

Environmental Impact Assessment and Climate Change

Australia



What we are hoping to get through today

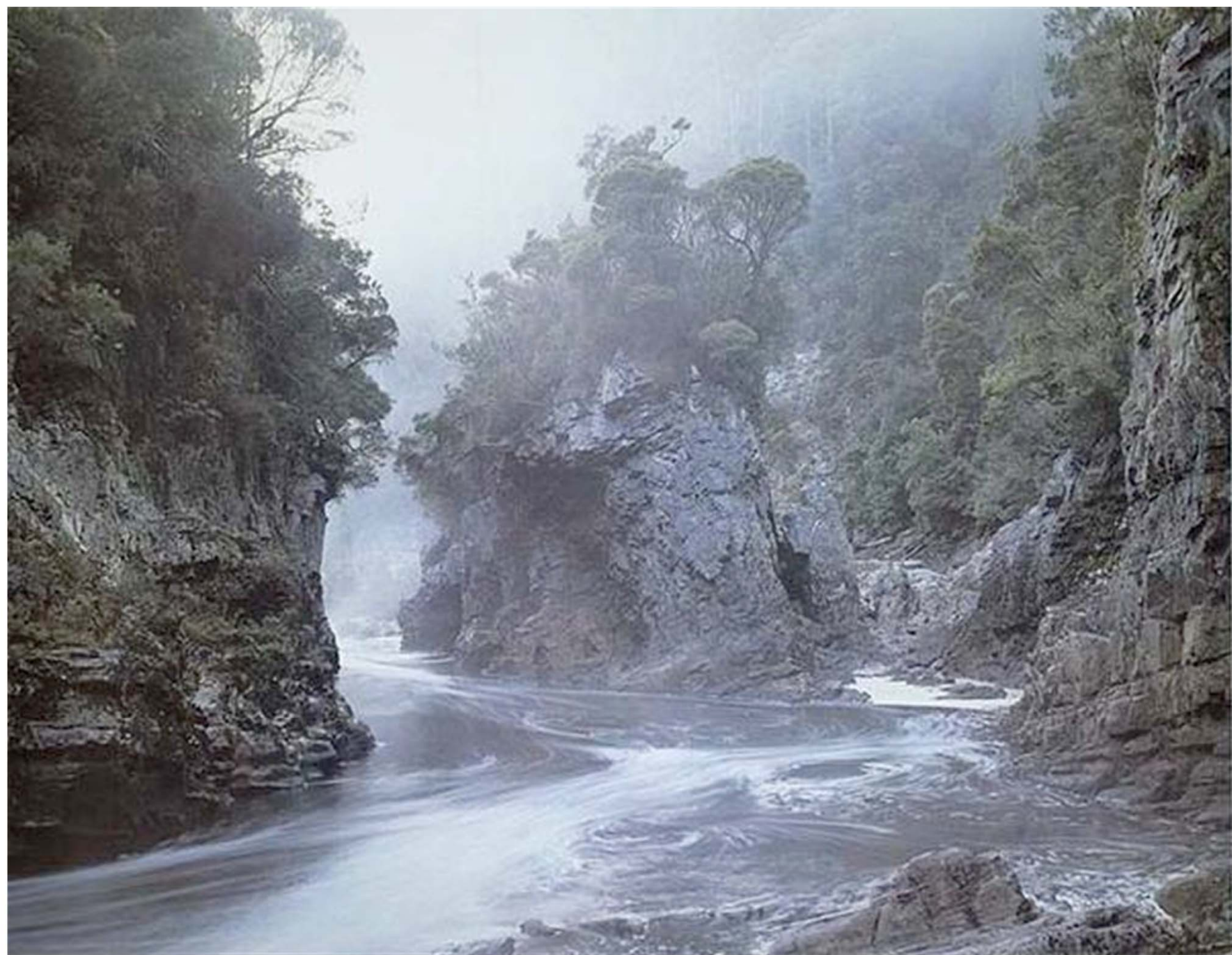
Overview of EIA in Australia

Key climate change issues

Projects with climate change adaptation issues

Climate change in an EIA – Case studies

Policies and guidelines



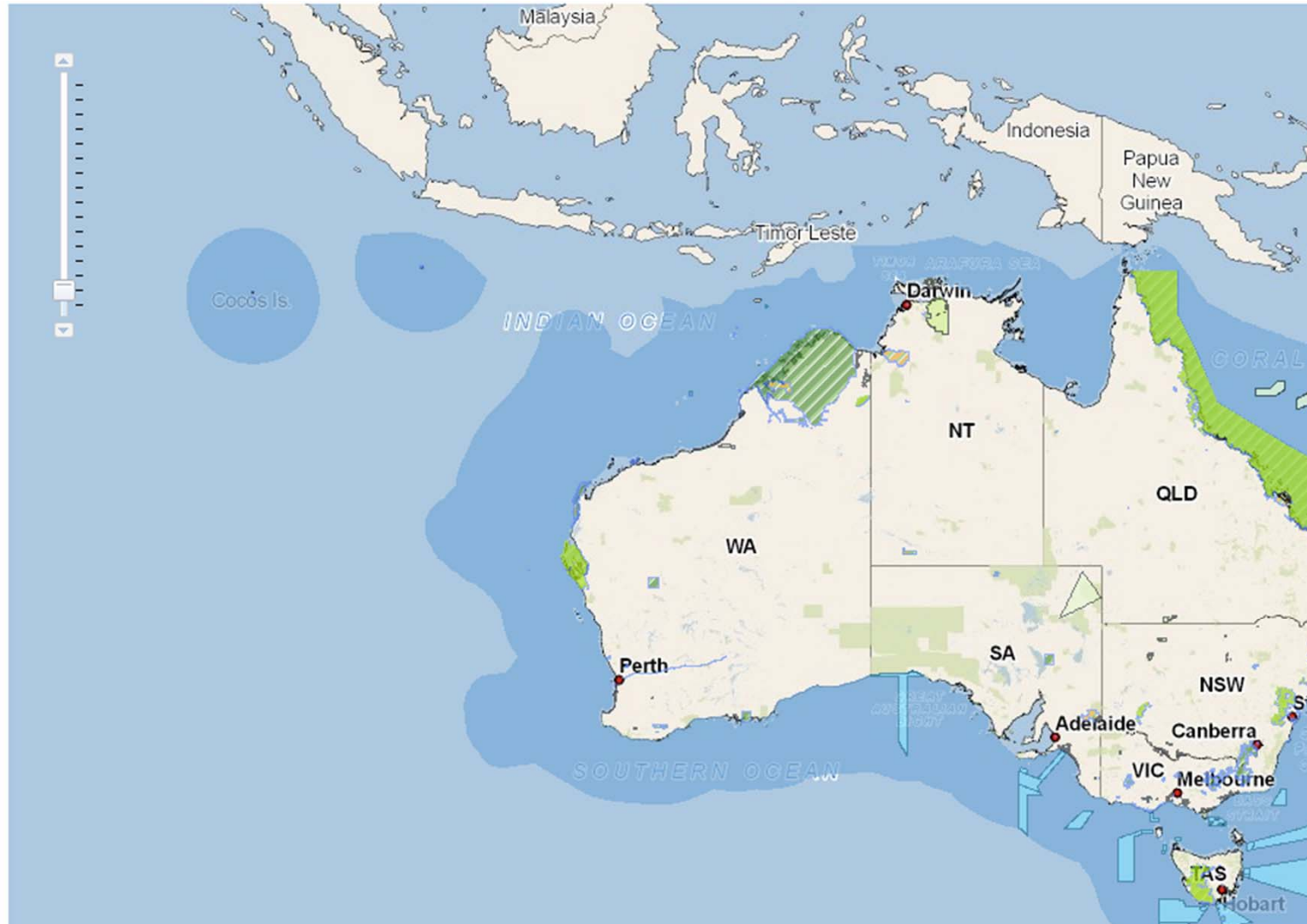
Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

Deals with matters of national environmental significance:

- World Heritage properties and Commonwealth marine areas
- National heritage places including overseas places of historic significance
- Wetlands of international importance (Ramsar wetlands)
- Threatened species, ecological communities and Migratory species
- Nuclear actions (including uranium mining & building of nuclear waste repositories)

And actions by Commonwealth Agencies (e.g. AusAID) that may impact the environment

Australia – Matters protected under National Law





Commonwealth

Never given explicit power to make environmental law (wasn't an issue when constitution was drafted)

EPBC Act in 2000 clarified State vs Commonwealth on issues having national importance

Does not explicitly consider Climate Change questions



State and Territory

Pass laws to regulate conduct which is likely to affect environmental quality (e.g. use of land for a freeway, mineral resources and mining)

Actively considers Climate Change questions in development assessment for some States and Territories

EIA in Australia – Early Climate Change Questions

- Most projects need some form of impact assessment, prior to implementation
- EIA normally goes on public display, allows community to have input
- Challenging projects in court, was an early means to consider climate change
- Established precedent, then reflected in future EIA requirements and approvals

Climate Change in Australia

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By 2030 it is expected Australia will face:

- Increases in storm surges and severe weather events
- A further 1°C of warming in temperatures
- Up to 25 % increase in days of very high or extreme fire danger
- Up to 20 % more months of drought



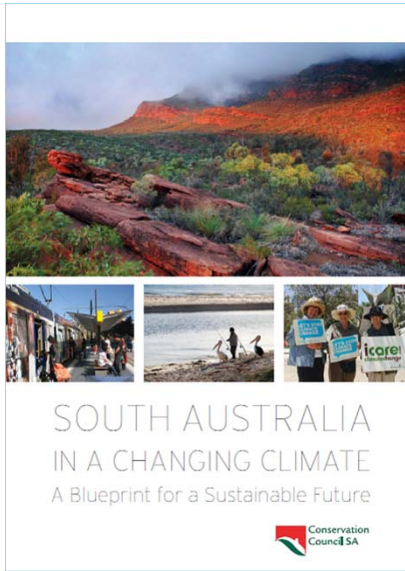
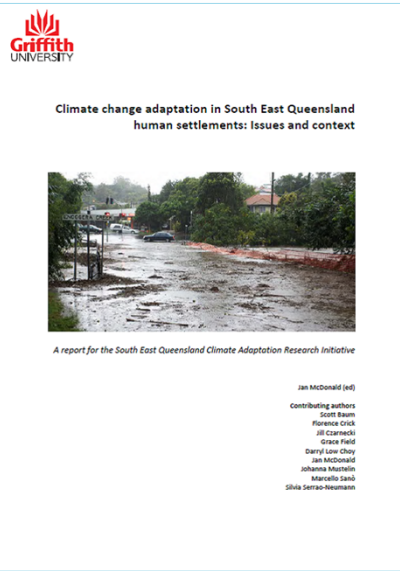
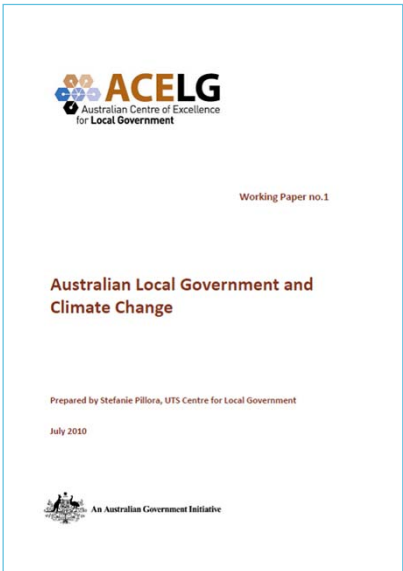
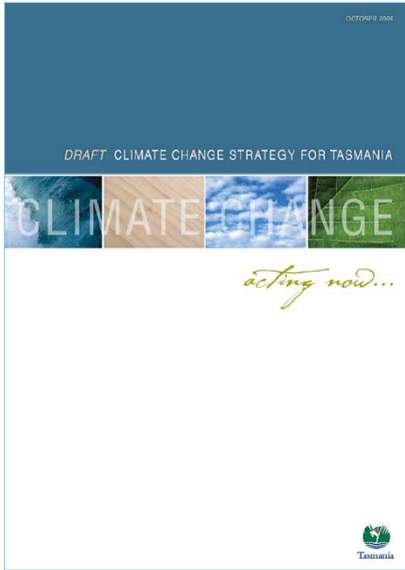
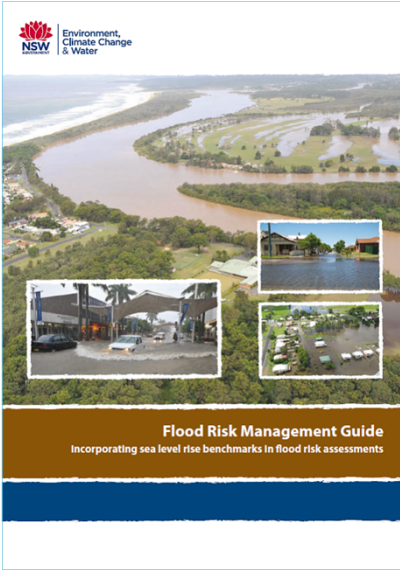
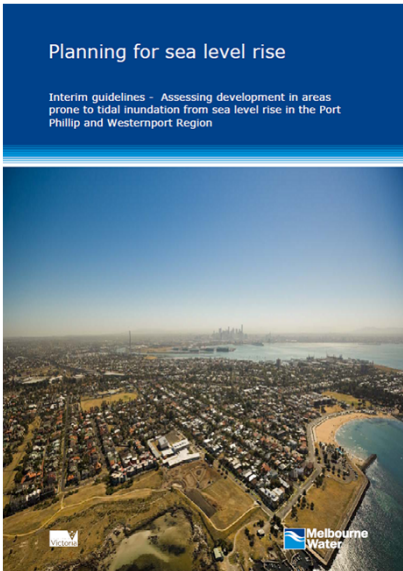
Climate Change in Australia

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- Federal Government has developed:
 - National Climate Change Adaptation Research Facility
 - Local Adaptation Pathways Program
 - National Coastal Risk Assessment
 - Biodiversity Vulnerability Assessment
 - Interactions between Climate Change, Fire Regimes and Biodiversity in Australia
- Carbon Tax legislation recently passed
- State and Local Governments are also engaged in climate change adaptation
- As is some of the private business

Climate Change in Australia



Sandon Point – New South Wales

- Proposal to build about 200 houses (\$250M) on a headland at Sandon Point, south of Sydney
- Site contained three watercourses, known to flood
- Project was initially approved, but later challenged in court



Sandon Point – New South Wales

- The EIA report included specialist flood studies but did not consider climate change
- The court found that: “***Climate change presents a risk to the survival of the human race and other species. Consequently it is a deadly serious issue. It has been increasingly under public scrutiny for some years. No doubt that is because of global scientific support for the existence and risks of climate change and its anthropogenic causes. Climate change flood risk is, prima facie, a risk that is potentially relevant to a flood constrained, coastal plain development such as the subject project***”
- Projects need an assessment of the risk-weighted consequences of an action before deciding to proceed

Bushfire Frequency - Victoria

- Proposal to rebuild a community facilities in an area that was badly burnt by the Black Saturday bushfires
- Initially approved then challenged in court
- Challenge upheld approval, but imposed strict management and design conditions

“However I am conscious that a prudent approach is needed and that the climate change predictions at this point suggest that Victoria will get more extreme fire danger days as time goes on, not less...”



Projects requiring Climate Change Assessments

Project Name	Project type	State
East Lakes 132kV Substation, Sub transmission Line and Cable Routes	Electricity transmission	ACT
Mulligan Flats Road Upgrade	Road	ACT
Mount Franklin Road, Cotter Hut Road and Smokers Trail, Namadgi National Park	Road	ACT
Murrumbidgee to Googong Water Transfer	Water pipeline	ACT/NSW
Clarie Hermes Drive Extension	Road	ACT
Kings Highway Southern Deviation	Road	ACT
Armidale Landfill	Landfill	NSW
South West Rocks Aquaculture	Aquaculture	NSW
Boollwarroo Parade, Shell Cove – Shellharbour / Shell Cove Boat Harbour Precinct, Shell Cove	Residential Development	NSW
Barangaroo (formerly East Darling Harbour) – Sydney	Residential Development	NSW
DPI Land at Bloomfield – Orange	Residential and Retail Space Development	NSW

Source: ACTPLA (2010), NSW Department of Planning (2010)

Director-General's Requirements

Section 75F of the *Environmental Planning and Assessment Act 1979*

- **Surface and Ground Water** - including but not limited to:
 - water quality taking into account impacts from both accidents and runoff and considering relevant environmental water quality criteria specified in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000*;
 - groundwater including cumulative impacts on regional hydrology. The assessment must consider: extent of drawdown; impacts to groundwater quality; discharge requirements; and implications for groundwater-dependent surface flows (including springs and drinking water catchments), groundwater-dependent ecological communities, and groundwater users;
 - identifying changes to existing flood regimes, in accordance with the *Floodplain Development Manual* (former Department of Natural Resources, 2005), including impacts to existing receivers and infrastructure and the future development potential of affected land;
- demonstrating consideration of the effects of sea level rise, changes to rainfall frequency and/or intensity as a result of climate change on the project; and
- waterways to be modified as a result of the project, including ecological, hydrological and geomorphic impacts (as relevant) and measures to rehabilitate the waterways to pre-construction conditions or better.

East Lake 132 kV sub station - ACT



10.2 Climate

- Describe the rainfall patterns (including magnitude and seasonal variability of rainfall), air temperatures, humidity, wind (direction and speed) and any other special factors (e.g. temperature inversions) that may be impacted, including air quality within the region of the proposal. Extremes of climate (droughts, floods, storms, etc) should be discussed with particular reference to water management at the proposal site.
- The vulnerability of the area to natural or induced hazards, such as floods and bushfires, should be addressed. The relative frequency and magnitude of these events should be considered together with the risk they pose to management of the proposed development.

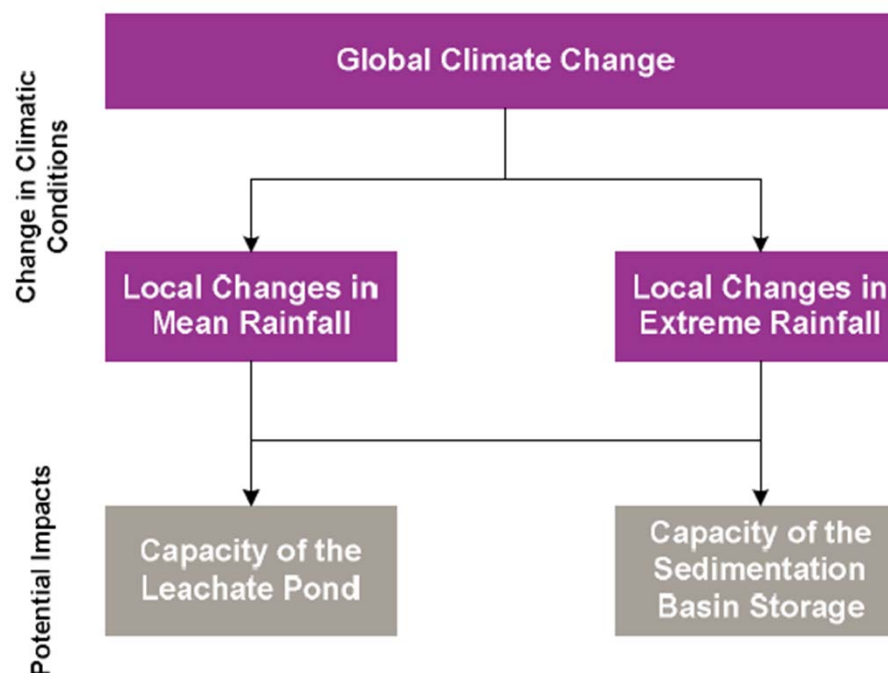
10.3 Climate change adaptation⁷

- Climate change has the potential to impact in the future on developments designed now. Provide an assessment of the development's vulnerabilities to climate change and describe possible adaptation strategies for the activity including:
 - A risk assessment of how changing patterns of rainfall and hydrology, temperature and extreme weather may affect the viability and environmental management of the development.
 - The preferred and alternative adaptation strategies to be implemented.
- The impacts of storm events on the capacity of waste containment systems (e.g. site stormwater management) should be addressed (contamination of waterways) and (waste containment systems).

⁷ Predictions of climate change and its effects have inherent uncertainties. Proponents should, however, use their best efforts to incorporate adaptation to climate change in their EIS and project design.

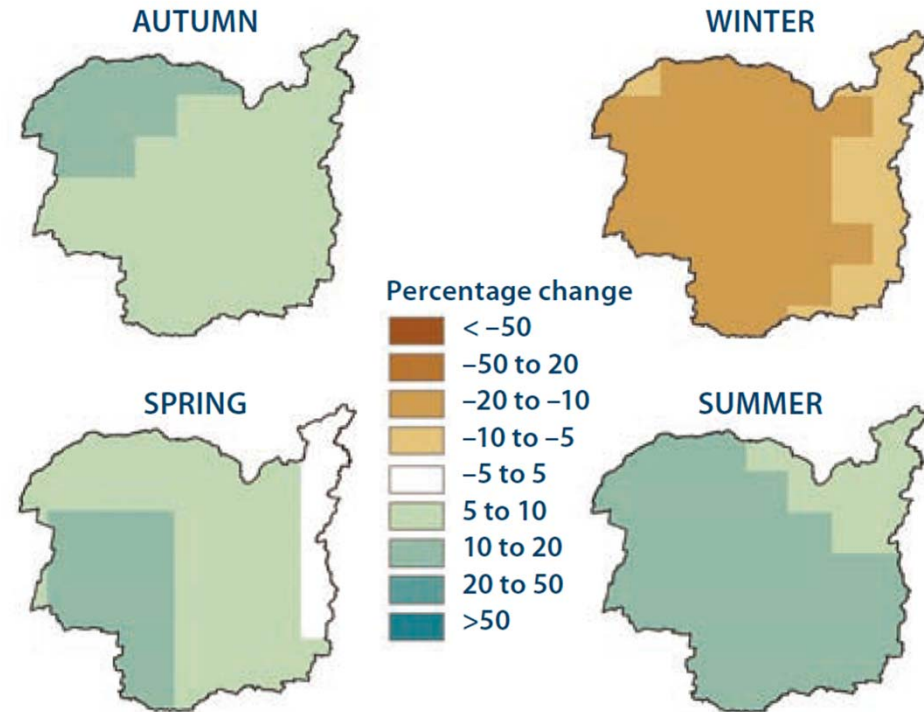
Armidale Landfill – New South Wales

- Landfill up to 15,000 tonnes per annum of solid waste, up to a total of 750,000 tonnes over life span of 50 years
- Management of surface water runoff was critical to ensure that pollution from the landfill did not occur



Armidale Landfill – New South Wales

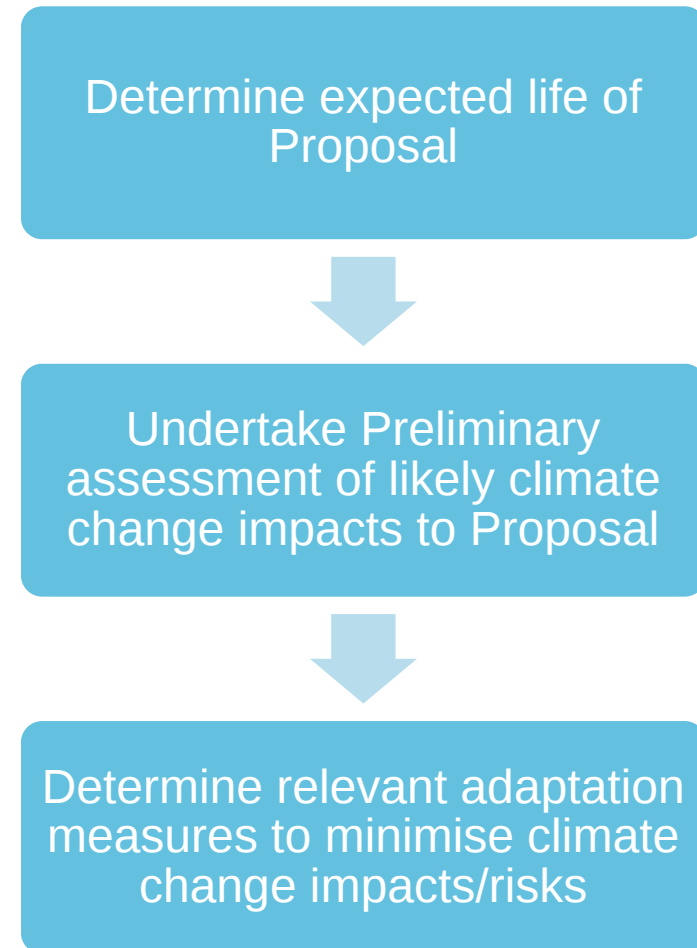
- Risk assessment considered scenarios of basins and leachate ponds not being designed to cope with projected rainfall and runoff
- Process resulted in a revised design, of sufficient capacity
- Ensuring adequate land was available in the future



Queensland – Climate Change Impact Statement

‘First Pass’ Climate Change Risk Assessment

- Provides guidance on how to undertake an initial climate change risk assessment and potential adaptation measures
- Results from this risk assessment identify vulnerabilities of the proposal to various climate change impacts (such as changes in temperature, precipitation or sea level rise) and possible adaptation strategies to reduce these impacts



Issues and Challenges

- Although there is a coordinated national climate change policy agenda, there is no explicit consideration of climate change in National EIA law
- Most climate change considerations in EIA happens at the state level → Can lead to confusion, and different standards e.g. sea level rise
- Climate change in EIA has historically focussed on mitigation increasingly adaptation questions are being asked
- Agenda has been driven heavily by court precedents

Issues and Challenges

- There is little national consistency. Same infrastructure, same climate risks, different assessment requirements and scrutiny
- Limited guidance on implementation at a state or local level, although more tools are being developed
- Capability of proponents, practitioners and determination/approval bodies is limited, and still growing
- There is limited understanding of how to implement or condition projects to deal with climate change issues beyond the EIA