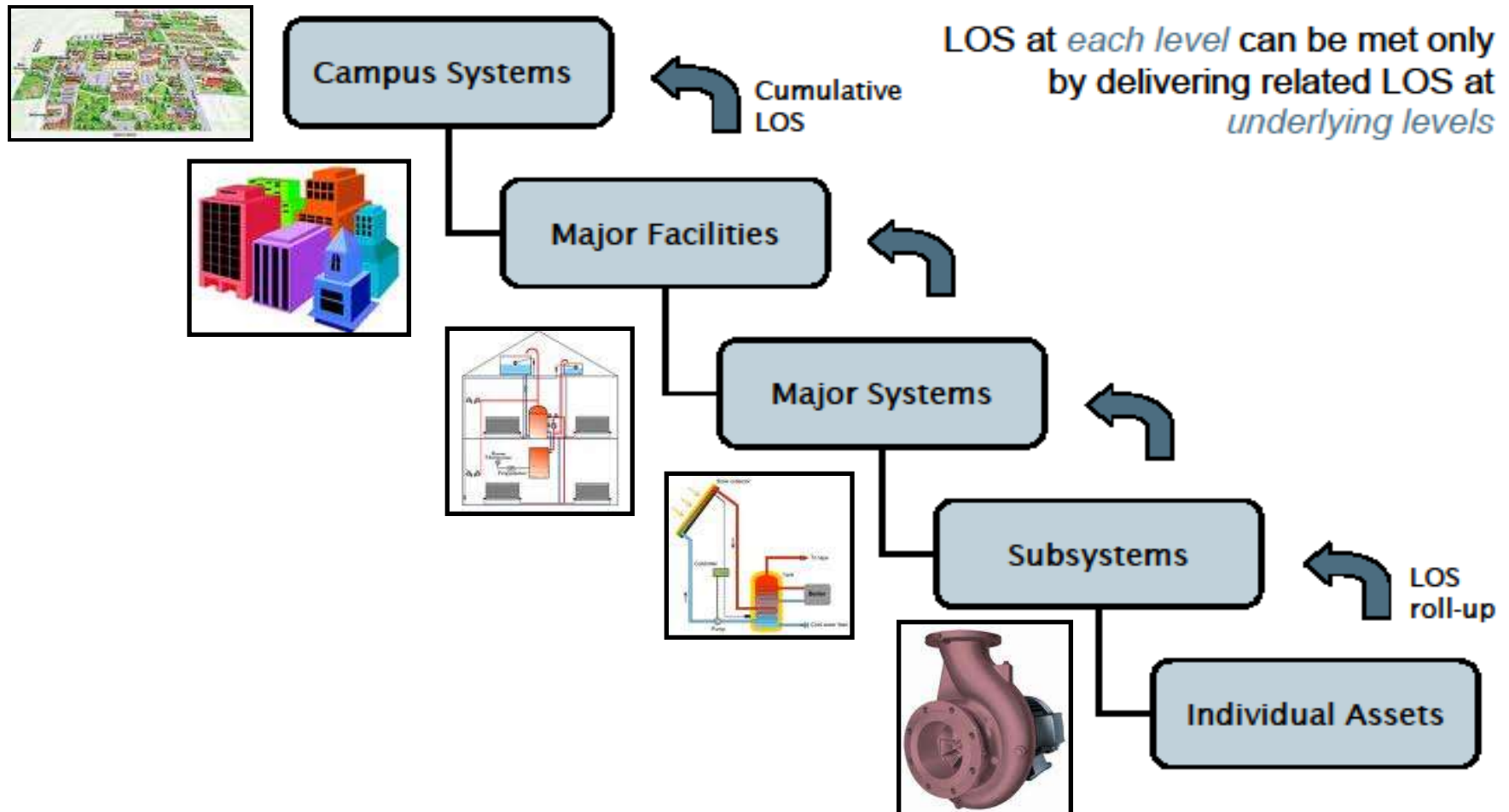


Why Level Of Service?

It helps us...

- *Concentrate* (focus) efforts and resources
 - On agreed on service levels
 - Less *service-level-defined by notion*
- *Communicate* service expectations and choices
 - Increased services equal increased costs
 - Discussion of trade-offs and risks
- *Negotiate* (regulators and council/commission/board)
 - Service levels
 - Costs and budgets
 - Fee impacts
 - Reinvestments for renewal
 - Level of risk

Roll up of Level Of Service



- LOS is constantly subjected to forces of change
 - Growth/Retrenchment
 - Regulatory requirements; Heritage, Health and Safety
 - Demands of customers; Accommodation, Int'l Students
 - Physical deterioration
 - Operational cost efficiencies
 - Sustainability imperatives

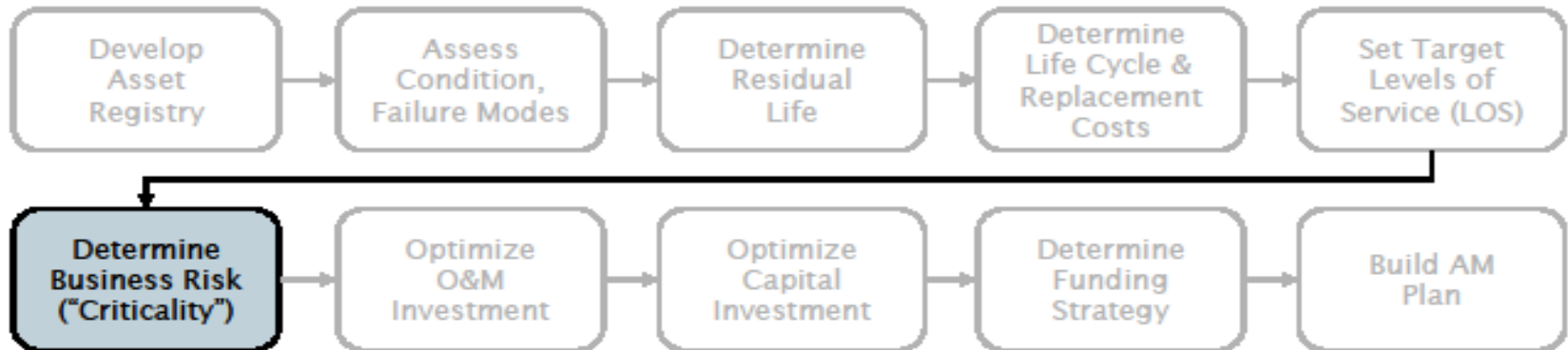


Laboratories a New Generation of Service

Faculty of Medicine Generic Labs



Which Assets are Critical?



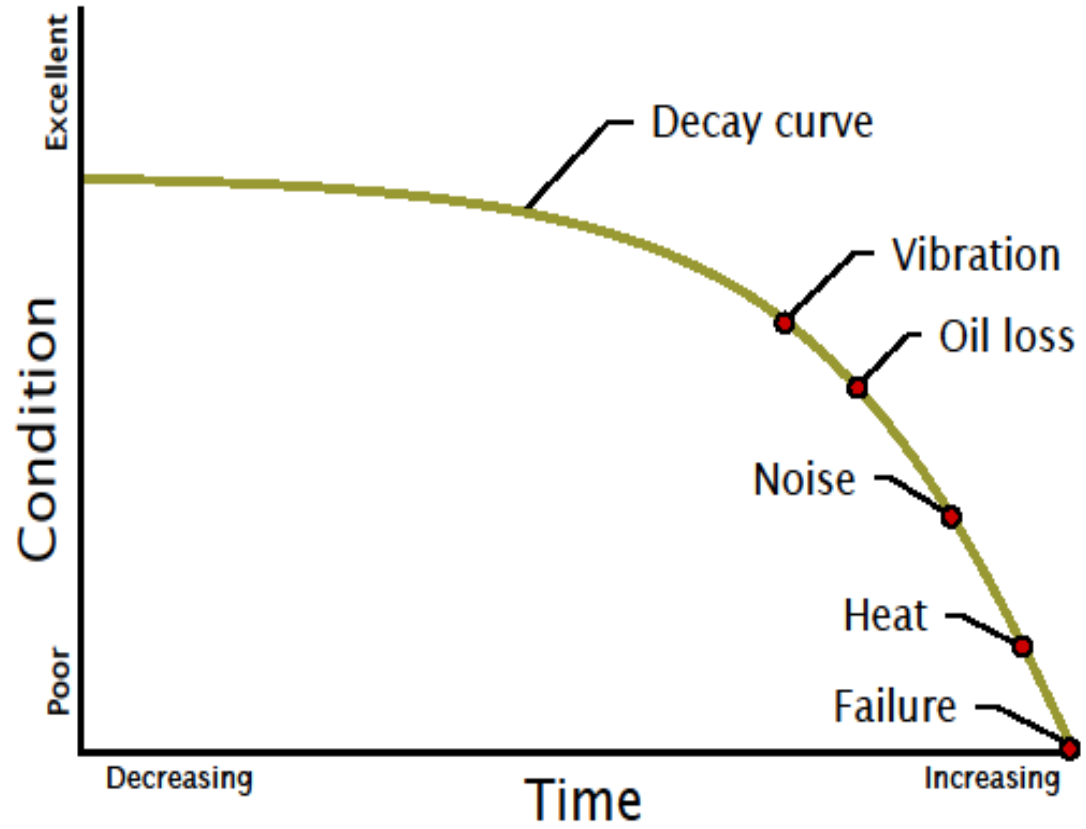
3. Which assets are critical to sustain performance?

6
Step



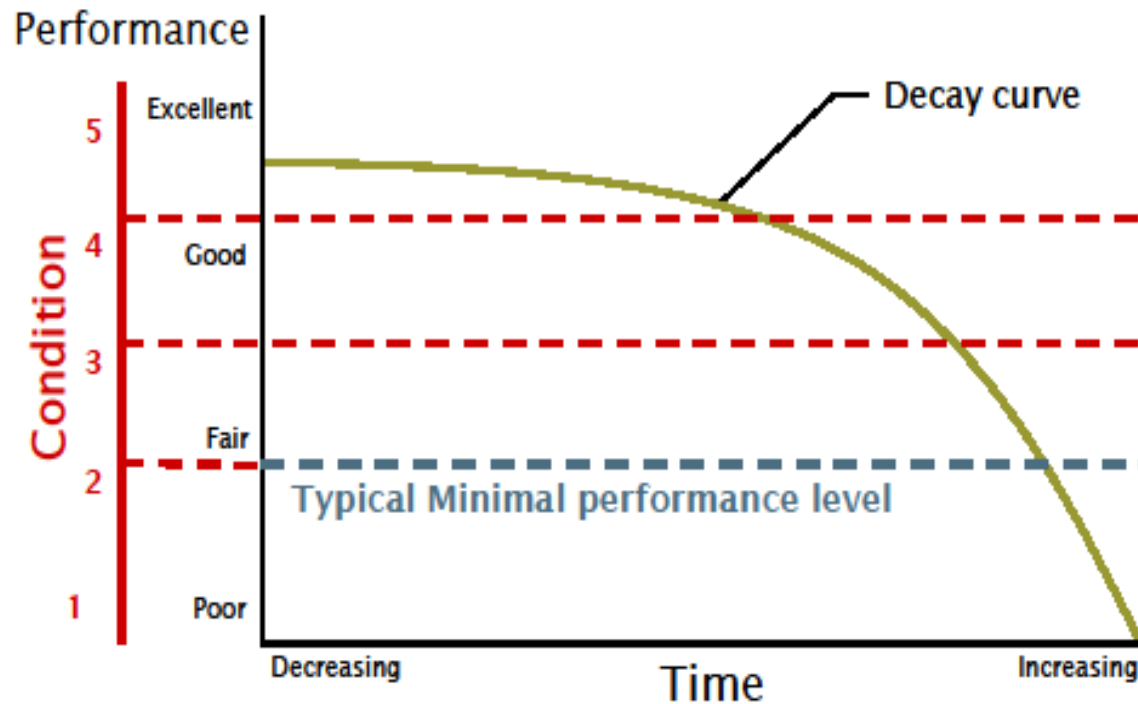
How do Assets Fail?

Monitoring condition is a key to knowing risk



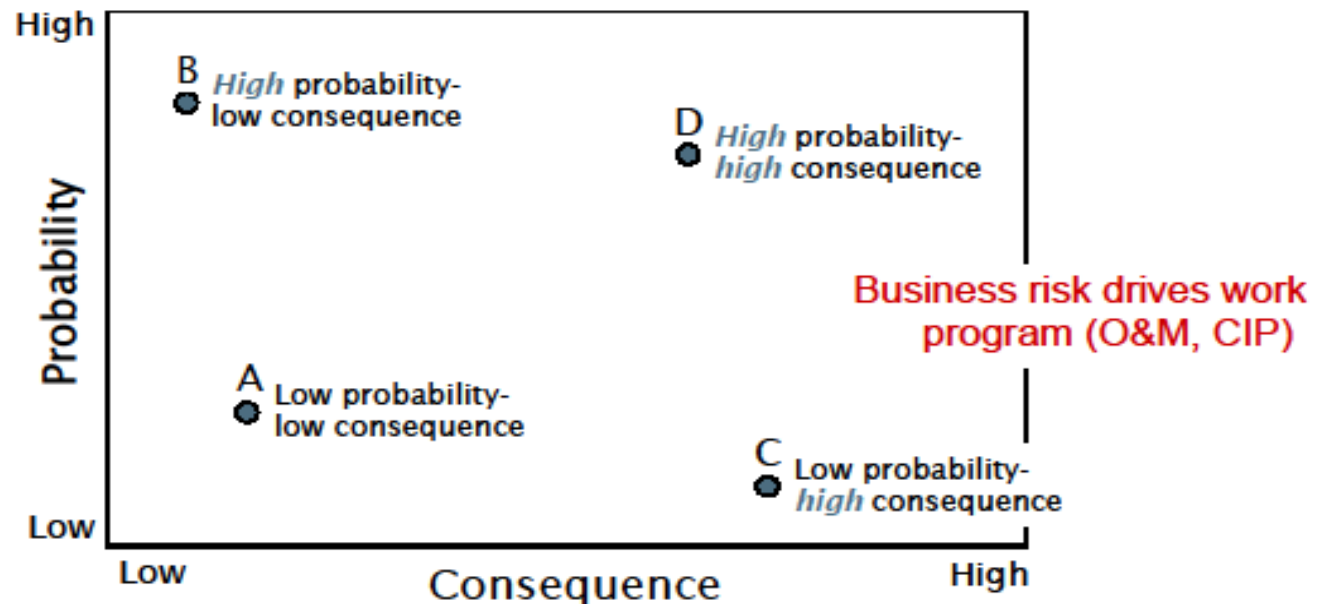
Asset Condition can Predict Failure

How Low do you Go?



Determine Asset Failure Risk

What is probability of failure? What is consequence of failure?

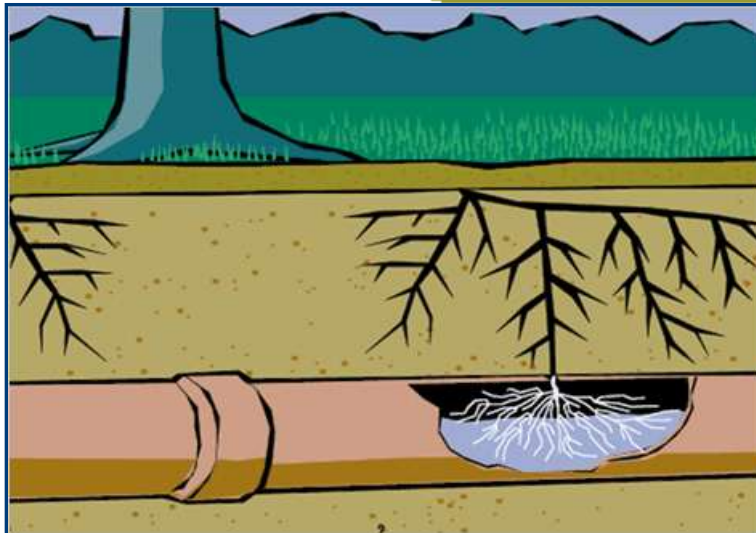
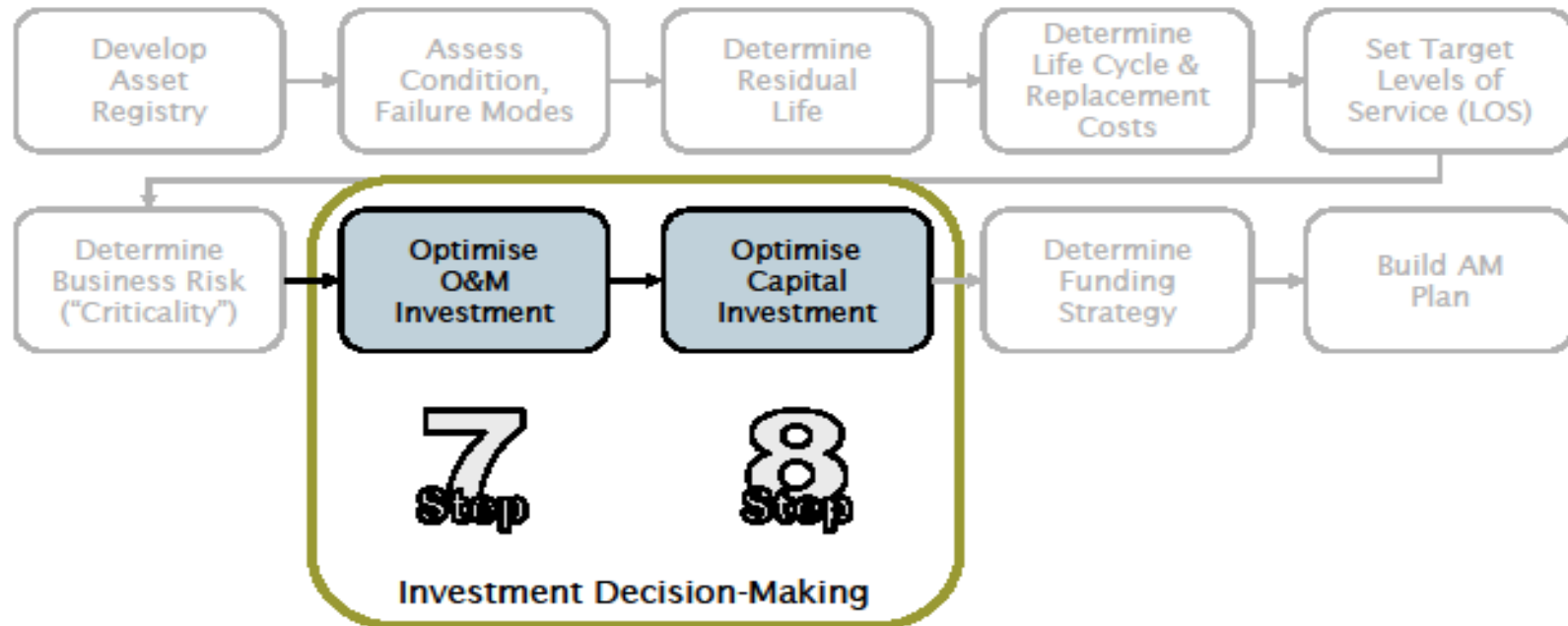


Which Projects First?

Business Risk Exposure (BRE) increases as Consequence of Failure (CoF) and Probability of Failure (PoF) increase

Probability of Failure	High	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	Low	1	2	3	4	5
		1	2	3	4	5
		Low	Consequence of Failure			High

Investment Decisions



Or



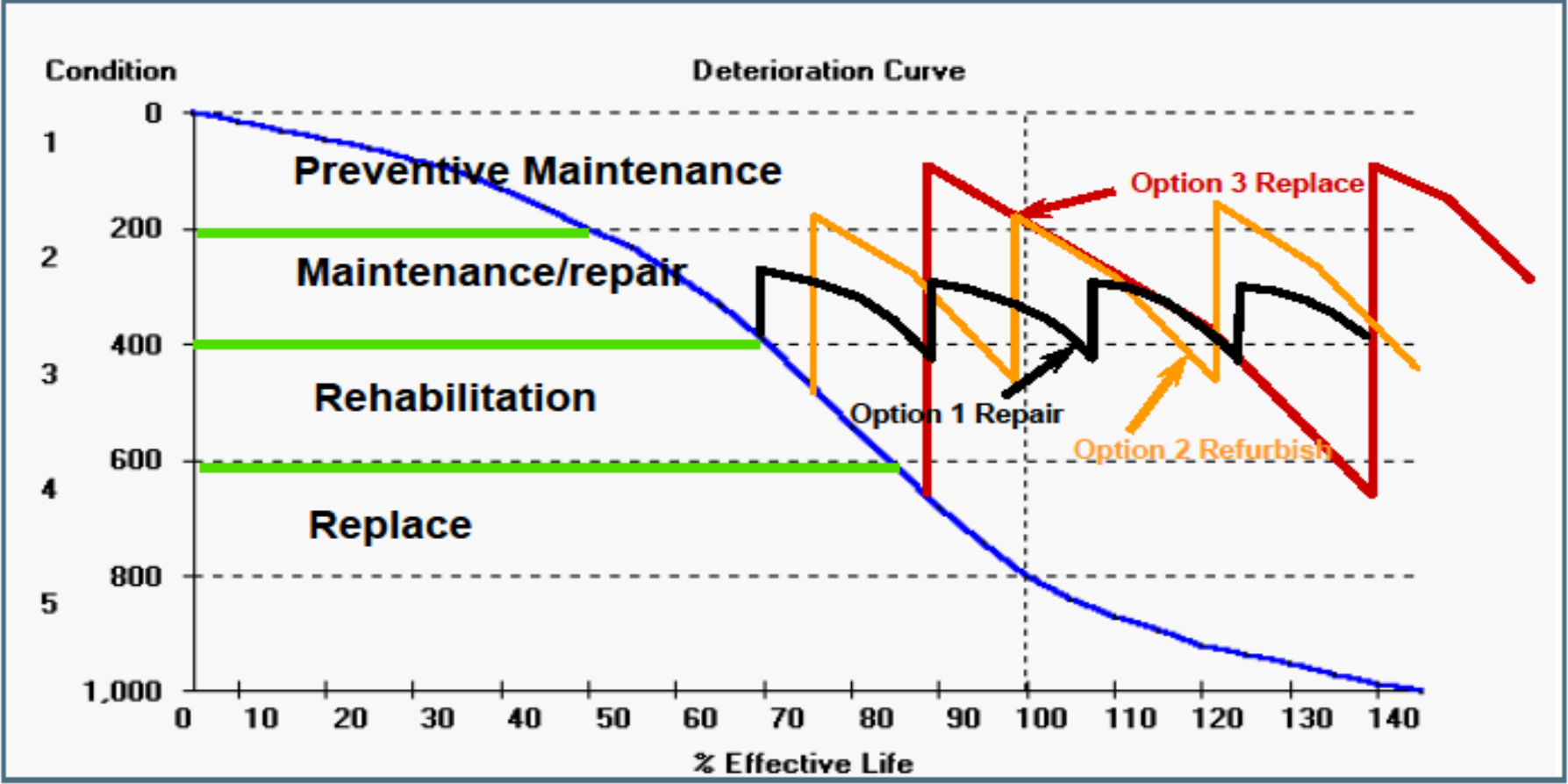
So, what is meant by...

Life Cycle Cost Strategies

- Fundamental asset management options available to the management team are
 - Do nothing (zero-based strategy)
 - Status quo
 - Operate differently
 - Maintain differently—run to failure, preventive-based, predictive-based
 - Repair
 - Refurbish/Rehabilitate
 - Replace
 - Decommission
- Which strategy for each asset?
- Which Combinations over the life cycle

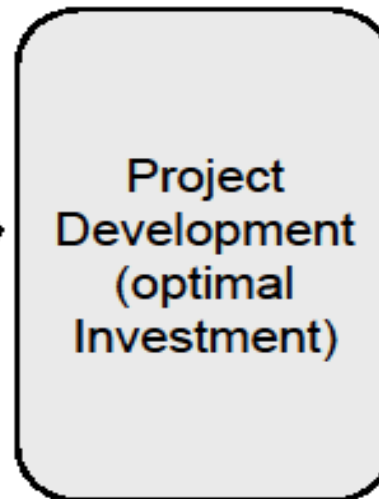
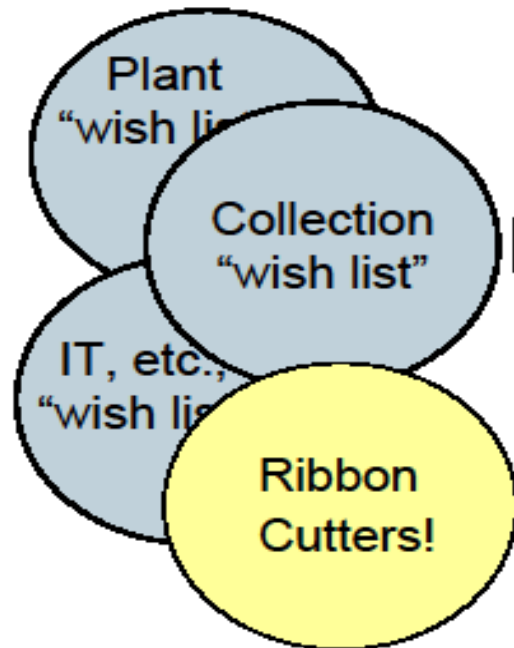
It's *all* investment!

Managing the “Asset Consumption” Process

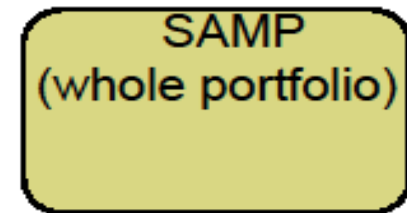


Project identification: Moving to “best practice”

“Champion” model



“Structured” model



- Inventory
- Condition
- Failure modes
- Residual life
- Replacement \$
- Service

Who Inputs to Design and When?

Life-cycle O&M costs often are 2-5 (even 10) times initial construction costs

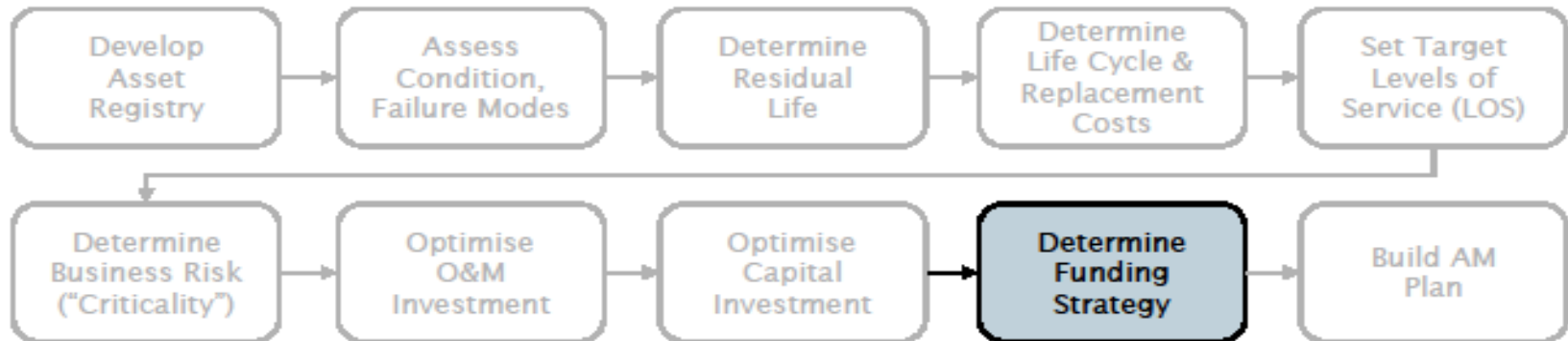
65-85% of all life-cycle costs are “locked-in” here!



Life-cycle cost reduction opportunities diminish →

Source: United States E.P.A.

Funding Strategy



5. What is my best long-term funding strategy?

9
Step



Asset Management Investment Planning

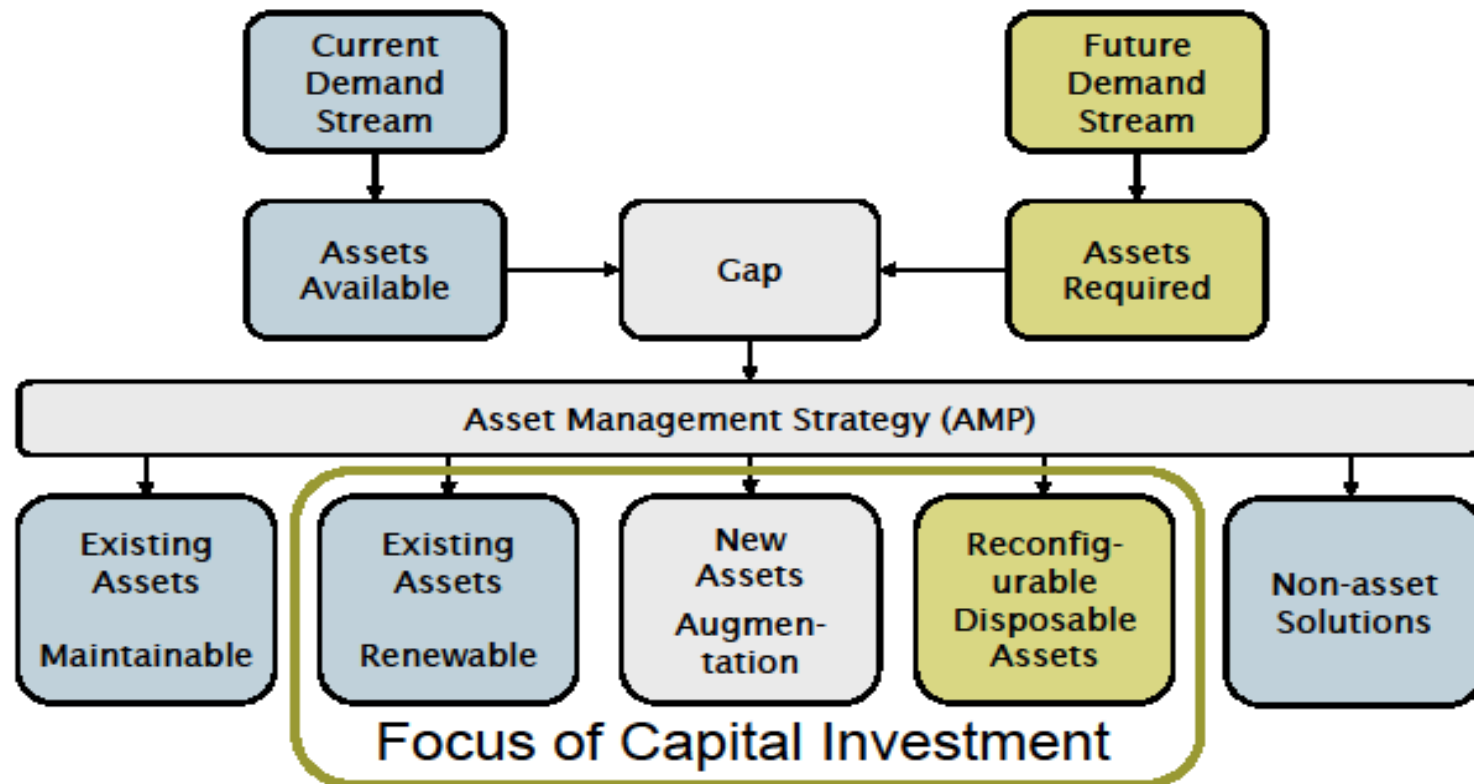
- Capital investment
 - Renewal (repair, refurbish, replace)
 - Augmentation (capacity, functionality)
- Maintenance investment
 - Planned
 - Preventive
 - Predictive
 - Corrective
 - Unplanned

What will be Future
Life-cycle projected costs?

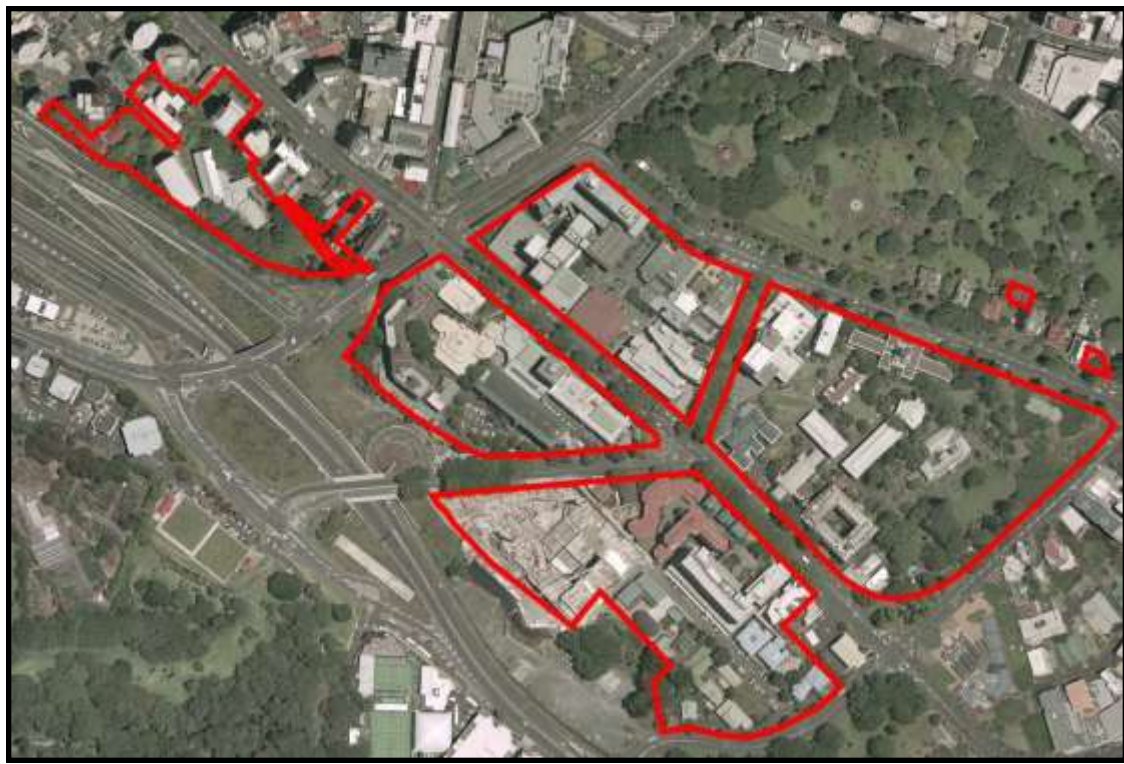
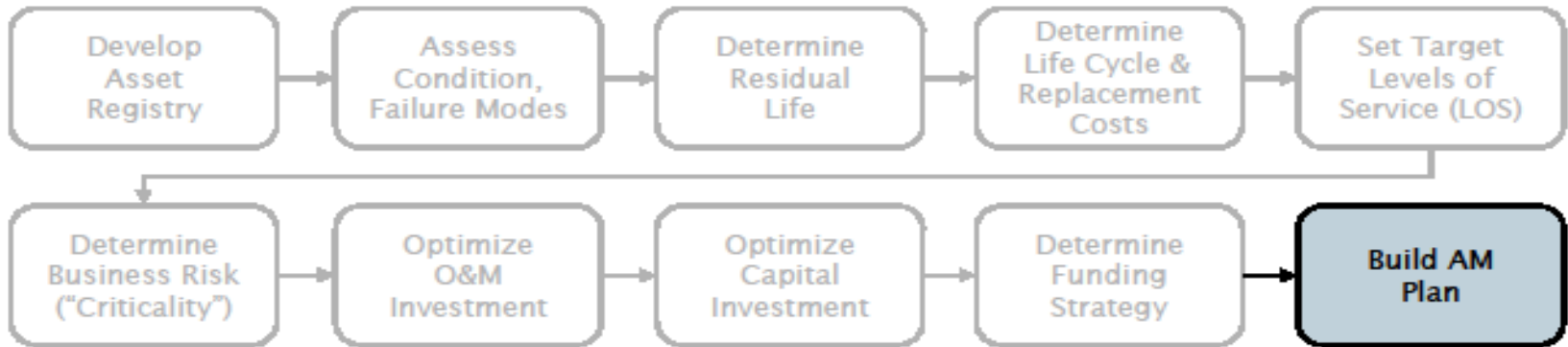
Where is the Gap?

Capital Investment Plan

Balancing future demand with current capabilities

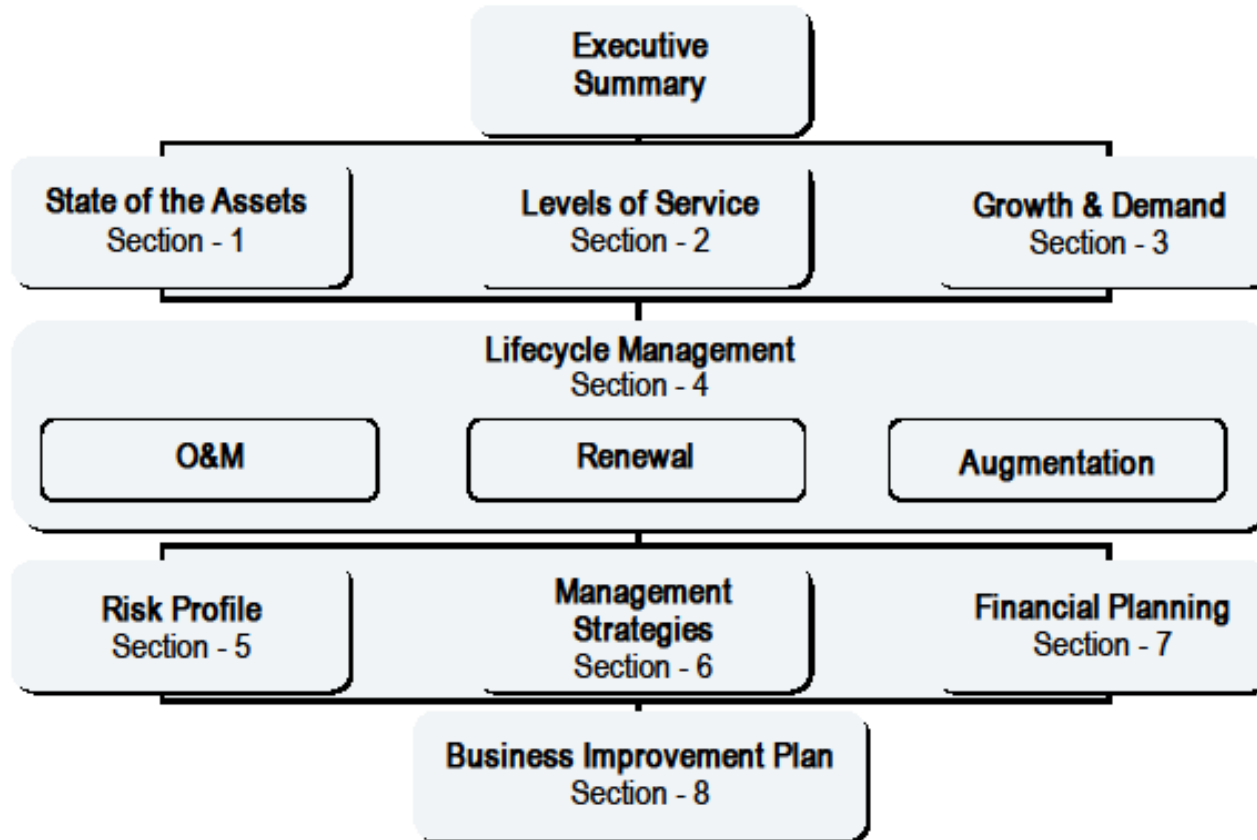


Building the Plan



10
Step

The Strategic Asset Management Plan



Realistic Expectations for SAM



- Takes several years of detailed, *nitty-gritty work* to fully deploy
- Requires eventual *buy-in* commitment of the whole organisation
- Needs *upfront* investment to get started, with *hidden* returns for initial years