Joint CPWA / IFME
Board Meeting
A focus on infrastructure

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IPWEA is a community of public works professionals
Institute of Public Works Engineering Australasia (IPWEA)

- 4,000+ members (engineers, finance & technical)
- 20,000+ in network

- International reputation in IAM
  - National rollout of AM & FP
  - International Infrastructure Management Manual (IIMM 2015)
  - Advising to US Highways
  - NAMS.AU, NAMS Canada

NAMS Canada

- Not for profit incorporated in Canada
- Training arm of IPWEA in Canada
  - Access IPWEA tools, training & resources
- Seek to work collaboratively with other associations
  - AMBC AMSK IAMA CPWA
Globally our community infrastructure is under strain

We have responsibility to manage our nation’s roads & highways
Insufficient resources are provided to sustainably manage infrastructure

What are the risks of extreme weather events on our infrastructure & communities?
Resilient communities & quality infrastructure are critical for our economies.

Economic development  Social & Recreation Needs

Public health & safety  Highly interdependent
How can we expect long lived infrastructure to be sustainable
- if we don’t plan & invest for the long term?

3 pillars for sustainable management in community infrastructure
Stewardship
Understanding our stewardship responsibilities

Asset Management
Managing existing as well as new

Financial Planning
An essential part of business

Stewardship.
Understanding our stewardship responsibilities.
Decaying infrastructure leaves a liability for future generations

Infrastructure is long lived & needs to be managed accordingly
Provide decision makers with full costs, options & priorities

Infrastructure Assets
Typical Life Costs

Operating Costs 40%
Initial Cost 20%
Maintenance 35%
Disposal

$1 spent early saves $5 if deferred to later

Infrastructure is long lived & needs to be managed accordingly
Infrastructure is long lived & needs to be managed accordingly

Be aware if the wall of expenditure ahead

Project future capital renewal requirements
Stewardship needs to be fully comprehended by decision makers

Understanding our stewardship responsibilities

Managing existing as well as new

An essential part of business
Asset Management.
Managing **existing** as well as new.

Asset Management.

*To meet a required **level of service**, in most **cost effective** manner, for **present & future** generations*
What can we learn from Asset Management?

Investment required for sustainable levels of service
Use the data for asset renewal planning

What can we learn from Asset Management?

Allow for future demand & extreme weather events
Optimise investment priorities to best meet community needs

A particular level of service has a particular cost

Make the link between levels of service and price
Manage the gap
(not just funding the gap)

- Understanding impact new assets
- Better asset information
- Timely maintenance
- Improved work practices
- Disposal of assets
- Alternative service delivery
- Lower levels of service
- Innovative solutions
Financial Planning.
Moving from annual budgeting to long term financial planning.

Sustainability is maintaining financial & infrastructure capital for long term
Sustainability is maintaining financial & infrastructure capital for long term

Account for infrastructure in our financial statements

Prepare 10 yr financial plans based on 20 yr AM plans
Account for infrastructure to reflect how managed

Engineers view of Highway

Engineer’s view

• Pavement base – rehab after 10 years
• Pavement sub-base – replaced ~ 50 yrs
• Earthworks – indefinite life for alignment
Accountant’s view of a Highway

Accountant’s view - 3 components

- Base
- Sub-base
- Earthworks

Annual average asset consumption = Replacement cost / Useful life

Account for infrastructure to reflect how managed

Componentisation & segments simplifies the task
Assets recognised at component level

Consumption Phase 1

Assets recognised at component level

Consumption Phase 2
Assets recognised at component level

Consumption Phase 3

Segmentation

Future Economic Benefits (Service Potential)

Asset #3 - Pavement Useful Life

Asset #2 - Pavement Useful Life

Asset #1 - Pavement Useful Life

Asset #1 Earthworks/Formation lead to useful Life (Not depreciated)

Rural (~1-5 km)

Urban block length (~200m)

Road Segment shown

Intersection (Optional)
Project future capital renewal requirements

Account for infrastructure to reflect how managed

Value based on Depreciated Replacement Cost
Infrastructure Valuation

Cost or gross replacement cost

Current Replacement Cost (Depreciated replacement cost of new asset)

Accumulated Depreciation

Carrying amount

Fair Value

Depreciable Amount

Residual Value

Year of acquisition

Useful Life

Illustrative Balance Sheet

$'000

Assets
Cash, Inventories & Receivables X
Infrastructure, Property, Plant & Equipment X
Total Assets X_t

Liabilities
Payables Y
Borrowings Y
Provisions Y
Total Liabilities Y_t
Equity

X_t - Y_t

Ref: AIFMM Sec 12.1.2, p 12|5.

Ref: AIFMM, Table 2.6.1.1, p 2|9.
Illustrative Income Statement

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Operating Income</strong></td>
<td></td>
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<tr>
<td>Rates, Taxes</td>
<td>X</td>
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<tr>
<td>Other Income</td>
<td>X</td>
</tr>
<tr>
<td><strong>Total Operating Income</strong></td>
<td>X</td>
</tr>
<tr>
<td><strong>Operating Expenses</strong></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>X</td>
</tr>
<tr>
<td>Depreciation</td>
<td>X</td>
</tr>
<tr>
<td><strong>Total Operating Expenses</strong></td>
<td>X</td>
</tr>
<tr>
<td><strong>Operating Result</strong></td>
<td></td>
</tr>
<tr>
<td>Other items (e.g. cap revenues) to get net surplus</td>
<td>X</td>
</tr>
<tr>
<td>Other items to get total comprehensive income</td>
<td>X</td>
</tr>
</tbody>
</table>

Ref: AIFMM, Table 2.6.1, p 228

Know the long term impact of your decisions

Making the trade offs between service levels & funding
Financial Sustainability: maintaining infrastructure & financial capital over long term

ASSET MANAGEMENT PLAN
Services required, how provided & funds required

SERVICE & FINANCIAL SUSTAINABILITY

LONG TERM FINANCIAL PLAN
How services are to be funded

Know the long term impact of our decisions

Make informed prioritised decisions
Implement 3 pillars to sustainably manage your community

- Stewardship
- Asset Management
- Financial Planning

Understanding our stewardship responsibilities
Managing existing as well as new
An essential part of business
IPWEA provides national frameworks, tools & resources

not software strategic approach

Work within a national framework  Provide the tools  Add some drivers!
Provide Framework Tools & Drivers | Framework | Tools | Drivers
--- | --- | --- | ---
Stewardship | Government Requirements Agreed | AM DVD: The Movie! | **LAW**
Asset Management Planning | International Infrastructure Management Manual | **NAMS.PLUS** | Legislation & Incentives

**International Infrastructure Management Manual**
Leveraging from International Partnerships?

Capacity Building & Tools

Focus on practical implementation of writing AM plans

NAMS.PLUS Tools & Guidelines

Suite of resources
- tools, templates
- online modeling & portal
- not just templates
- transfer skills & experience
  • 3-day workshops, forums
  • Online Professional Certificate
NAMS.PLUS Tools & Guidelines

- Output: Write first cut AM Plan
- How to develop
  - risk mgmt plan
  - AM strategy; AM policy
  - Improvement plan

- Covers LOS; Risk Mgmt; Future Demand
- Lifecycle planning; LTFP

Face to face workshops have been an essential part of our program
Online Professional Certificate in Asset Management Planning

400+ who have undertaken our international online course

Australia, Canada, Malaysia, New Zealand, Philippines, South Africa, United States
3 key features of the online course:

1. Highly interactive
2. Access to NAMS.PLUS tools
3. Draft AM Plan is the output

8 modules over 3 months
explain the concepts, show the tools
share experience, practice hands-on
to tell your infrastructure story
Organisation gets a draft AM plan

You get a Professional Certificate in Asset Management Planning

Lessons we have learnt 1

• 3 Essential Elements / 3 Pillars
  – Stewardship, AM, FP/FR

• Capacity building an essential
  – Workshops
  – Professional Certificate in AM
  – transfer of skills & experience

• Deadlines: frameworks, tools, drivers
  – AMP; then LTFP; maturity model
Lessons we have learnt 2

• Consistency in approach
  – national/provincial framework
  – not reinventing wheels

• Connecting asset management & financial reporting: dollar speaks

• IPWEA 20 years experience & programs
Putting you in the drivers seat
www.ipwea.org
www.namsCanada.org

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