Main Roads WA AM Journey,
Lessons Learnt

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Putting your assets on the right track
Presentation will cover:

• Focus on AM Enablers
• Main Roads WA at a glance
• AM journey through two generations of contracts, and
• Lessons learnt (with a focus on Enablers)
The focus is on AM enablers
(source: Main Roads WA, AM Maturity Assessment, Sept 2015)
Main Roads WA at a Glance

Population: 2,352,215
Land Area: 2,532,231km²
State and National Roads: 19,000km
1000 bridges
Local Government: 131,000km

Asset Value: $40b
Total Budget: over $900m
Maintenance: $230m
Federal and state funding

Ageing network, 45% of pavements older than the design life

Large number of timber bridges reaching design life in the next 5 yrs

$800m in Deferred Maintenance

Population and freight growth

Traffic congestion in Perth
Main Roads WA at a Glance

Organisational Structure
- *Asset creation/Infrastructur**e Delivery/Major Projects
- *Maintenance and Network Management*
- *Demand Management/Network Operations*
- Finance, Budgeting and Programming
- Planning and Technical Services
- Technology: IT, ICT, support of corporate systems
- Heavy Vehicles Directorate
- Human Resources

8 regions, central coordination
AM Guidance in Australia (road context)

Austroads, Asset Management Program

- 1st AM framework 1994
- Integrated Asset Management Guidelines, 2002
- Austroads Guide to AM, 7 parts
  - Part 1: Introduction to asset management, 2nd edn, AGAM01/2009
  - Part 2: Community and stakeholder requirements, AGAM02/2009
  - Part 3: Asset strategies, AGAM03/2009
  - Part 4: Program development and implementation, AGAM04/2009
  - Part 5: Pavement performance, AGAM05/2009
  - Part 6: Bridge performance, AGAM06/2009
  - Part 7: Road-related assets performance, AGAM07/09
Organisation’s vision, mission and goals (Section 2.1)

AM policies (Section 2.3)

AM strategies (Section 2.4)

AM plans (Section 2.5)

Delivery of AM plans (Section 2.6)

Performance monitoring, review and feedback (Section 2.7)

Plan

Do

Act

Check

Continuous improvement

Asset Creation

Asset Maintenance

Asset Operations

Asset Improvements

Asset Replacement and Disposal
### Organisation and business processes

- Governance and delegation authority
- Training
- Competencies
- Communication
- Documentation and procedure
- Management of change
- Innovation
- Research and development
- Business plans
- Training
- Documentation and procedure
- Management of change
- Innovation
- Research and development
- Business plans

### Government transport policy (plans)

- Legal, funding and other considerations
- Asset management (AM) policies
- Asset Management strategies
- Strategic AM plans (long term, e.g. 10 years)
- Annual AM plans
- Delivery of plans

- AM principles
- Legal and statutory requirements
- Continual improvement
- AM activities
- Delivery mechanisms

- AM objectives
- Current asset stock
- Maintenance and operation costs
- Asset Renewal
- Level-of-service and performance targets
- Needs identification
- Asset inventory and condition
- Failure modes
- Risk assessment model and contingency planning
- Whole-of-life cost models, optimisation and prioritisation methods
- Budgets and programs

- Capital
- Improvements
- Maintenance
- Network operations
- Asset replacement

### Continuous improvement

- Stakeholder expectations
- Performance monitoring, review and feedback
- Audits
- Evaluation of compliance
- Improvement actions
- Records

- Performance and condition monitoring
- Investigation of non-conformance and failure
MRWA AM Context

- Prior to the Term Maintenance Contracts (TNC) - full AM function
- During TNCs - AM contracted out
- After TNCs a new generation of Integrated Service Agreements (ISAs) - AM in house
MRWA AM Enablers Status (prior to TNCs)

Formally adopted and implemented AM in 1998

- **AM documentation, processes:** AM Strategy, AM Framework, LOS and Investigatory Criteria, Road Categories, Strategic links *etc* developed and implemented
- **AM Accountability Framework:** Lead Branch, AM Steering Committee, interfaces mapped
- **Corporate Information Systems:** Asset Inventory, Condition and Demand; Program Management
- **AM skills and competencies:** JRS, competencies developed, staff included engineer, statisticians, modelling, accountants, *etc*
- **AM Training programs**
- 3rd party certification in 2000 and 2003 for Head Office and Regions
MRWA AM Enablers during TNCs

Maintenance and improvements planning and delivery contracted out in 2003 for 10 yrs

- Loss of *skills and competencies* in road design, structures, materials engineering, maintenance and construction practice
- *AM documentation* lost its relevance
- Actual *accountabilities* and AM functions not reflecting the documentation
- Some *corporate systems* utilised only partially
- Other corporate systems replaced: each contractor had its own (e.g. 10 Y Maintenance Plan; Financial System)
MRWA AM Enablers during TNCs cont.

- Main Roads staff – a sense of disempowerment, loss of control, not feeling as asset owners anymore
- AM Steering Committee dealing only with asset creation/major projects
- Poor integration between Maintenance, Improvements and Capital
- Increased collection of condition data – contracts performance specified
- Actual cost data and quantities not available to Main Roads
- Contractors focused on short term AM, not strategic
MRWA AM Enablers during ISA

2013 Asset Management back in house  MRWA asset managers and network managers develop the maintenance program

- Rebuilding *competencies*: design 30% in house to retain expertise and informed purchaser status; ME labs reinstated in rural offices
- Improved access to *information*: actual costs and quantities known
- Development and uptake of new Corporate *systems*: 10 YNDP, WPMS, MMIS
- *Communication* and Customer Services
- *Knowledge Sharing*: Community of NM and AM practitioners: communication, knowledge sharing
Lessons Learnt

Contracting out of AM

- Core AM skills retained to ensure an informed purchaser status. Strategic AM and tactical AM perhaps better in house with OAM outsourced
- Clarity of interfaces: between SAM and OAM, between AM and other Areas; roles and responsibilities need to be documented and monitored
- Governance structure incl Contractors and Principal
- AM KPIs to be embedded in the Contracts
Lessons Learnt cont.

Process, documentation, systems

- Process owners and roles identified
- Process and documentation relevance is maintained through regular reviews and updates; Improvements Registry linked to Document control
- Process/documentation owners required to review each year
- System implementation – Change Mgmt process to support
<table>
<thead>
<tr>
<th>Directorate</th>
<th>Branches/Business Units</th>
<th>Asset Management Role</th>
<th>Role</th>
<th>Systems</th>
<th>Reference Material</th>
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</thead>
</table>
| Planning an Technical Services (PTS) Directorate | Road Asset Planning (RAP) Branch | Strategic | Development and custodianship of:  
- Road Categories and Levels of Service  
- Investigatory Criteria (Condition and Configuration)  
- Strategic links and corridors  
- Road Network Plans (State Wide and by Region)  
- Road Reclassification process  
- WARES (BCR Calculations)  
- Corporate pavement modelling dTIMS and NIMPAC) | RAPID  
WARES  
dTIMS | Asset Management Planning Guidelines (on line doc)  
TRIM D07#1156536 | On Intranet , via “Directorate/Branches” |
| Road and Traffic Engineering (RTE) Branch | Strategic | Development and custodianship of:  
- Road Design and Construction Standards | | | On MR external web page/internet |
| Structures Branch (SB) | Strategic and Operational | Development of :  
- Structures Inspection Guidelines  
- Structures and waterways investment plan | Bridge Maintenance System | | |
| Environment (E) Branch | Strategic | Development and custodianship of:  
- Corporate environment policies and standards  
- Heritage related policies and regulations  
- Environmental assessment and approval processes | | | On Intranet , via “Directorate/Branches” |
| Road Network Planning Branch (RNP) | Strategic | Development of:  
- Road Network planning process (25+years long term planning, corridor options studies) | | | |
| Asset and Network Information (ANI) Branch | Support | Development of corporate policies and standards for data management. Custodian and manager of:  
- IRIS (Integrated Road Information System) the corporate database of road inventory and | IRIS (Integrated Road Information System)  
RC (Reporting Centre)  
RIC (Road Information Centre) | | |
Lessons Learnt cont.

Communication/collaboration

- Uptake of new systems and user ownership via user and stakeholder consultation and involvement in the development
- AM the result of top down and bottom up collaboration and synergy
- AM to appeal/satisfy corporate and operational, in house and external, contractors
- Knowledge sharing and *communities of practitioners*
- AM culture
- Leadership and corporate support visible