Management of Heritage Bridges
P B Manamperi
Bridge Strategy Manager, RTA (NSW)

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Presentation

› Strategic Context
› Bridge Asset Management
   » Inventory
   » Inspection
› Bridge Issues
› Heritage Structures
› Management Strategies
Strategic Context

› Total Asset Management

» Assets Required for Service Provision

» Long Term Renewable Assets
Austroads Elements of Road Asset Management

COMMUNITY BENEFITS

ROAD SYSTEM PERFORMANCE

ASSET FEATURES

ASSET CONDITION

PHYSICAL TREATMENTS

MANAGEMENT OF USE

ASSET MANAGEMENT STRATEGIES

MONITORING AND REVIEW

NSW
Legislation

› Roads Act (1983)
› NSW Heritage Act (1977) and
Bridge Inventory

Bridges by Material Type
- Concrete: 41%
- Steel: 9%
- Timber: 2%
- Culverts: 48%

Bridge by Design Era
- Pre 1948: 14%
- 1948 to 1976: 46%
- Post 1976: 40%

RTA’s Ageing Bridges

Ageing higher maintenance structures
Generally heritage structures
Steel Beam

Masonry and Concrete
# Opening Span

![Image of a bridge](image)

# Bridge Information System

<table>
<thead>
<tr>
<th>Action</th>
<th>Edit</th>
<th>New</th>
<th>Save</th>
<th>Exit</th>
<th>Help</th>
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<td>General Information</td>
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Bridge Inspection Regime

› Level 1 - Routine

› Level 2 - Condition Assessment

› Level 3 - Structural Safety Assessment

› Level 4 - Load Capacity Assessment

Bridge Inspection
Bridge Inspection

- Super snoop inspection

Cooks River Bridge Inspection
Bridge Issues

History of Highway Loading
Bridge Design Standards

Results of overloading

SH29 Brewarrina Bridge over Barwon River
Results of overloading

Damage to structures by over height vehicles

SH7 - Bridge over Macquarie River at Wellington
Narrow Bridges

B-Triples
Safety Fence on Mooney Mooney Bridge to prevent people jumping from the bridge

Bridge Screens to prevent people throwing / dropping things to oncoming vehicles
Kempsey Truck Crash

Vehicles on timber truss bridges
Heritage Studies

Conservation Management

› Conservation Management Plans being prepared for State Heritage Register structures
Management Strategies

Bridge Maintenance Priorities

› Safety
    » Bridge Maintenance to support heavy vehicle travel at current legal load limits with reasonable degrees of structural safety
    » Maintenance of vehicular ferries and opening bridges
    » Bridge Widening to correct major deficiencies in bridge width

› Retained Value
    » Repainting of steel bridges

› Reliability
    » Bridge Widening to correct minor deficiencies in bridge width
    » Bridge widening to facilitate over-size travel on new routes
    » Bridge replacement / rehabilitation to increase bridge heights to support legal load dimensional limits
Funds Allocation

› Allocation Strategy
  » Commitments

  » Safety

  » Asset Integrity

  » Reliability

Management of Heritage Structures
RTA Maintenance Principles

- Keep the bridges open to traffic
- Keep the SHR listed bridges in perpetuity
- Maintain functionality
- Provide appropriate level of service to the public
- Ensure necessary modifications are reversible
- Retain in-house traditional skill base

Maintenance Strategies

- Conserve the bridge “as is”, in operational condition with modifications to elements that need strengthening to meet current loadings (eg Hinton Bridge, Monkerai Bridge)
- Retain the bridge as one way of a two way pair, with addition of a new bridge (Fitzgerald Bridge Aberdeen).
- Replace the bridge using a new alignment and find an alternative use for the heritage structure (Cobram Bridge)
- Replace the bridge and demolish the existing bridge (Bean Tree Bridge, Dangar Bridge)
- Maintain as an orphan structure (Five Day Creek Bridge).
Management Strategies

Country Timber Bridge Program

› Address 140 timber bridges in 5 years
  » 124 Replacement
  » 16 Refurbishments
Country Timber Bridge Program

Timber Bridge Strategy

› Timber Bridge Management
  » Addresses future potential of each structure
Murray Crossings

› Murray River Crossings Strategy

Summary

› Need to recognise importance of bridges and their load carrying capacity
› Proactively manage risks associated with bridges
› Balance the often competing demands of capacity, required usage and other required outcomes.
THANK YOU.