



Building a Sustainable Asset Management Program

9th National Conference on Transportation Asset Management

Katie Zimmerman, P.E.



providing engineering solutions to improve pavement performance

2011 International Study Tour Focus Areas



- Identifying processes for implementing sustainable performance-based programs for managing pavements
- Acquiring effective communication strategies
- Learning how to develop agency cultures to support performance-based programs
- Identifying tools, techniques, and other mechanisms to support and encourage performance-based management



Agencies Visited During Week 1



- New Zealand
 - New Zealand Transport Agency
- Australia
 - Institute of Public Works Engineering Australia (IPWEA)
 - Roads Corporation of Victoria (VicRoads) 
 - Department for Transport, Energy & Infrastructure (South Australia)



Government of South Australia

Department for Transport,
Energy and Infrastructure

Agencies Visited During Week 2



- Sweden
 - Swedish Transport Administration
 - Finnish Transport Agency
 - Danish Road Directorate
 - Norwegian Public Roads Authority
- Netherlands
 - Road Traffic & Transport Authority (Netherlands)
 - Szechenyi Istavan University(Hungary)
- England
 - Highways Agency
 - Transport for London
 - Transport Scotland
 - Transport Research Laboratory (TRL)



TRAFIKVERKET



Finnish Transport Agency



Statens vegvesen



Creating the future of transport



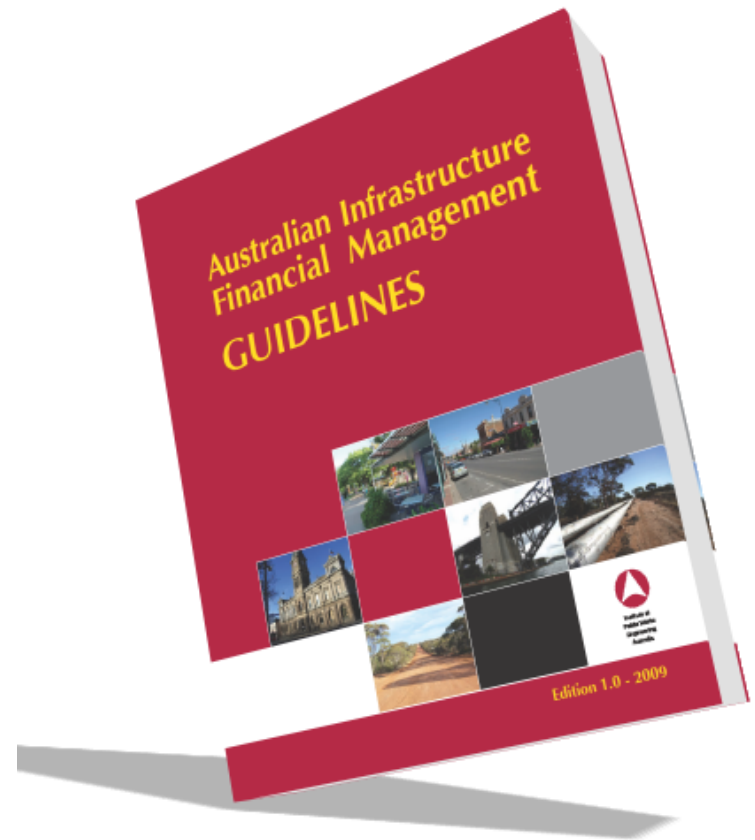
Key Findings



- Agency Culture Supports Long-Term Decisions
- Elected Officials Are Stewards of Public Funds
- There is a Service-Oriented Approach to Managing Roads
- Agency Priorities are Known and Personnel are Held Accountable for Actions
- Building Internal Capacity and Capabilities is a Focus
- Efficiency & Value Have Driven Program Delivery

Agency Culture Supports Long-Term Decisions

- Development of 10-year financial plans that consider the whole life costs associated with the maintenance & renewal of the road



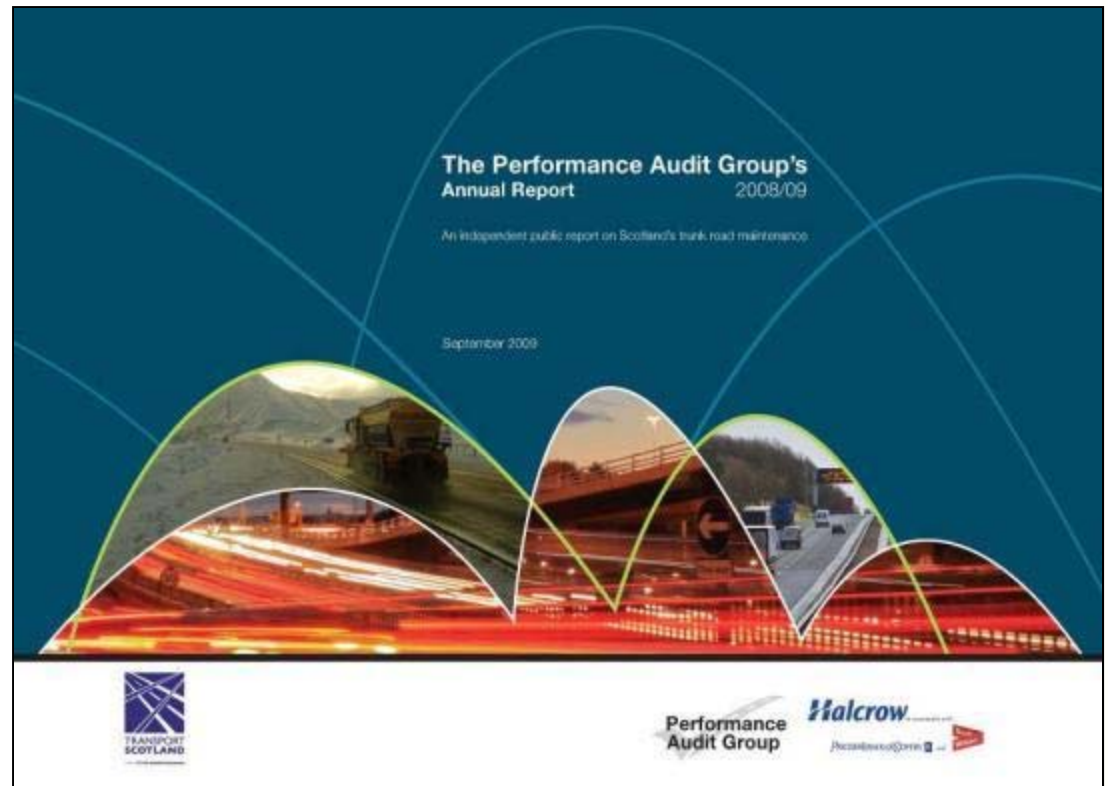
Guidelines developed & distributed by IPWEA

<http://www.ipwea.org.au/bookshop/aifmg/>



Elected Officials Are Stewards of Public Funds

- Independent performance audits used in Scotland and England to improve efficiency and to verify that public funds are used as promised



Financial Sustainability



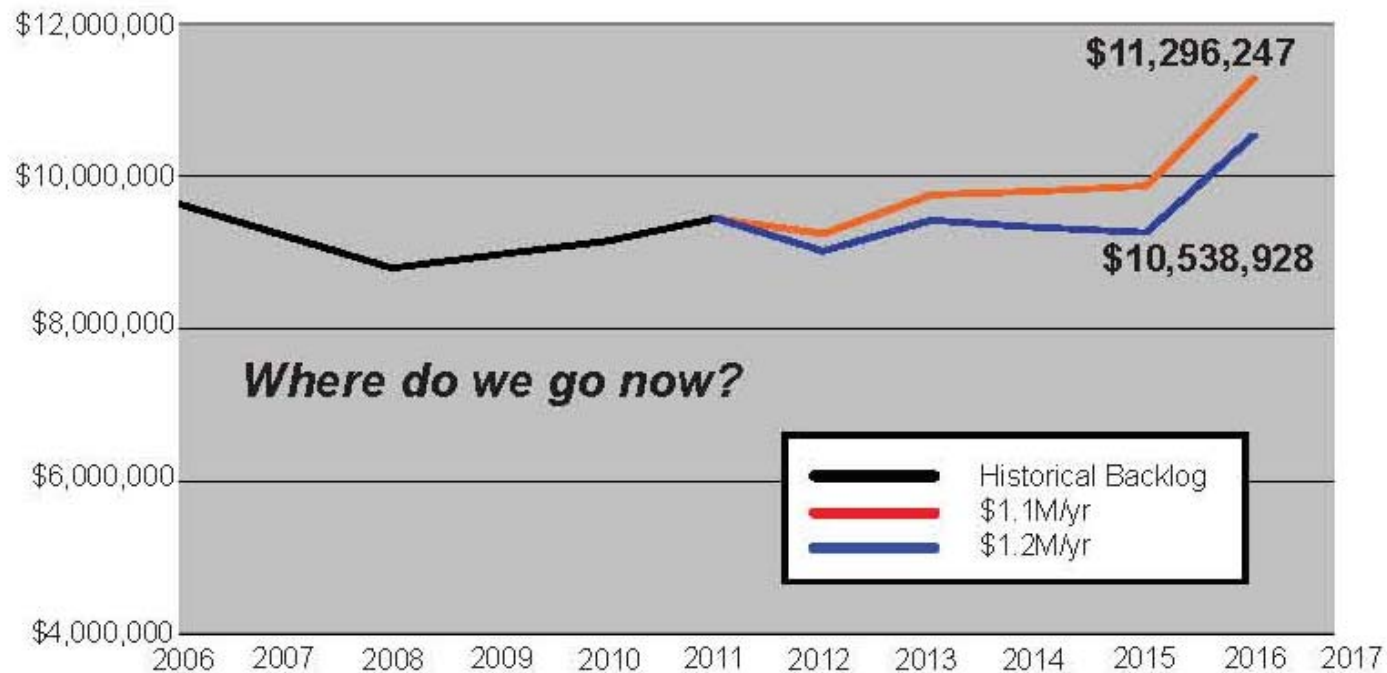
- Ability to manage likely developments and unexpected financial shocks in future periods without introducing economically significant or socially destabilizing income or expenditure adjustments
- Compares:
 - Long-term financial resources
 - Long-term financial requirements



Unsustainable Financing Example

- Town of Bedford, MA Public Works Department

TOWN OF BEDFORD'S FUTURE
BACKLOG PROJECTION



Asset Consumption and Renewal



Asset Consumption

Relates to past investments

Annual Depreciation Expense

Used to allocate depreciable amount over the life of the asset

Asset Renewal

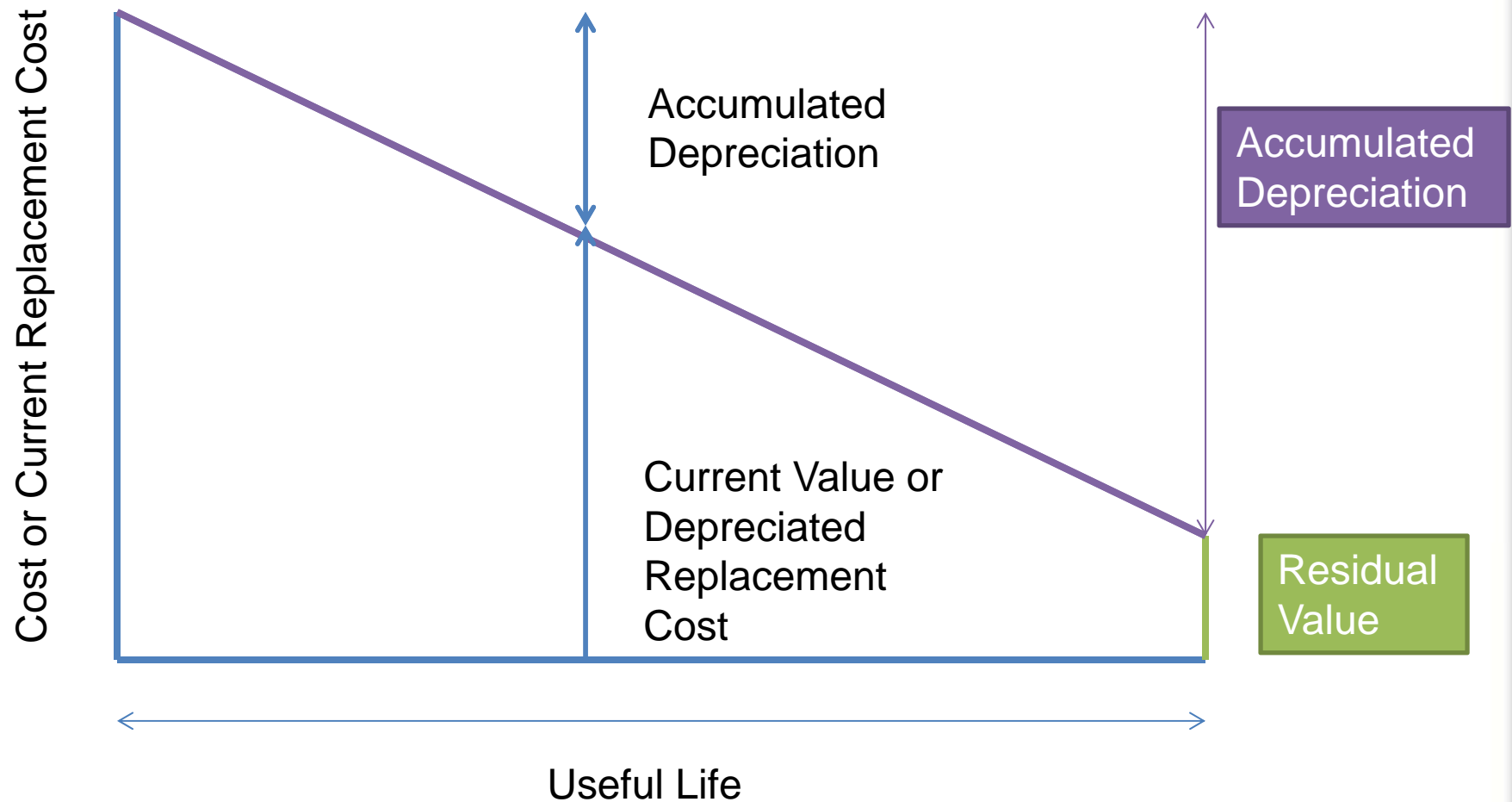
Relates to future investments

Renewal Cashflow Projections

Gives asset renewal cost estimates plus timing



Accounting For Assets



Impairment



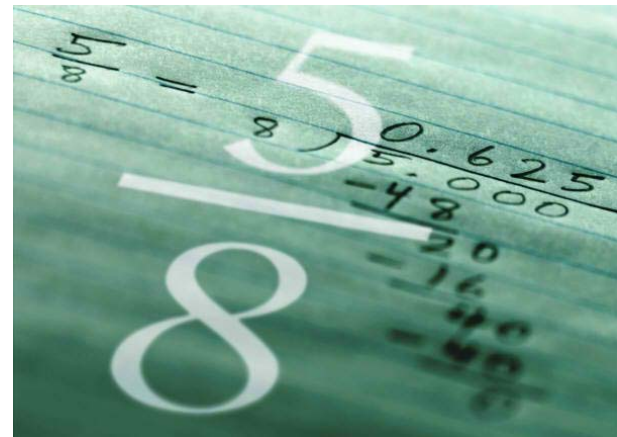
- An asset is impaired when its recoverable amount (value) is less than its depreciated replacement cost
- Example:
 - An asset has a value of \$20,000 and a useful life of 20 years
 - Depreciation is \$1000/year
 - Due to deterioration of the asset and lack of maintenance, the asset life has been reduced to 15 years....this asset is impaired



Financial Sustainability Metrics



- Asset Sustainability Ratio
- Asset Consumption Ratio
- Asset Renewal Funding Ratio



Asset Sustainability Ratio



- What? Asset replacement expenditure/Annual depreciation expense
- Why? Helps you determine whether assets are being replaced or renewed at the same rate as they are wearing out
- Values will vary depending on the age of the assets
- Target: 100%



Asset Consumption Ratio



- What? Depreciated replacement cost/Current replacement cost of the same assets
- Why? It gives you an indication of the aged condition of the physical assets
- Typical values are between 40 and 80 percent



Asset Renewal Funding Ratio



- What? Net Present Value (NPV) of projected 10 year capital renewal funding outlays/NPV of projected 10 year capital renewal expenditures in an Asset Management Plan
- Why? It gives an indication of the agency's ability to fund asset renewal needs



Use of Financial Sustainability Metrics

- Communicating with decision makers
- Promotes long-term investment planning
- Supports collaborative decision making
- Improves fiscal stewardship
- Ties Transportation Asset Management Plan to Long-Term Financial Plans





Thanks!

kzimmerman@appliedpavement.com