

Road Asset Management (RAM) Training

10-13 August 2020

Session 2-1: Levels of Service
Session 2-2: Inventory & Condition Data

Primer for full session

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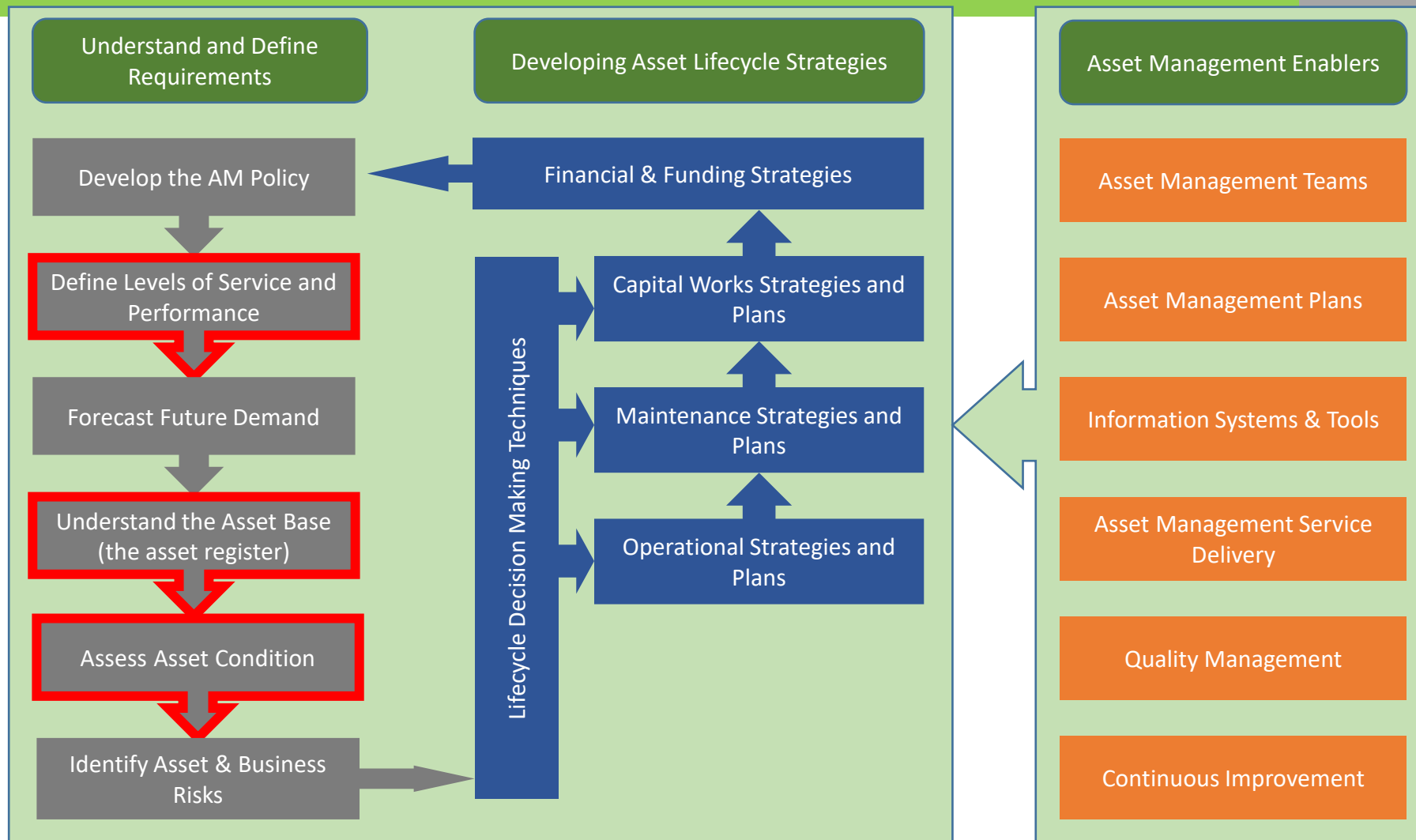
Training Sessions

1. Introduction to Road Asset Management
2. Overview of the Components of RAM
3. Levels of Service and Performance Measures
4. Inventory and Condition Data
5. Lifecycle Decisions Making and Funding
6. Asset Valuation
7. Asset Management Plans, Teams and Tools
8. Contracting Models and Impact on RAM

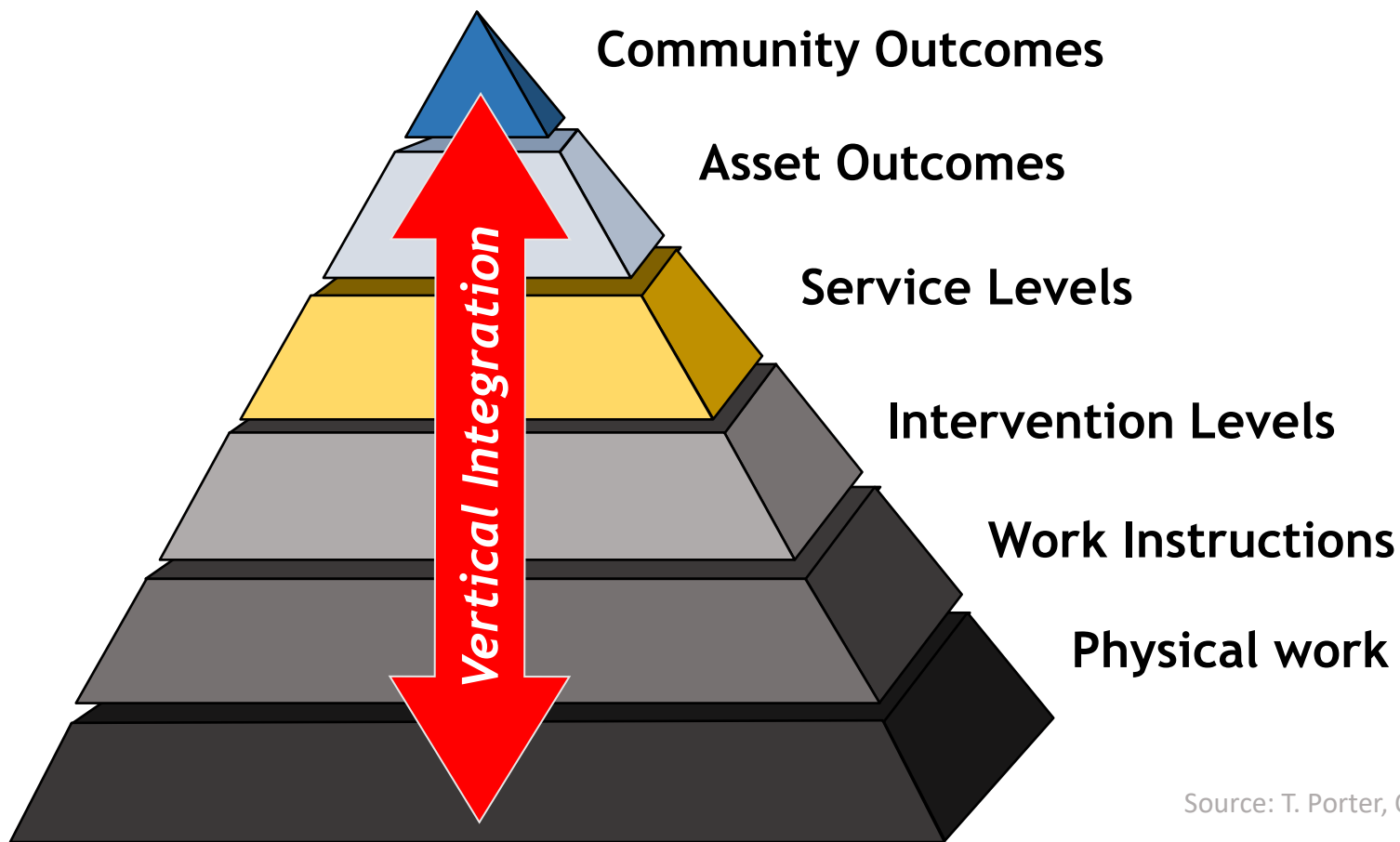
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International Infrastructure Management Manual (IIMM) AM Process



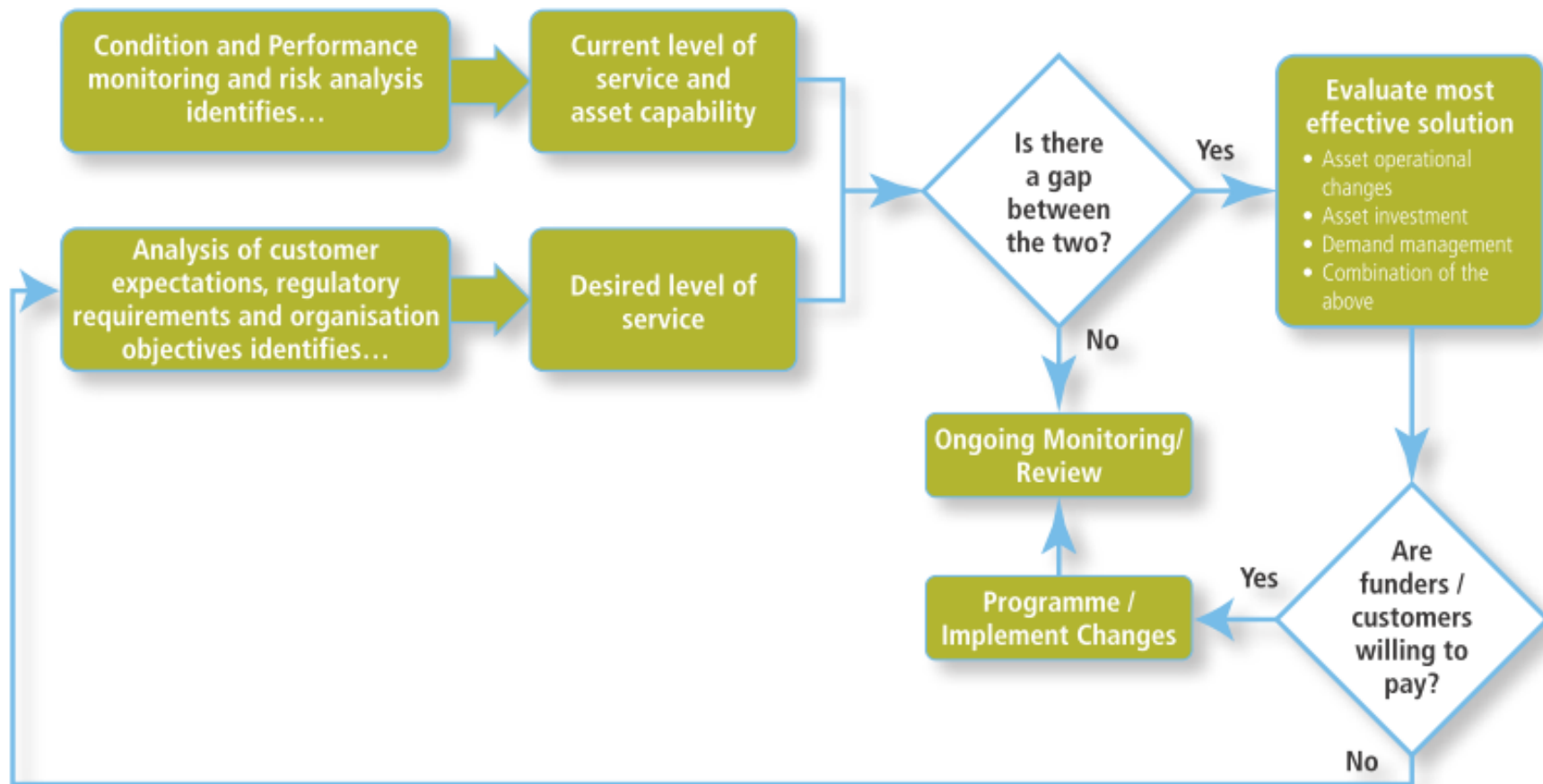
Alignment of Activities



Source: T. Porter, Opus International Consultants Ltd

Asset Management Pyramid

It may called asset management, but assets are only there to deliver a service



Some key definitions

- Levels of Service - What the organisation intends to deliver. Levels of service describe one or more attributes of the service from a customer point of view
- Example: Provide a network that connects communities.
- Performance Measure (also termed Performance Indicator)
- A qualitative or quantitative measure of a service or activity used to indicate how the organisation is doing in relation to delivering levels of service
- Example: % of communities > 500 habitats serviced by an all weather road.

Some key definitions

- Performance Target

- A specific quantifiable target for performance, used in reference to a performance measure.
- Example: 90% by 2015, 100% by 2020.

- Performance Result

- The quantifiable performance result for a year, used in reference to a performance target.
- Examples: 81% communities serviced by June 2013.

A typical NZ example

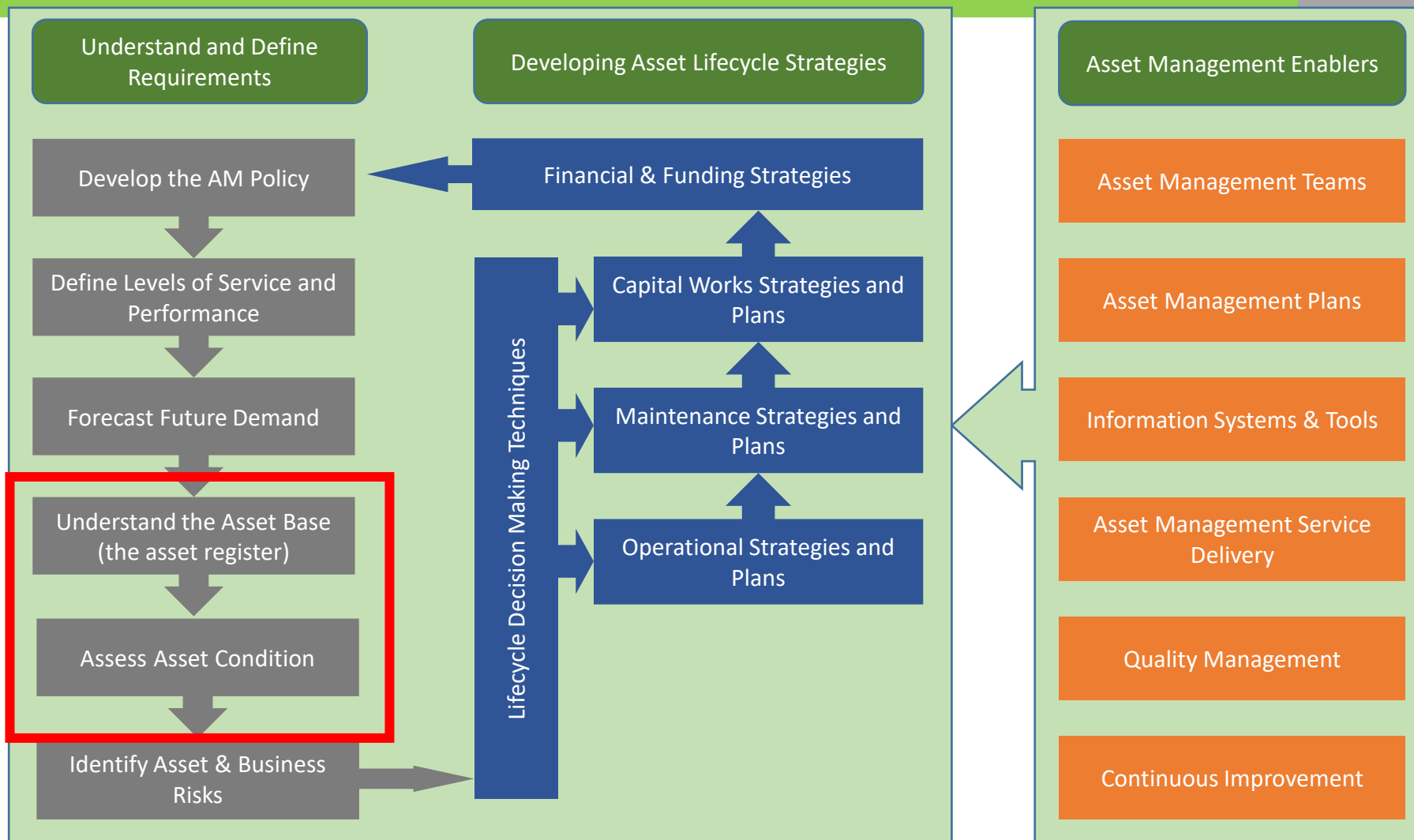
Level of Service	Performance Measure
Responsiveness All requests/complaints to be answered promptly	Percentage of requests to fix road surface faults are completed within the timeframe specified in contracts.
Accessibility: Roads to provide a smooth and comfortable ride quality.	Percentage of sealed roads providing a smooth and comfortable ride. ¹ NAASRA counts are lower than 220 for urban roads and 120 for rural roads
	Percentage of gravel road tests where the roughness scores 90 or less in the Optigrade survey
Safety Footpaths are safe for users – free of overhanging obstructions and free of trip hazards.	Number of footpath complaints
Accessibility To provide an adequate level of streetlighting for safe and efficient movement of vehicles, cyclists and pedestrians	Percentage of residents satisfied with basic lighting levels in urban streets.
Quality Roads to be maintained to an appropriate standard.	Length (or percentage) of the roading network rehabilitated this year compared with targets.
	Area (or percentage) of the roading network resealed this year compared with targets.
Road Safety: Roads and bridges to provide a safe roading network for all users.	Reducing trend in the five year average of number of total injury crashes due to road factors.

Summary

- Defining service levels is at the heart of good RAM
- Assets are there to provide a service
- To the extent practical, need to establish a link between the outward facing customer service levels and the technical performance standards
- Customers are concerned about more than just road roughness
 - Need a spectrum of measures to ensure appropriate coverage
 - Safety, comfort, efficiency, reliability...

Inventory & Condition Data

International Infrastructure Management Manual (IIMM) AM Process



Inventory & Condition Data

- RAM involves the collection, storage and analysis of significant amounts of data
- The data in the asset data systems represent a significant investment by the in time and money
- Asset data are used for a variety of tasks throughout the Agency and its supply chain
 - From justifying funding requests, to allocating funds, to defending legal action.
- Therefore, we need to manage data as an asset in its own right.

What Data Is Needed?

- Asset Register or Inventory (static until a change is made)
 - Unique identifier
 - What type of asset?
 - Where is it?
 - What materials is it made of?
 - When was it Constructed?
- Condition (changes over time and with works)
 - What condition is it in?
- Traffic (changes over time)
 - AADT
 - Axle loading
- Social service location information
 - Schools, hospitals, civil defence etc
- Geographic boundaries
- Other

What About Other Data?

- Emergency events
 - Location, size, duration of flooding
 - Location, size of landslides
 - Location, size, duration of snow storms
- Climate change information
 - Weather station data
- Traffic management information
 - Road closures
 - Approved traffic management plans
- Customer management
- Sometimes data only has a value once you have a time series of it
 - Useful to calibrate prediction models, and also to allocate risks in contracts

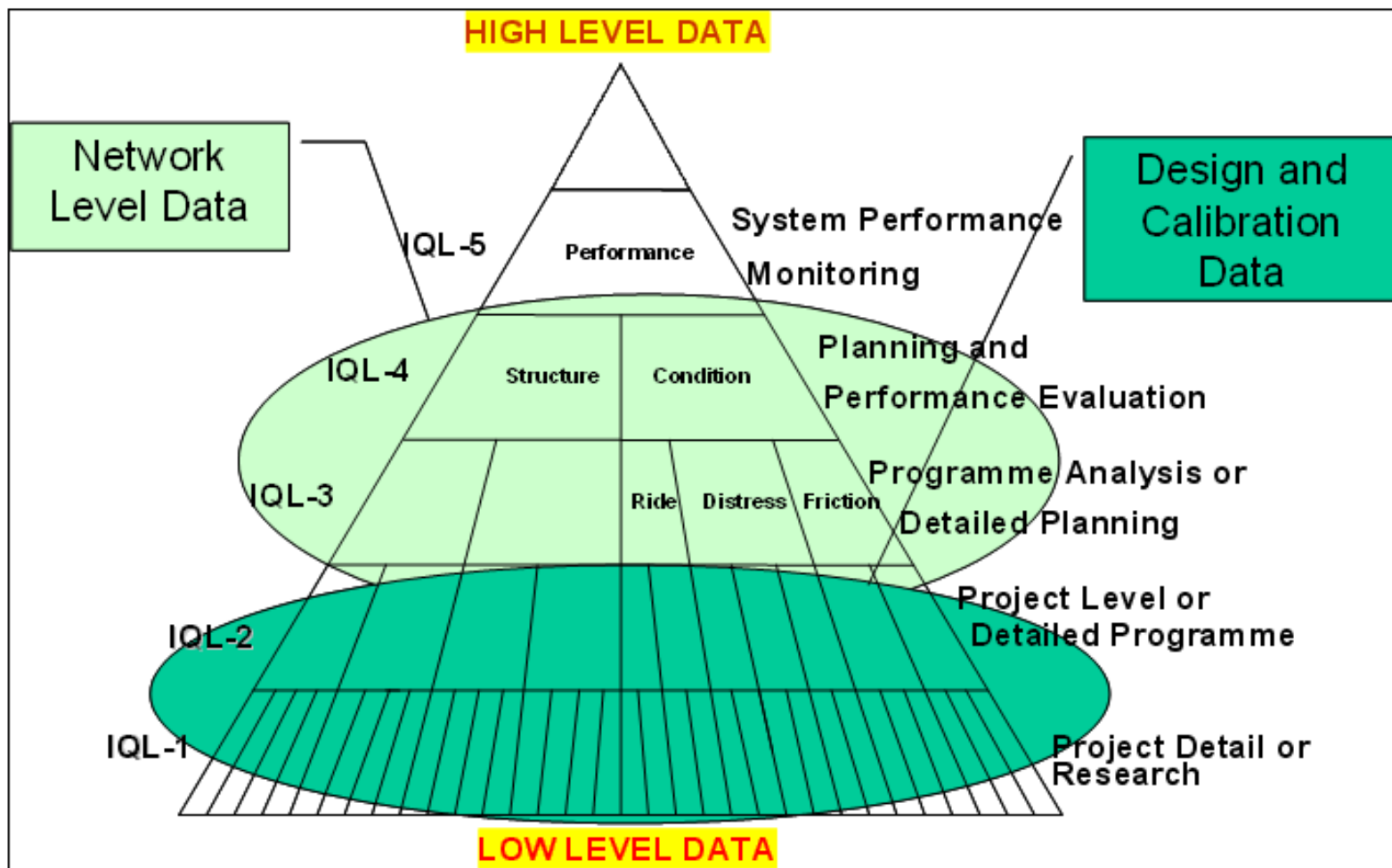
How Good Does Your Data Need to Be?

What is high quality data?

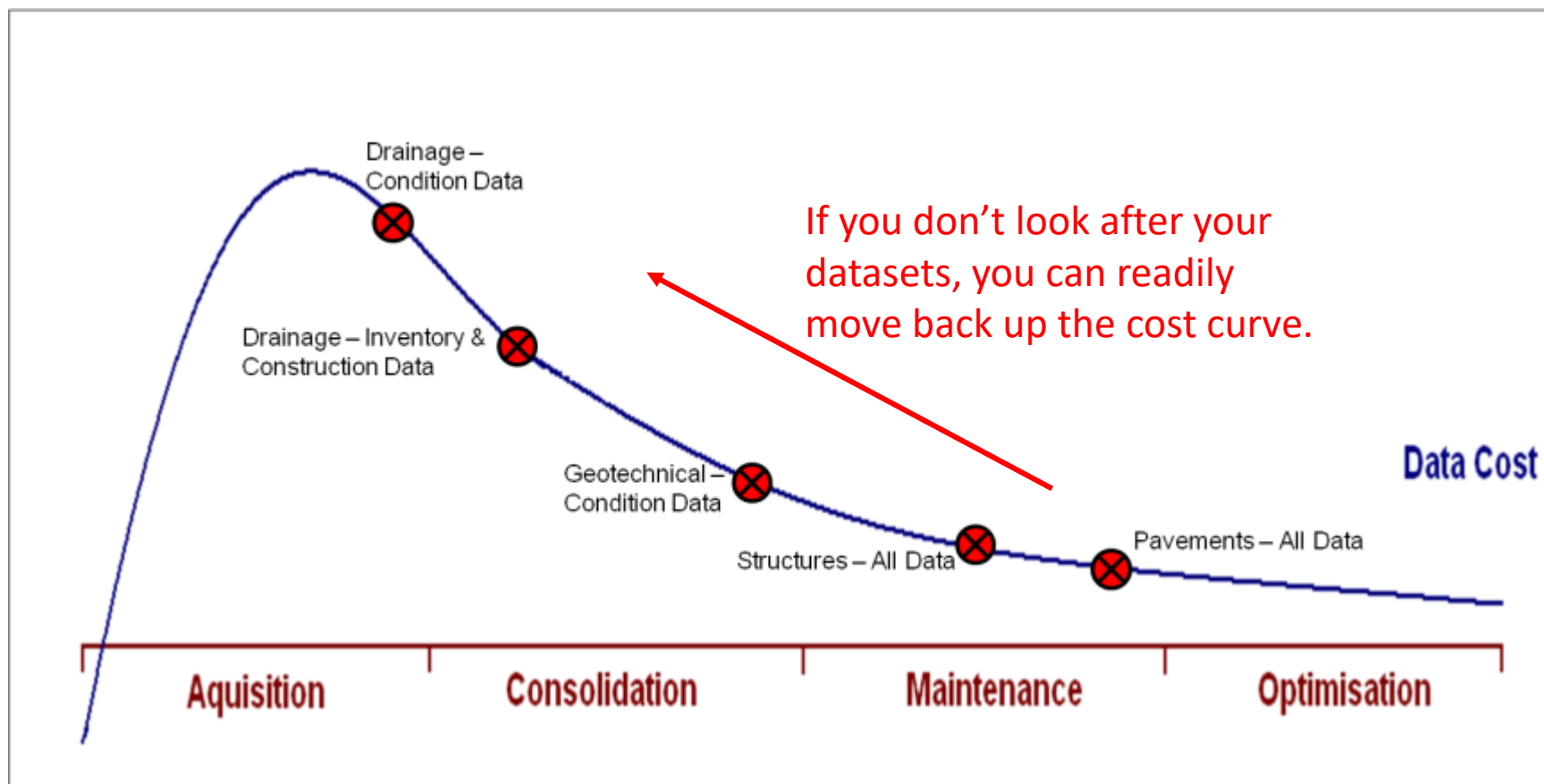
Data are of high quality "if they are fit for their intended uses in operations, decision making and planning"

(J.M. Juran).

Information Quality Level (IQL)



Asset Data Maturity vs Cost Graph



- Data is an important part of RAM
- But it can also be a costly part of RAM
 - Both time and money
 - Easy to lose confidence in data sets, harder to get it back
- Need to consider the IQL of all data sets
- Need a clear governance arrangement around data
 - Manage it as a key asset of the road authority
 - Data standards are essential
- Ensure you are getting as-built data, not just as-built drawings
 - And ensure that data gets into the AMIS