

Road Asset Management (RAM)

Azerbaijan

6-9th September 2022

Refresh on RAM

Dr Ian Greenwood
BE(Civil), PhD(Eng), FEngNZ(Civil), CPEng(NZ)
ian@gaic.nz

RAM is Much More than Road Works



Fixing Potholes!



Dealing with adverse events



And fixing the road when it breaks!



Or addressing climate change



Evolution of RAM

- 1970s
 - Equipment Management
 - Maintenance Management
- 1980s
 - Pavement Management
 - Private Contractors
- 1990s
 - Road Funds
 - Bridge Management
 - Agency Reform
- 2000s
 - Integrated Asset Management Systems
 - Governance
 - Performance Based Contracting
- 2010s
 - Processes and policies (ISO 55000 (2014))
 - Climate resilience

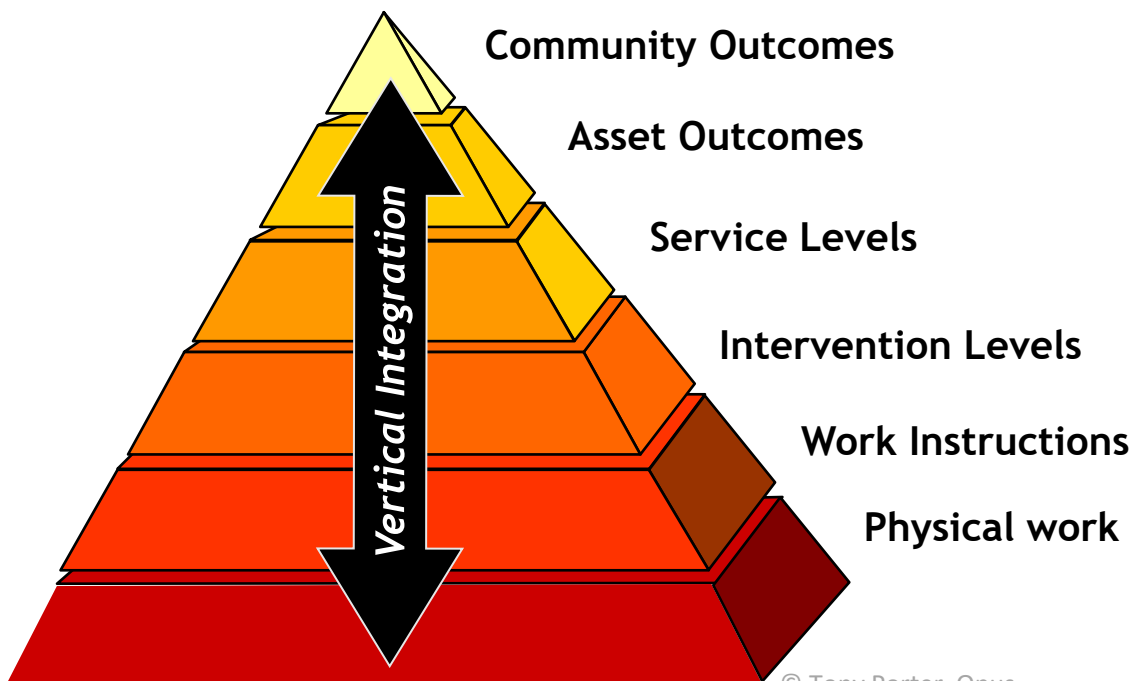
Defining the Level of Service is Critical



One size doesn't fit all – its all about affordability & risk



Asset Management Pyramid



© Tony Porter, Opus

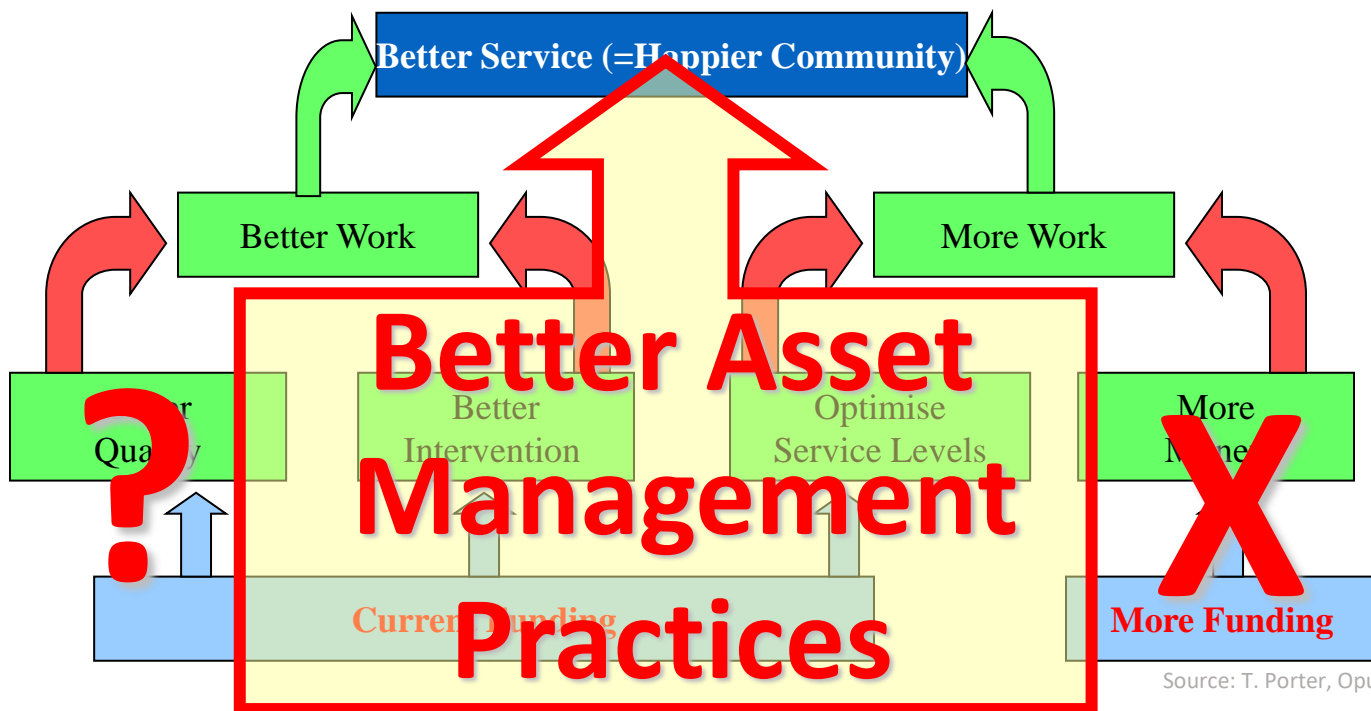
Definitions of Asset Management

- “The combination of management, financial, engineering, economic and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.” (IIMM 2011)
- “A systematic process of operating, maintaining and upgrading transportation assets cost-effectively, by combining engineering practices and analysis with sound business practice and economic theory. Also, the management of the physical infrastructure such as pavements, bridges, and airports, as well as human resources (personnel and knowledge), equipment and materials, and other items of value such as financial capabilities, right-of-way, data, computer systems, methods, technologies, and partners.” (AASHTO)

My Simple Definition

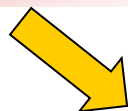
All activities required to define and provide the agreed level of service in the most cost-effective manner for the present and future owners of the asset in a transparent and informed manner.

Extracting the Value



Implementing AM

Doing the Right Thing



At the Right Place

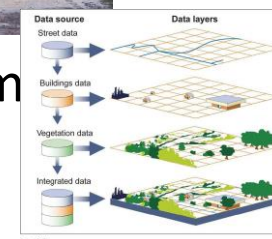


At the Right Time

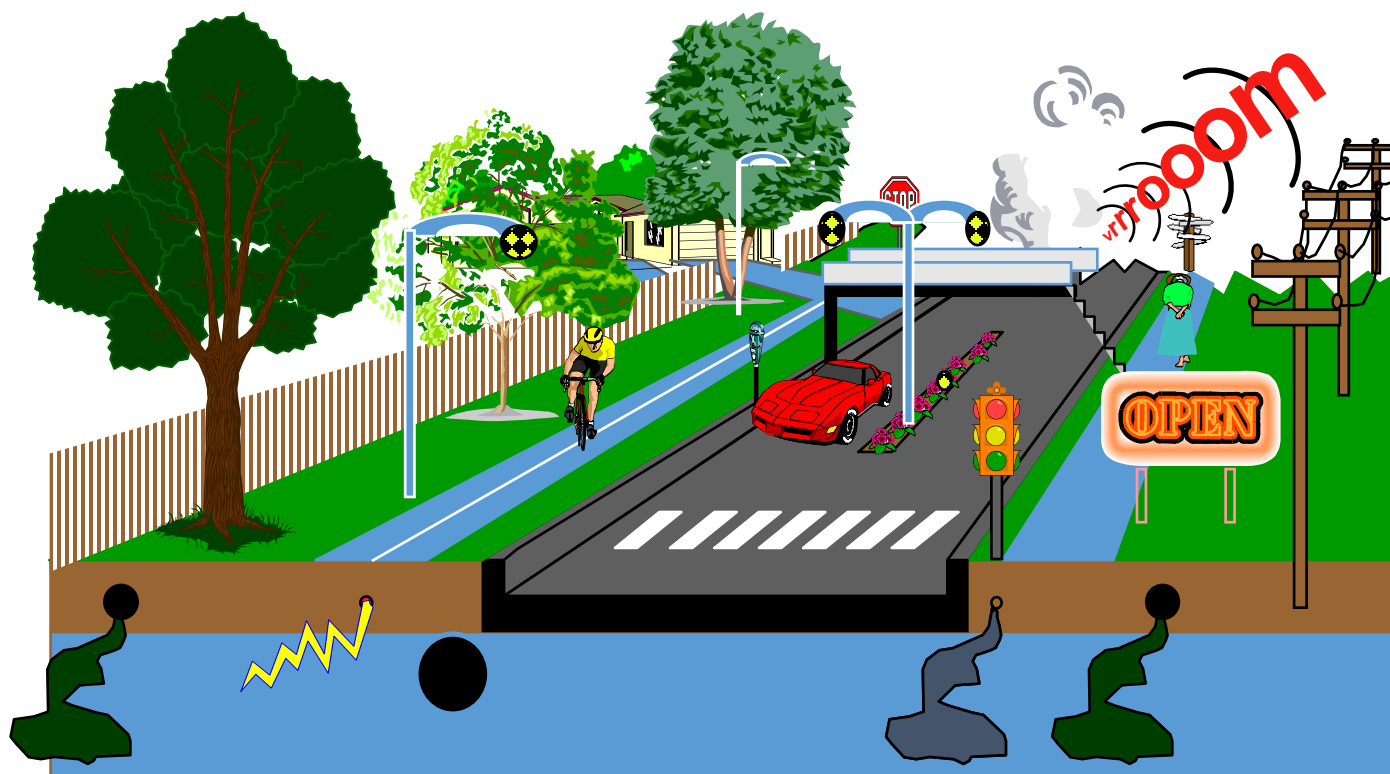
It's About Good Stewardship

What It Isn't (but these are part of RAM)

- Routine or periodic maintenance
- Disaster recovery or climate resilience
- Software solution Asset Management Information System (AMIS)
- Although these are all parts of asset management, by themselves they are not asset management

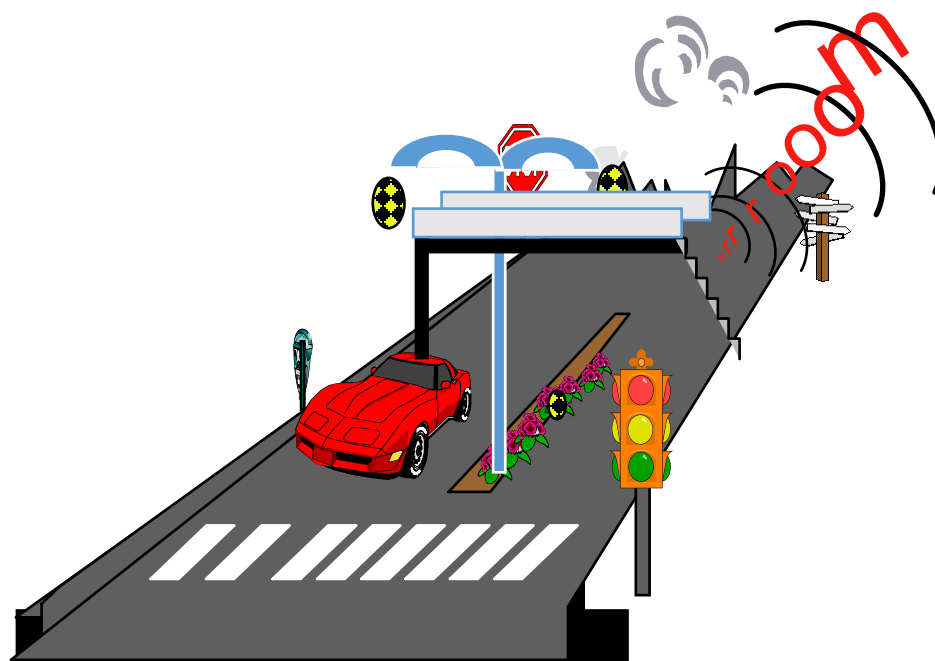


It is important to remember that a Roadway is about 'more than just traffic'



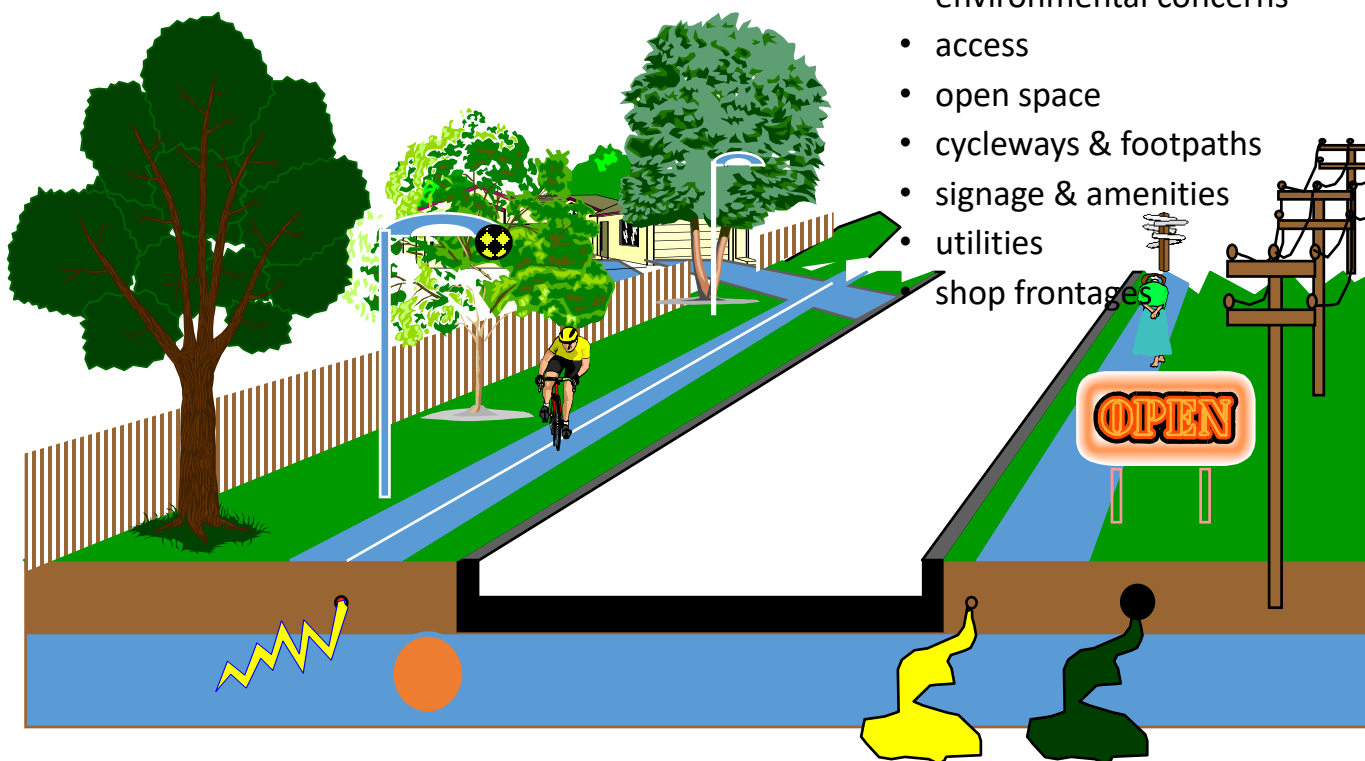
- Physical Assets

- pavement
- street lighting
- crossings
- bridges
- median strip
- traffic controls
- road surface
- slopes
- etc



The roadway “Corridor”

- ‘Public Interests’
 - beautification
 - environmental concerns
 - access
 - open space
 - cycleways & footpaths
 - signage & amenities
 - utilities
 - shop frontages



Many Guidance Documents Available

- My personal favourites (cover all asset types)
 - ISO55000
 - Provides the theoretical structure for asset management
 - International Infrastructure Management Manual (IIMM)
 - Provides practical guidance on how to meet the requirements for asset management
- Road specific guidance from:
 - Austroads
 - Guide to Asset Management (GAM)
 - AASHTO
 - AASHTO Transportation Asset Management Guide: A Focus on Implementation

RAM Provides Answers to

- What do we have?
- What condition is it in?
- What is it worth?
- What do we want it to do?
- What do we need to do to it?
- What risks exist?
- How much will it cost over the long term?
- How will we deliver it?

Are You An Asset Manager or Facility Management?

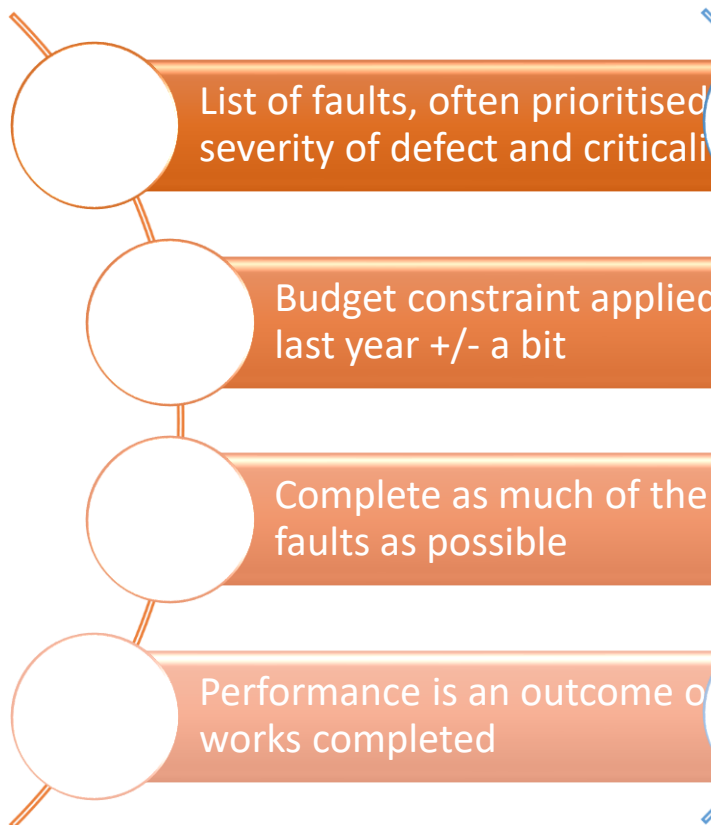
- Many agencies still operate as Facility Managers not Asset Managers

FM - Find faults and fix as many as we can with the budget available

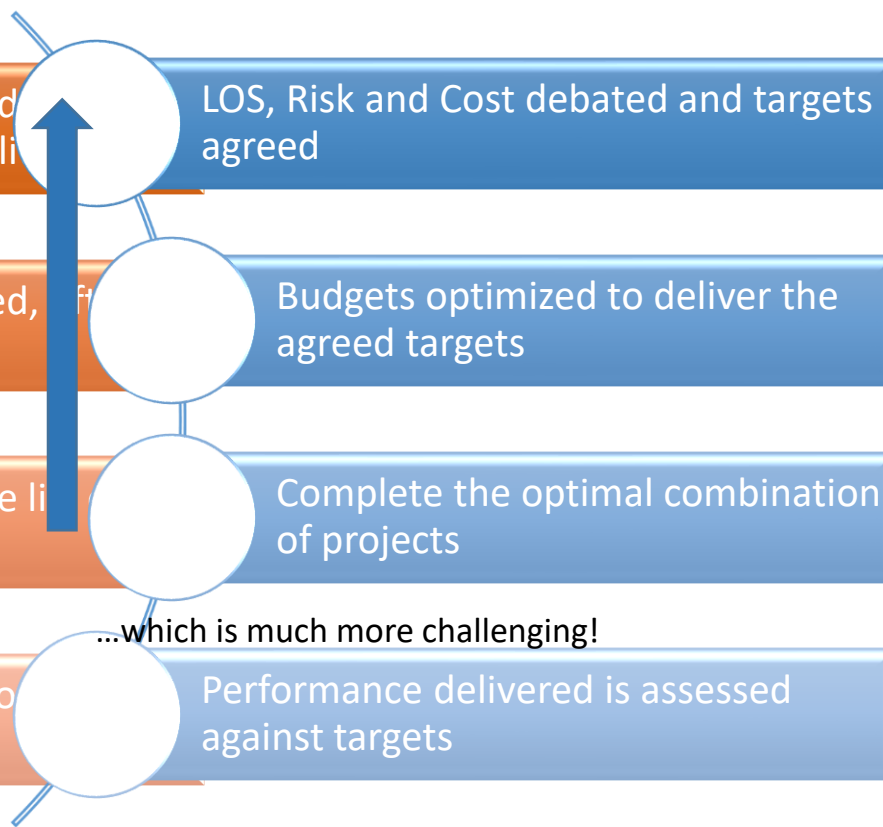
AM - debate and agree the service level and then deliver it for the least possible cost [whole of life costs]

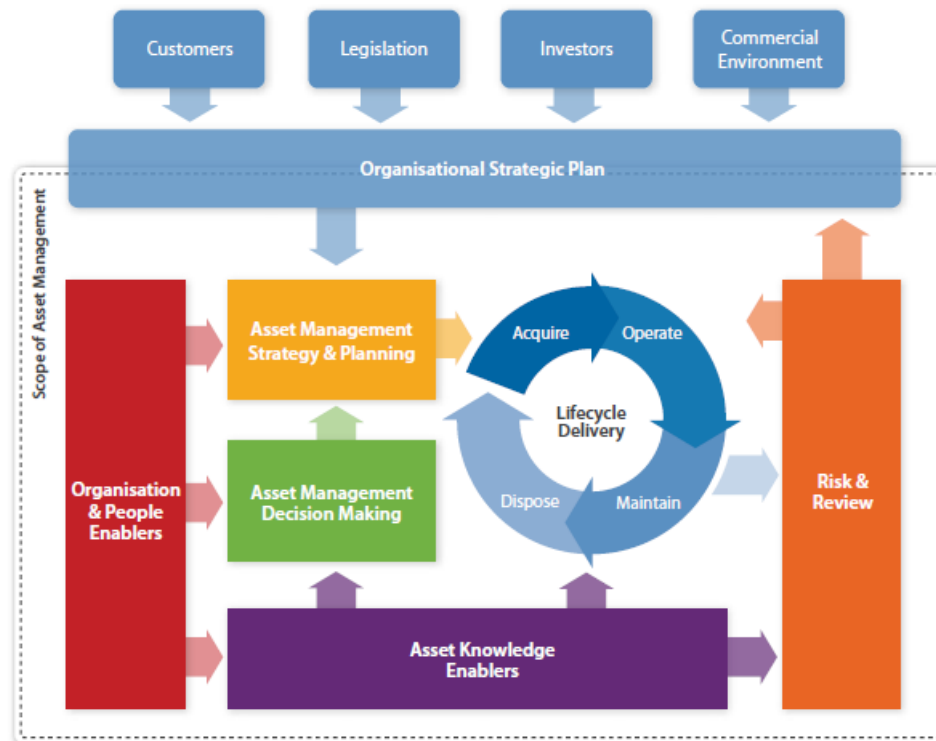
Comparison of Approaches

• Facility/Mtce Management



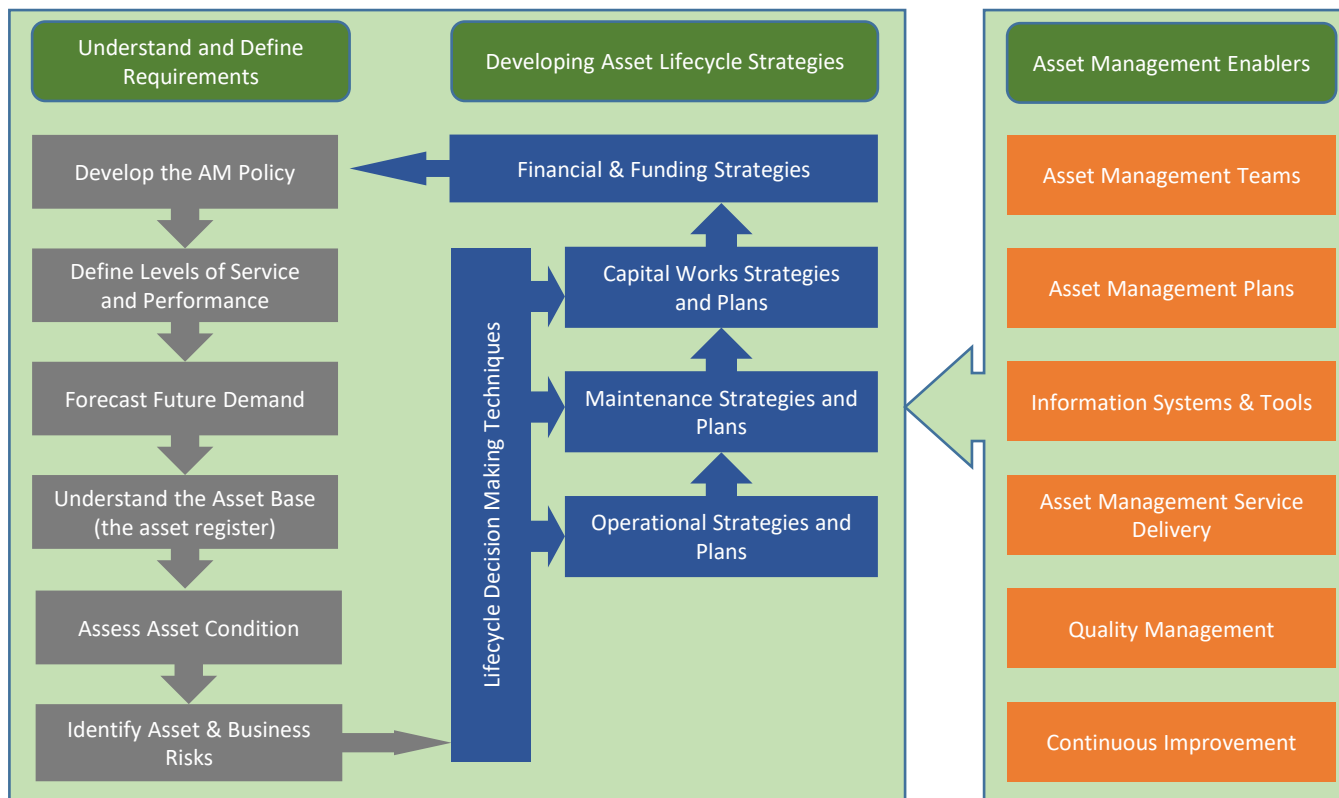
• Asset Management





© Copyright 2011 Institute of Asset Management

International Infrastructure Management Manual (IIMM) AM Process



Same Process, Different Focus

- RAM process can be the same across all road hierarchies, and across all nations
- It is the level of detail that changes within each step of the process
 - A road network in a mountainous region will naturally have a greater focus on the identification and management of risks than a road network in a stable plains region
 - An urban network with high growth will be more concerned about forecasting future demand, than will a low growth rural network
 - High volume national highways will naturally be managed at a greater level of effort than minor country lanes
- Don't change the process, change the level of depth you go into each step of the process

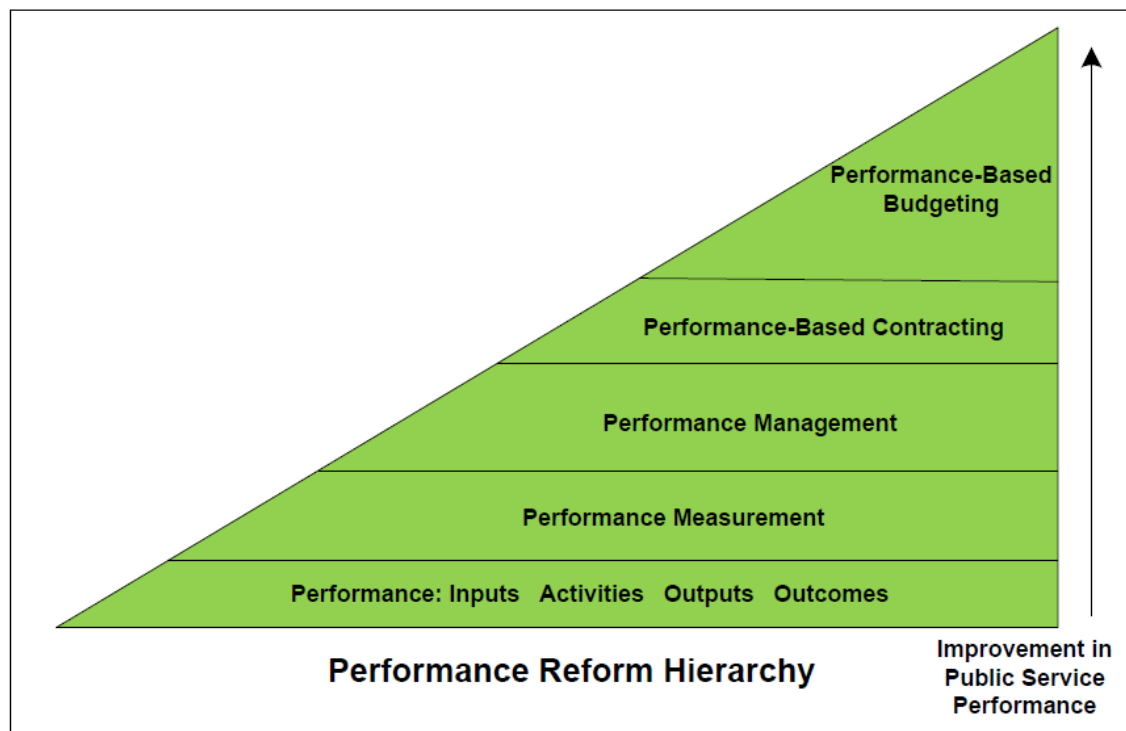
Benefits

- Reduced life-cycle costs
- Defined levels of service
- Ability to track performance
- Improved transparency in decision making
- Ability to predict consequences of funding decisions
- Demonstrated asset custodianship
- Decreased financial, operational and legal risk
- Better financial management
- Better communication
- Fewer surprises going forward

Drivers for improved AM

- Champion – internal drive to do the right thing
- Crisis – Infrastructure or service failure
- Compulsion – Legislation / Policy / Audit
- Funding – Access to funds dependent on having AM

RAM Links with Improving Institutional Performance



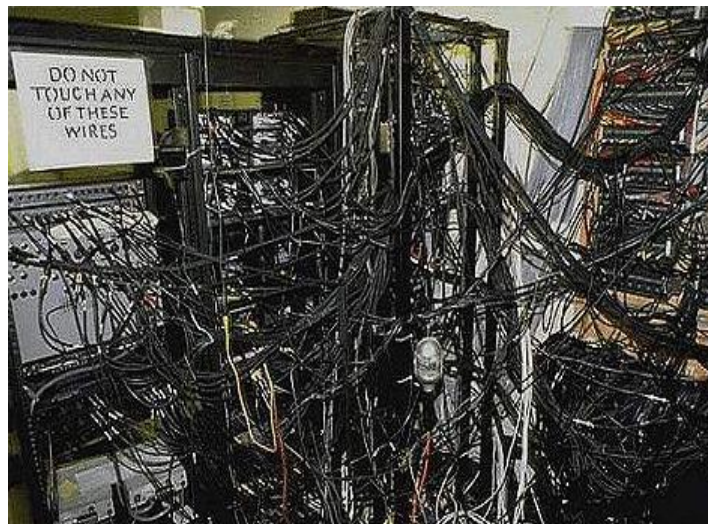
The challenges to getting started...

- Institutional inertia
- Organizational silos
- “It’s an accounting issue”
- Software vs. AM / previous bad IT experience
- “Trust me I know what I’m doing”
- Lack of corporate buy in / clear leadership
- Lack of time / training / competency
- Data deficiencies
- Ribbon cutting syndrome
- Desire to muddle / interfere in others business

- Focus on improved understanding and funding of performance/level of service
 - Money is always tight, so need to ensure getting best value!
- Clients recognise the value of data and the costs to collect and maintain it
 - Integrated data systems
 - GIS
- Recognition of the role that performance based contracting can play in driving improved AM
- Increasing use of maturity assessments to understand capability, although not always associated with a commitment to achieve a given standard.

- Start with core functions
- Start simple, with something that is sustainable for your road authority
 - Focus on those asset groups that are either high value or high risk
 - Collect only the information that is necessary, not everything you can
- It is easier to add complexity in 5 years time, than it is to simplify a complex system that isn't sustainable
- Single asset management process for all roads, but the level of complexity in each step of the process will normally vary by road class

- Starting Out...
 - Document where you are
 - Current practices and policies
 - Looking at changes to move forward
 - Understanding the gaps
 - Plan for the future

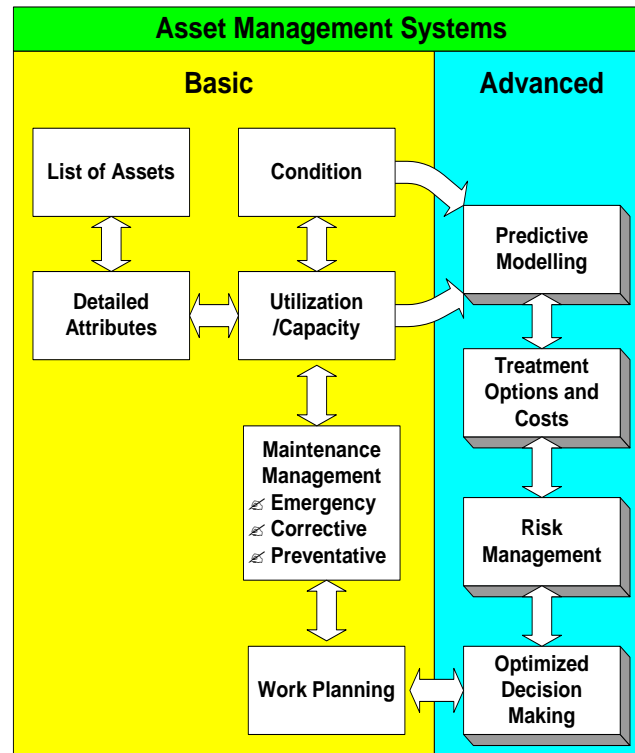


- Manageable Chunks

- Incremental
- Achievable
- Asset specific
- Pilot area



Adopt Appropriate Approach



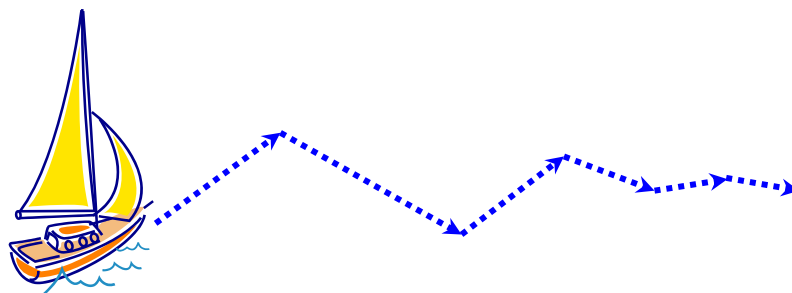
Implementing AM

- Can be a Bumpy Ride

- People changes
- Leadership
- Organizational
- Complacency
- Loss of Focus



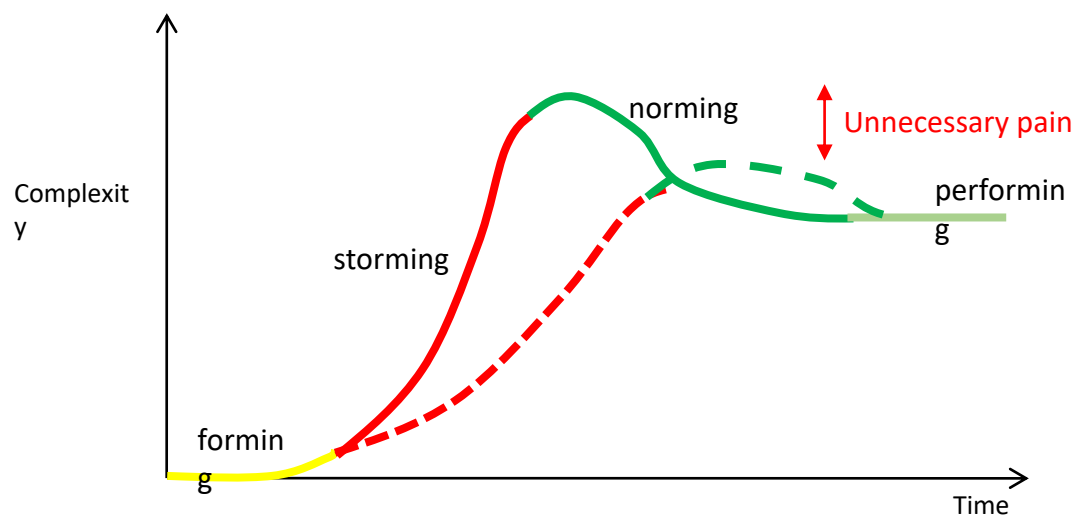
- Requires Course Corrections



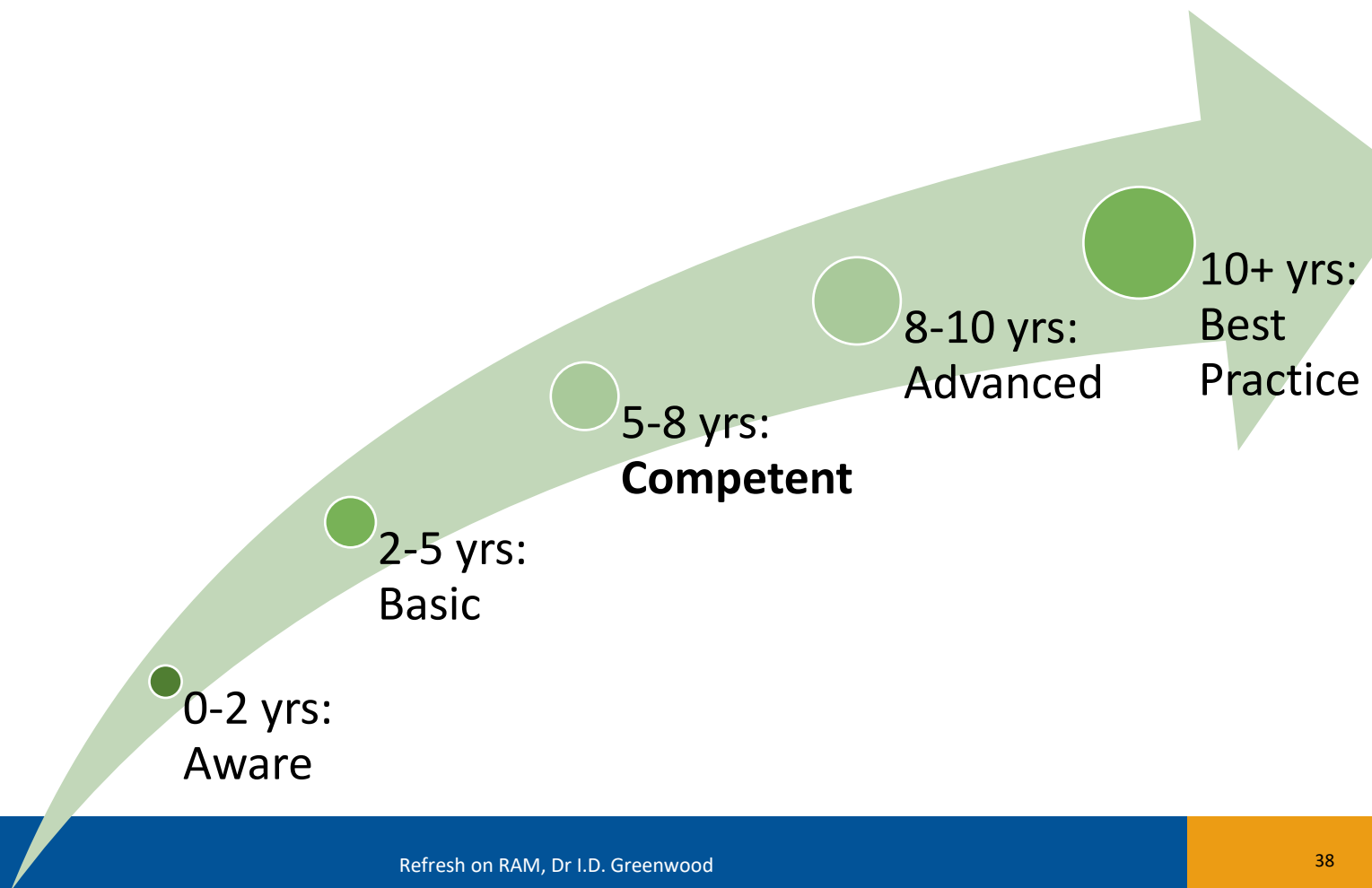
Implementing RAM Takes Time

- Need to do the groundwork, before any improvements can start
- Start now!
- Write down your assumptions
- Next year's asset management plan will definitely be better
- Work on addressing the assumptions over time

- Avoid being over complicated and over use of excessive temporary resources
 - Make RAM your 'business as usual'
 - Avoid unnecessary pain



Indicative Timeline



1. RAM is a business process, linking all activities back to the level of service you are seeking to deliver
2. While the focus on different parts of the process will vary between road authorities, the process itself can remain constant
3. The better you are at RAM, the more value you can get from each dollar you put into the system
4. RAM Maturity Assessment can help identify gaps and develop improvement actions
5. Start out simple, add complexity to RAM only when absolutely necessary
6. Good RAM is a marathon, not a sprint.



Questions

Dr Ian Greenwood

Greenwood Associates Infrastructure Consultants

ian@gaic.nz