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Road maintenance delivery in Australasia: Progress and challenges after a decade of change

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Advancing safety and efficiency in transport through knowledge

Scope

- Road Maintenance Delivery Models and the Australian and NZ experience, covering
 - Traditional Contracts
 - Performance Based Contracts
 - Evolution to Relationship Based Contracts
- Fundamental need to emphasise:
 - The importance of Maintenance & Preservation
 - Obligations of the 'Owner'
 - The role and scope of Asset Management
- Audit findings and improvement actions
- Lessons for Africa

Australian Road Maintenance Sector

- Road maintenance is one of the largest maintenance sectors
- Approx \$5 billion per annum in 2007/08
- Private sector share > \$2 billion per annum
- Major purchasers are the State Road Authorities
- Local Government roads make up most of the network and funding is more stable but fluctuates with the level of grants
- Arrangements for road maintenance delivery has been in an ongoing process of evolution

Australian Road Maintenance Delivery

- Arrangements vary considerably
- Private sector more successful in obtaining work on National Highways
- Federal Government has encouraged competitive tendering and an increased contract percentage
- Local roads generally have lowest rate of contracting out due to
 - local social reasons
 - small size of packages (and remoteness)
- Significant exceptions exist, i.e. **one size does not fit all**

Original drivers and context

- Improve effectiveness and efficiency of road maintenance
- How important is the introduction of contract road maintenance compared with:
 - securing stable funds?
 - knowing your network needs and how much it costs to maintain?
 - having defined standards and work practices which are consistently applied?
 - using the correct technology?
 - quality
 - improving overall efficiency and cost awareness?
 - good governance
 - having capable resources?
 - **being an informed Owner or Client?**

Maintenance Considerations

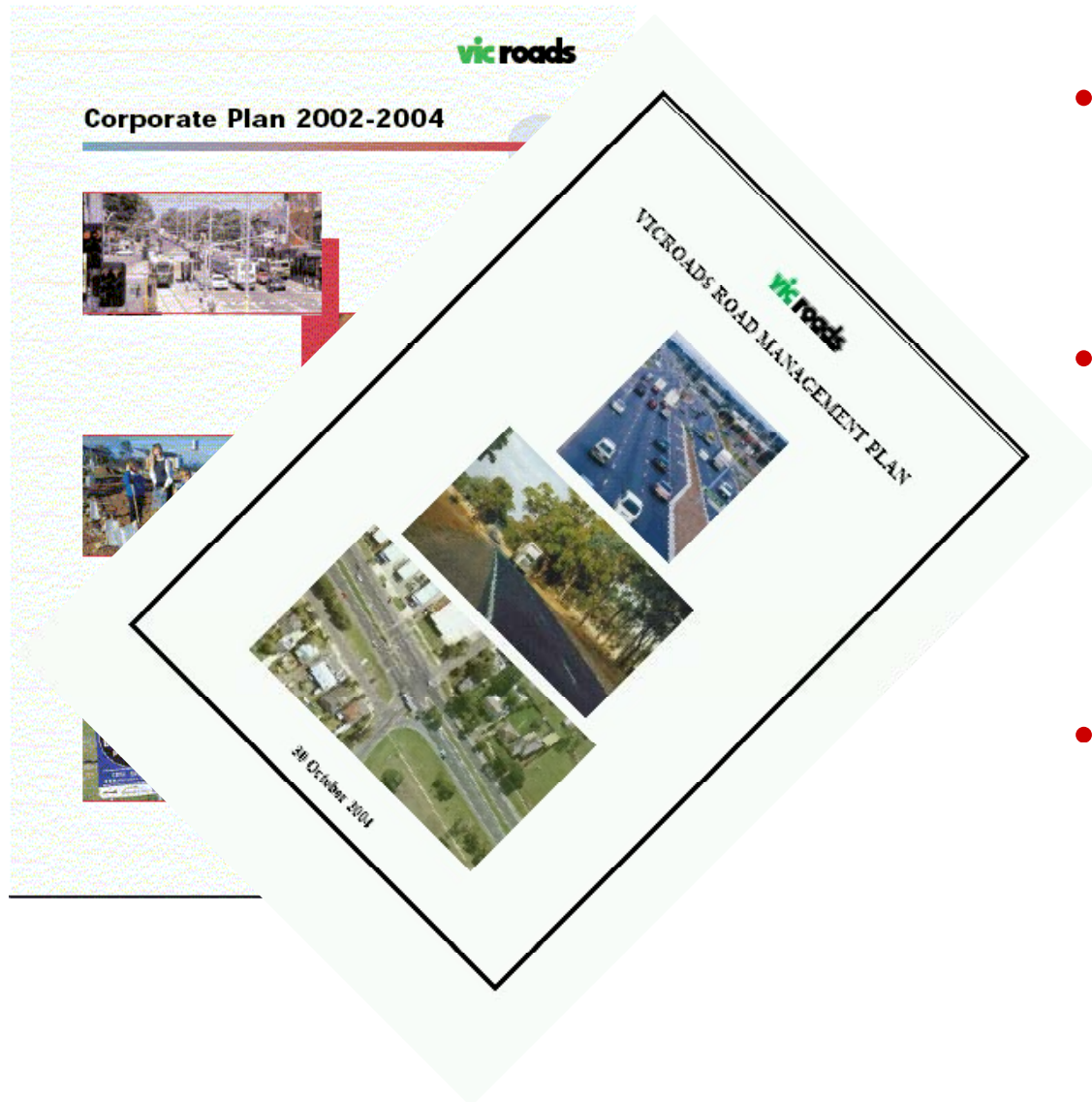
- Effective and timely maintenance crucial to safety, efficiency and retained value
- Maintenance should be:
 - a regular process not a random event
 - preventative, not reactive
 - responsive to repair defects within a prescribed time frame
- Studies have shown that typically:
 - the economic return very high, 40% to 100%
 - by comparison the economic return on new work is often only 8 - 20%, i.e. marginal

Road Management in Australia

- In Australia a landmark court decision in 2001 followed by legislation in Victoria in 2004
- Road Authorities must take measures to maintain roads in a reasonable and safe condition
- By law they must keep an inventory of public roads
- They must regularly monitor condition and set intervention levels
- They must maintain the roads within the intervention levels
- They must budget sufficient reasonable funds to do this.

Message: The Owner cannot relinquish responsibility

Road management plans



- Road infrastructure management system
- Road maintenance standards
 - Define hazards
 - Inspect
 - Response times
- Program development guidelines

What WA State Treasury wants to see in Asset Maintenance Planning

1. Review of current programs, and quantification of needs
2. Use of a risk management approach
3. Prioritisation of identified tasks
4. Defining a tolerable level of deferred maintenance
5. Identifying minimum resource needs for 4.
6. Presentation of a comprehensive plan

Is this any different from expected?

ORGANISATIONAL APPROACH

Traditional
in-house

OWNER

ADMINISTRATION

MANAGER

SERVICE PROVIDER

Outsourced
service provision

SERVICE PROVIDER

Outsourced
management and
service provision

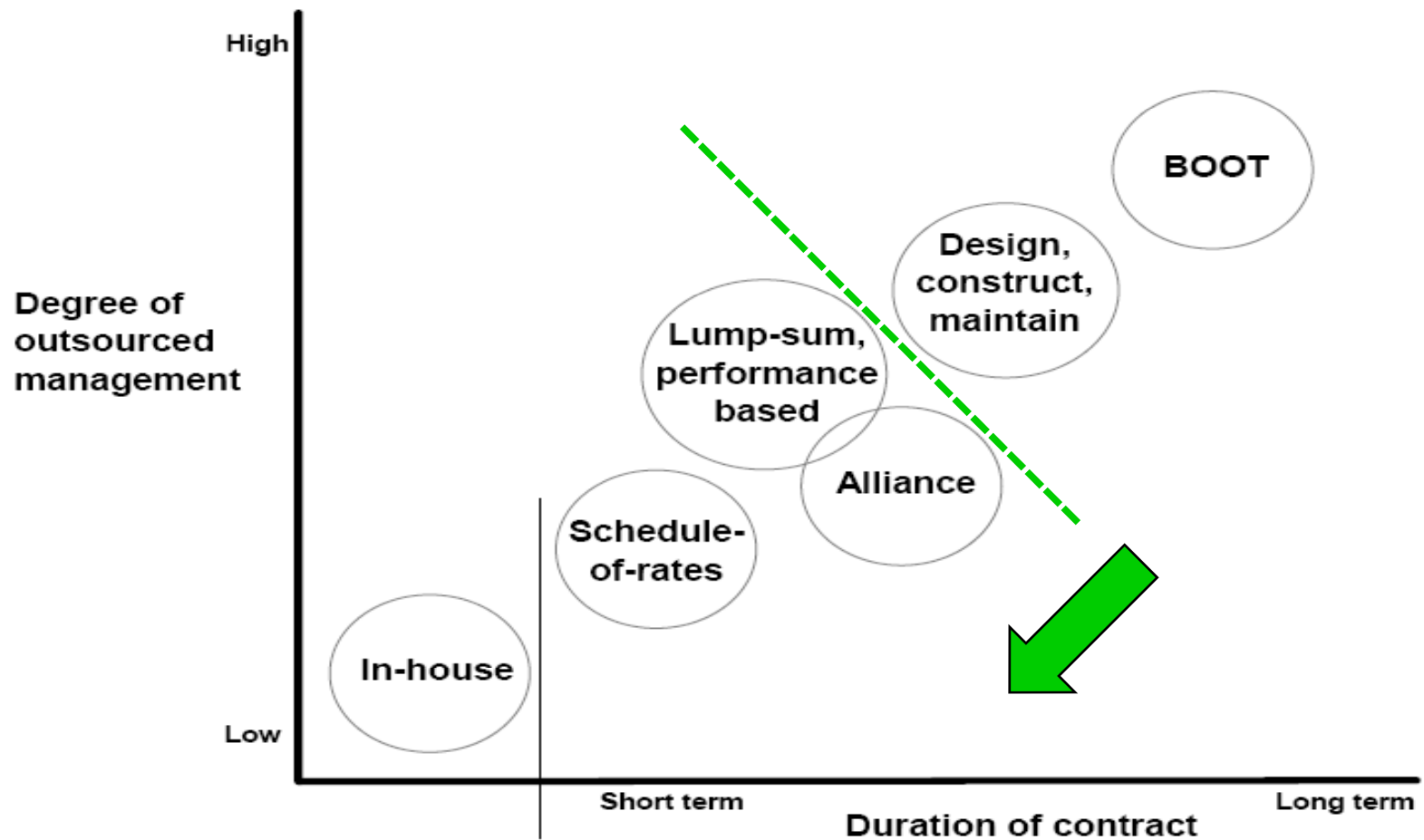
MANAGER

SERVICE PROVIDER

What additional roles are required?

The Situation in 2006

Spectrum of Types of Road Maintenance Contracts



Source: BIS Shrapnel 2006

Outcome/Performance Based Contracts in Australia and New Zealand (10 years 2000 - 2010)

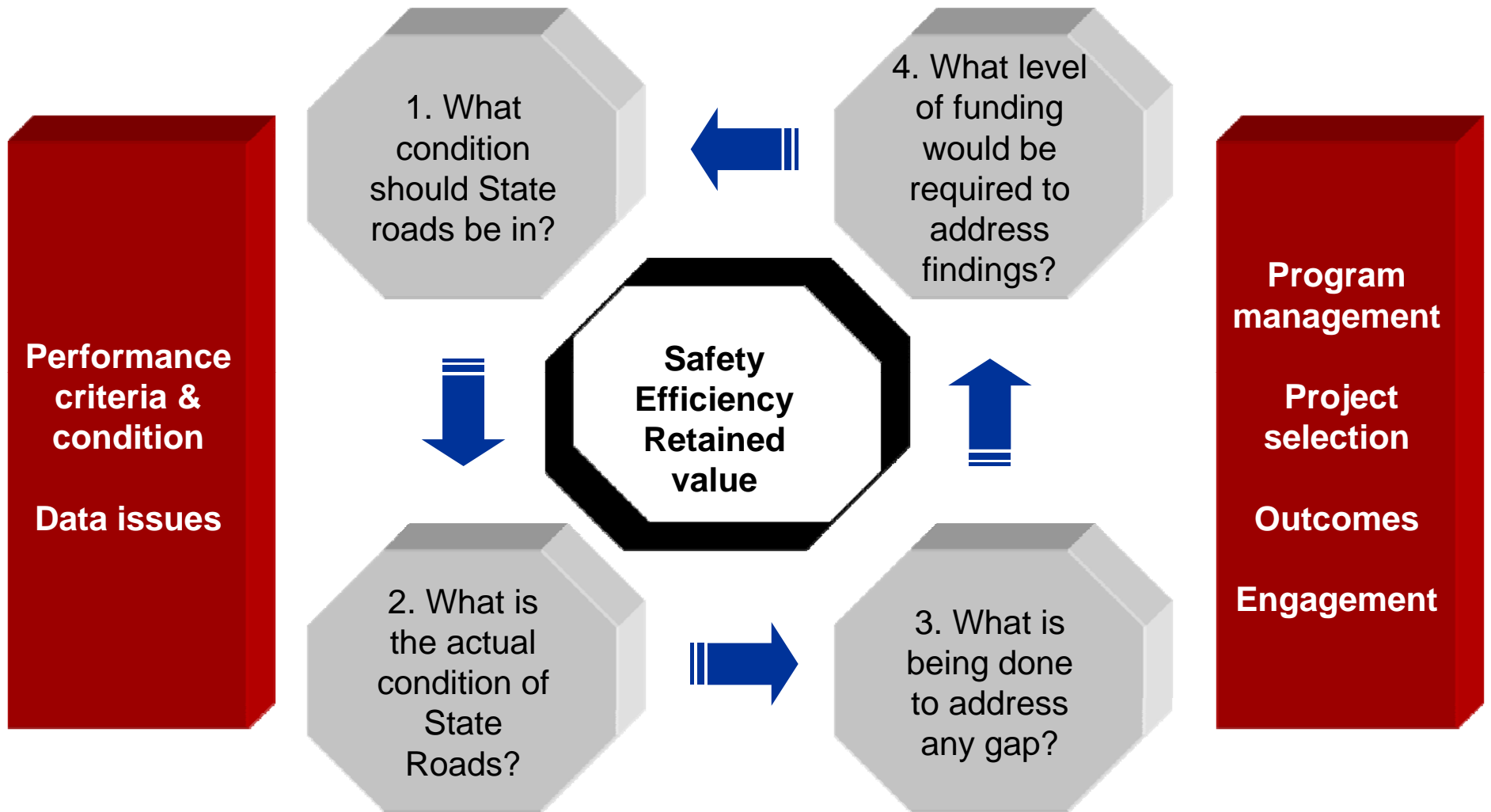
RTA NSW	1 fully outcome driven (re-let 2008)
DIER Tasmania	1 fully outcome driven (now complete)
MRWA	6 fully outcome driven and 2 mixed (All completed by 2010)
Victoria	1 alliance (in procurement)
Transit NZ	3 fully outcome driven, 1 alliance 7 mixed (hybrid)

But this is changing

The Challenge: Contractual obligations vs expectations

- There is a distinction between the two
- Reasons include details of the contracts and the interpretation of the parties
- The cultural difference in perception between government department clients and private enterprise service providers was underestimated
- Some targets set as performance measures were abandoned
- Appropriate pricing is still a major factor influencing a successful outcome

Typical audit structure



Pavements, Configuration & Bridges

Typical findings: Significant deficiencies

- Performance indicators
- Roadside risks
- Costs and benefits
- Recurrent maintenance of new projects
- Road maintenance contracts
- Enquiry tracking
 - Public good versus utility
 - Jurisdictional responsibility
 - Standards
 - Maintainability
 - Performance measurement
- Condition and funding gap
- Improved methods & systems
- Deferred rebuilding
- Advice to stakeholders
- Loss of network knowledge and management control
- Critical data gaps
- Risk of significant asset consumption
- Mismatch of funding and desirable outcomes
- Upstream communications of needs

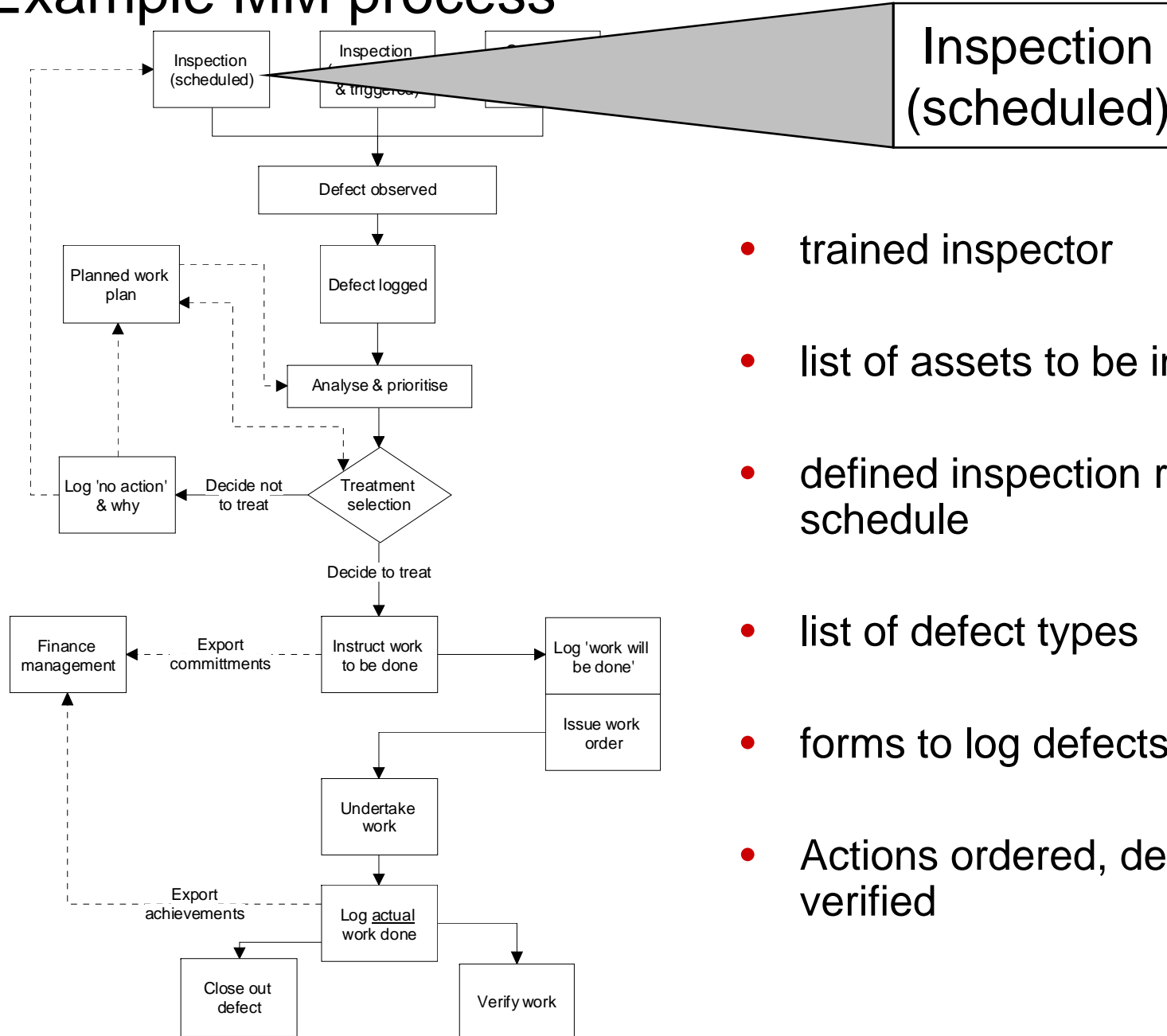
Example Lessons Learnt ⇨ Critical Success Factors – from WA

- Strategic Alignment - align with strategic objectives
- Risk - allocated to best party
- Asset Management - Owner influence
- Sustainability - deliver services and return a profit
- People & Management - understanding objectives & targets
- Certainty - certainty of outcome for all parties
- Processes & Systems - aligned and integrated
- Flexibility - readily adapt to change, grow, mature
- Effectiveness – innovation and performance

Main Roads WA: Rebuilding capacity in AM

- Rebuilding corporate memory and informed client status due to downsizing and outsourcing in 1990's
- Agreed Asset Management Accountability Framework
 - Regional functions
 - Regional practitioners and Centre of Expertise
- Regional role in planning, programming and implementation
 - primary responsibilities
 - robust business cases, charters and management plans
 - Coordination of regional needs and investment plans
- Establish Community of Practitioners
- State wide Maintenance Management process & tools

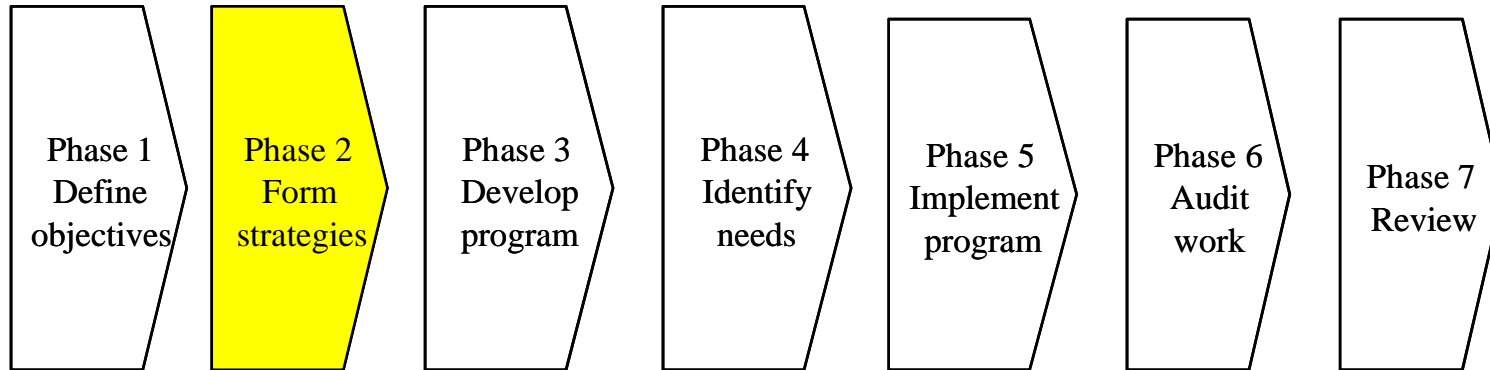
Example MM process



Inspection (scheduled)

- trained inspector
- list of assets to be inspected
- defined inspection route and schedule
- list of defect types
- forms to log defects
- Actions ordered, delivered and verified

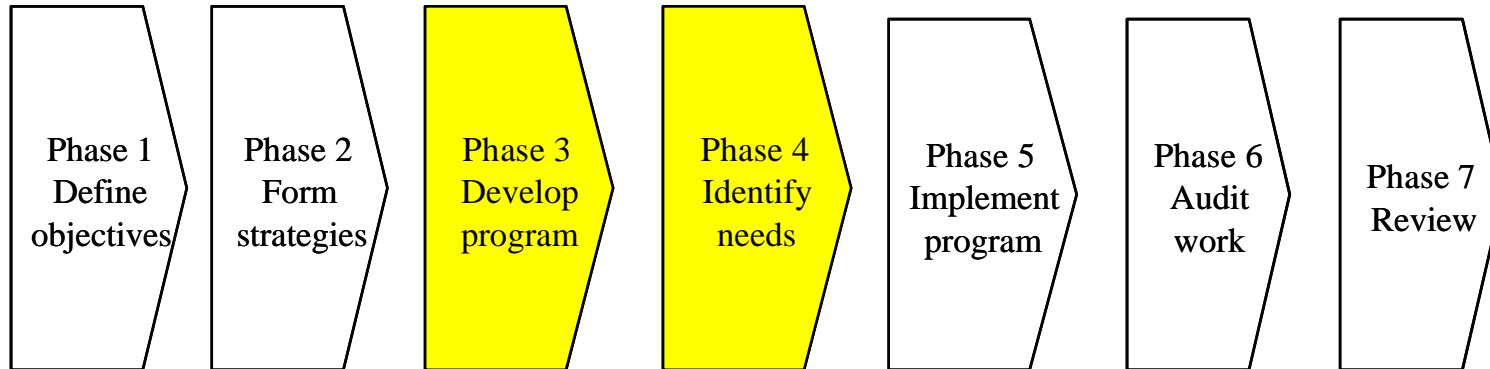
OAM framework: Primary responsibilities



Strategic asset management

Responsibility	Undertaken by	
	COEOAM	Region
Asset maintenance strategy	✓	
Asset maintenance guidelines & plans	✓	
Asset link, corridor & regional network plans/processes		✓
Construction and cost data		✓

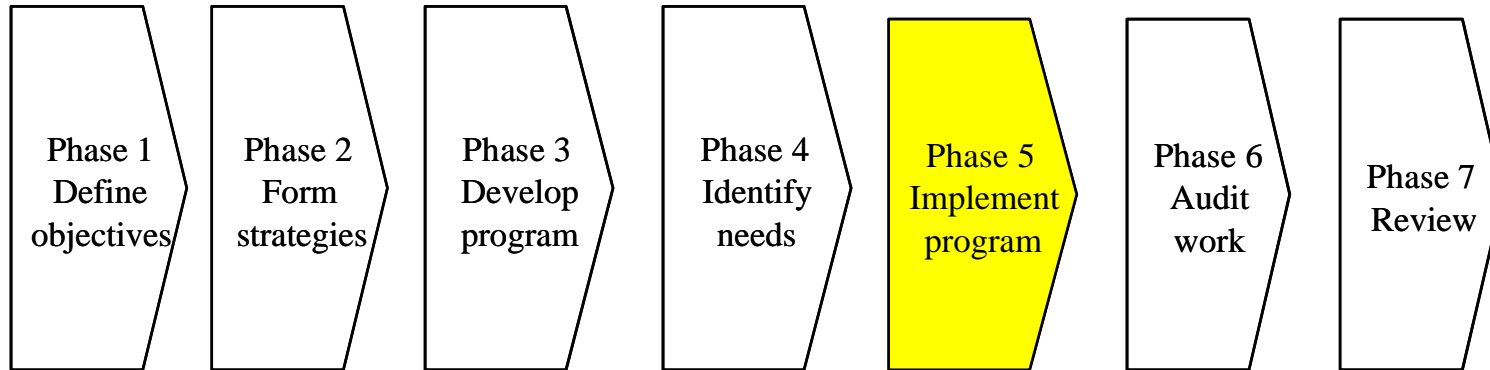
OAM framework: Primary responsibilities



Tactical planning and programming

Responsibility	Undertaken by	
	COEOAM	Region
Gap analysis (road level)		✓
Options analysis, WOLCC solutions & business cases		✓
Optimisation & prioritisation (inc. risk management)		✓
Modelling & candidate section selection		✓
Annual maintenance program develop to optimise RMIPs		✓
Documentation of priorities & revised asset LOS		✓

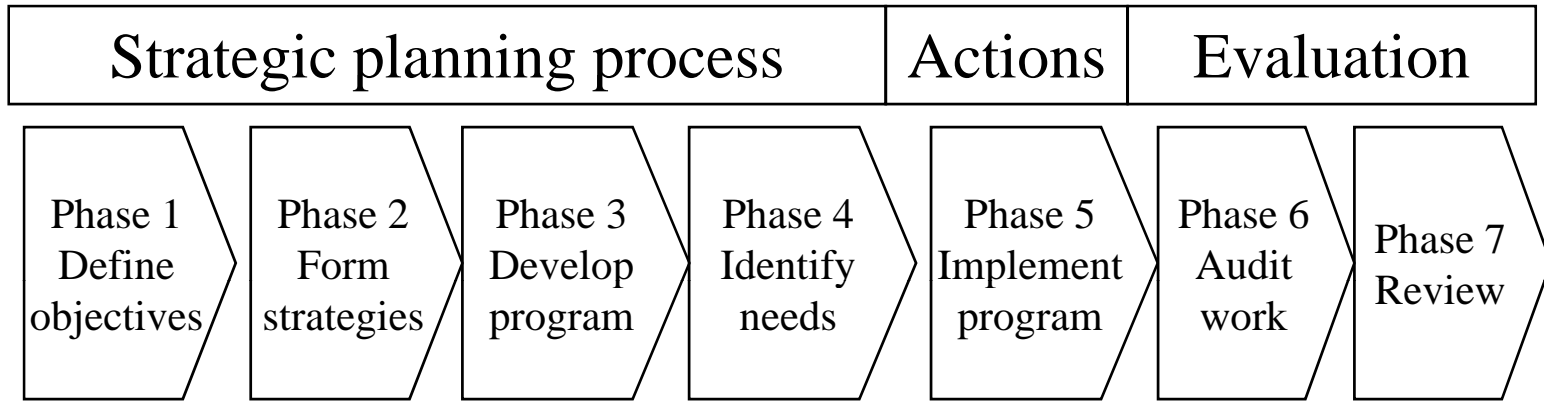
OAM framework: Primary responsibilities



Program implementation

Responsibility	Undertaken by	
	COEOAM	Region
Define and scope projects		✓
Project management plans		✓
Project delivery		✓
Handover and records		✓
Deliver urgent works		✓
Annual maintenance program plan and delivery		✓

Integrated AM Phases – How strong are you.....?



	1	2	3	4	5	6	7
Safety							
Efficiency							
Retained value							
Systems							
HR							
Finance							
Relationships							

Lessons for Africa: Concluding remarks

1. Approaches differ and success varies – one size does not fit all
2. Loss of client knowledge is a major risk, and benefits exist from use of a variety of models and a gradual approach
3. Greatest benefits come from a better and more effective Owner-Manager-Contractor split and good relationships, with high competence amongst all parties
4. Nature of long term contracts is changing towards partnerships
5. Better asset knowledge, including future performance, is essential for risks to be transferred fairly and to optimise performance
6. Ensure quality

Pole - Pole

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