

# CLIMATE CHANGE IMPACTS ON THE USEFUL LIFE OF INFRASTRUCTURE

Practice Note 12.1

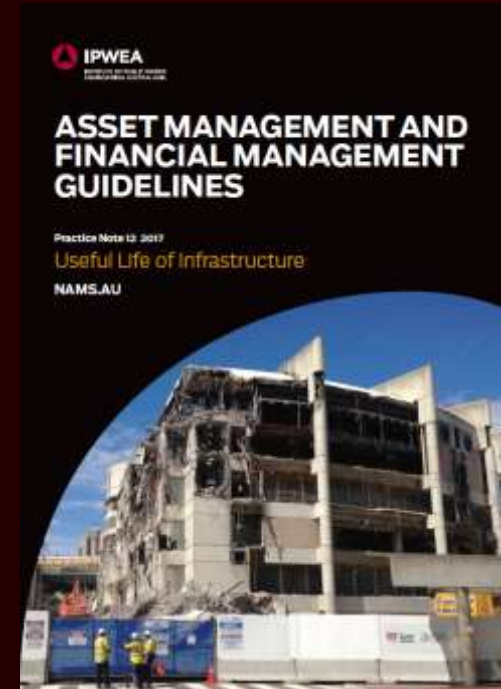


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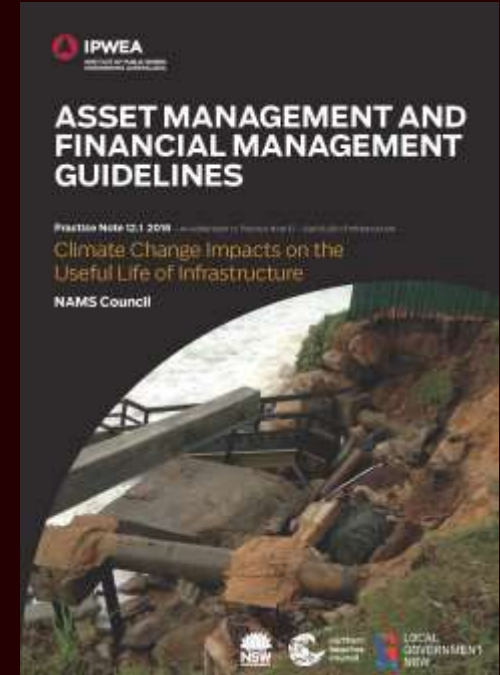
# Context

- IPWEA's "Practice Note 12 – Useful life of infrastructure" recently released.
- NAMS Council recognised a need for industry guidelines to address the potential impacts of climate change on infrastructure useful life.
- With support from the Building Resilience to Climate Change program a companion document to PN12 has been developed.



# Practice Note 12.1

- Practice Note 12.1 addresses climate change and impacts to the useful life of infrastructure assets.
- A national approach to assessing the impact of climate change on infrastructure assets and encourage consistency of data and outputs.
- Developed in collaboration with and tested by Northern Beaches Council and IPWEA members Australia wide.
- Available for order now.



# Scope

- Changes in the climate for Australia to the year 2100.
- Includes rainfall, temperature, wind speed, bushfire weather and sea level rise.
- Impacts to: concrete, bitumen, wood, steel and PVC.
- Vulnerability of Practice Note 12 assets: usage, wear, tear, physical and chemical damage / deterioration.
- Details a range of adaptation responses.
- Identifies data and models for detailed climate impact assessments.
- Includes worksheets and lookup tables.

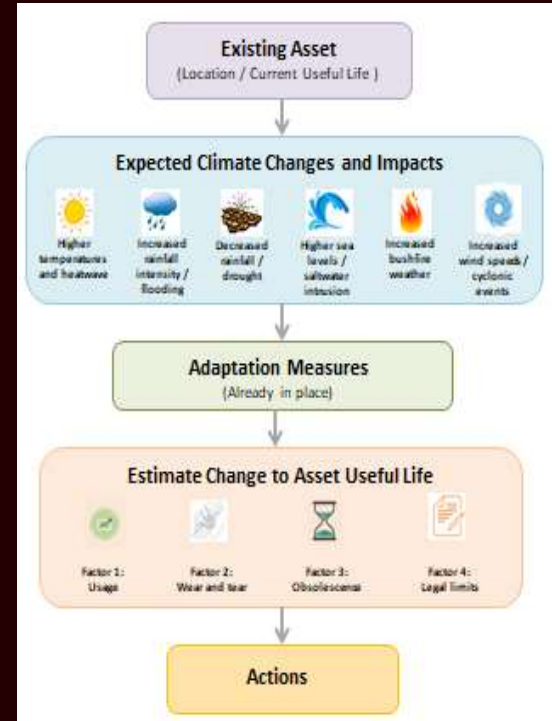
# Contents

- Executive summary & Introduction
- Climate change in Australia
- Asset impacts & vulnerability
- Adaptation
- Quantitative modelling
- Process of estimating impacts of climate change on asset useful life
- Case studies
- References
- Appendices



# The Process

- Identify the asset and its remaining useful life
- Determine climate changes to which the asset will be exposed and vulnerable
- Identify any existing adaptation measures
- Estimate the change to asset useful life
- Identify actions



# Estimating change to useful life

## Three Climate Factors:

- The location of the asset
- The remaining useful life of the asset
- Existing climate change adaptation measures

## Four Asset Factors:

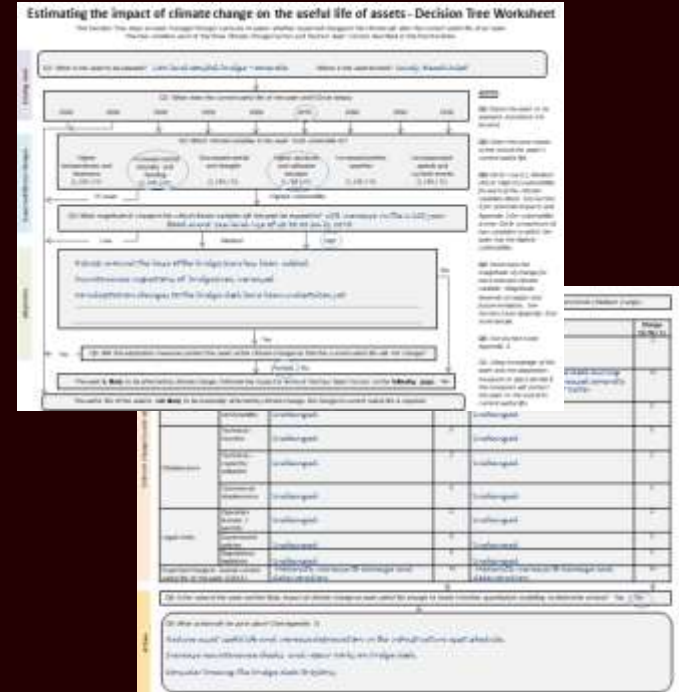
- Expected usage
- Expected physical wear and tear
- Technical or commercial obsolescence
- Legal or similar limits





# Decision Tree Worksheet

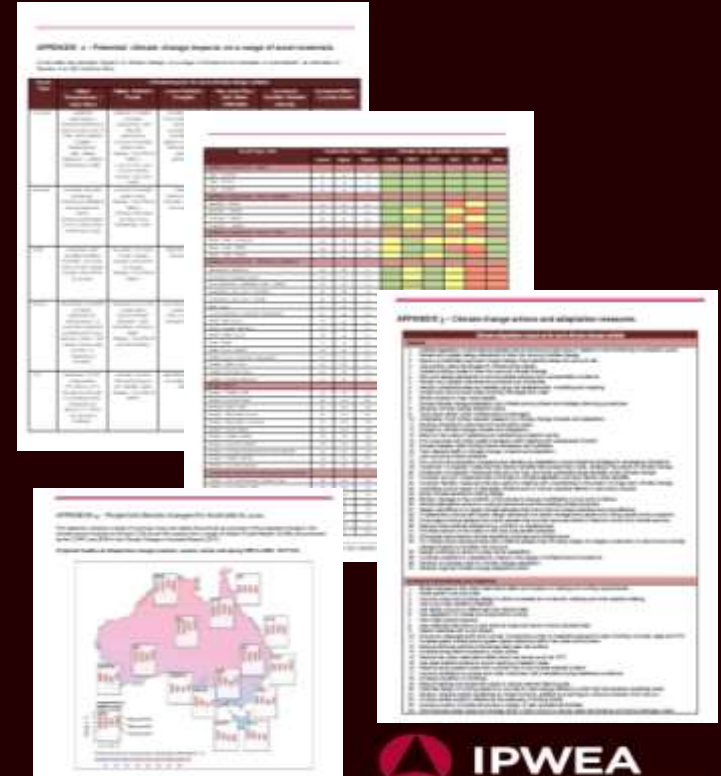
- Provides a consistent approach for estimating climate change impacts on asset useful life
- Simple two page, nine question decision tree worksheet
- Links to relevant sections of the Practice Note
- Considers the Three Climate Factors and Four Asset Factors.





# Appendices

- Simple summary table of climate impacts to asset materials
- Traffic light tables of PN12 asset climate vulnerability
- Extensive tables of adaptation options
- Climate change maps
- Example worksheet



# Conclusion

- Practice Note 12.1 addresses climate change and its effect on the useful life of infrastructure assets.
- Contains information and supporting resources for:
  - Australian climate changes to the year 2100;
  - impacts on a range of asset materials and components;
  - range of adaptation responses; and
  - Decision Tree Worksheet to estimate change to useful life for infrastructure assets in PN 12.
- Available for order today
- Melanie Thomas (NBC) - case studies