A deeper look at the economic cost drivers of natural disasters

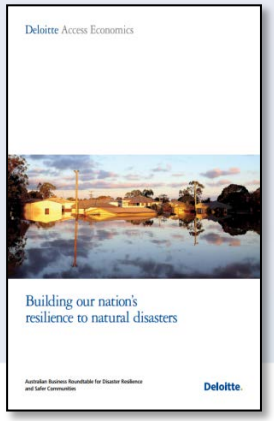
Shauna Coffey, Australian Business Roundtable for Disaster Resilience & Safer Communities

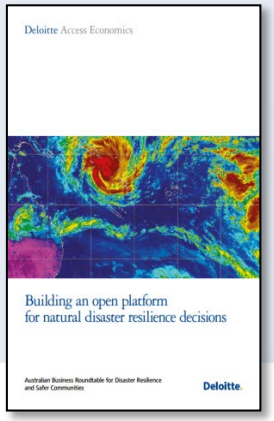
Wednesday, October 6, 3:30pm to 4:00pm

Background

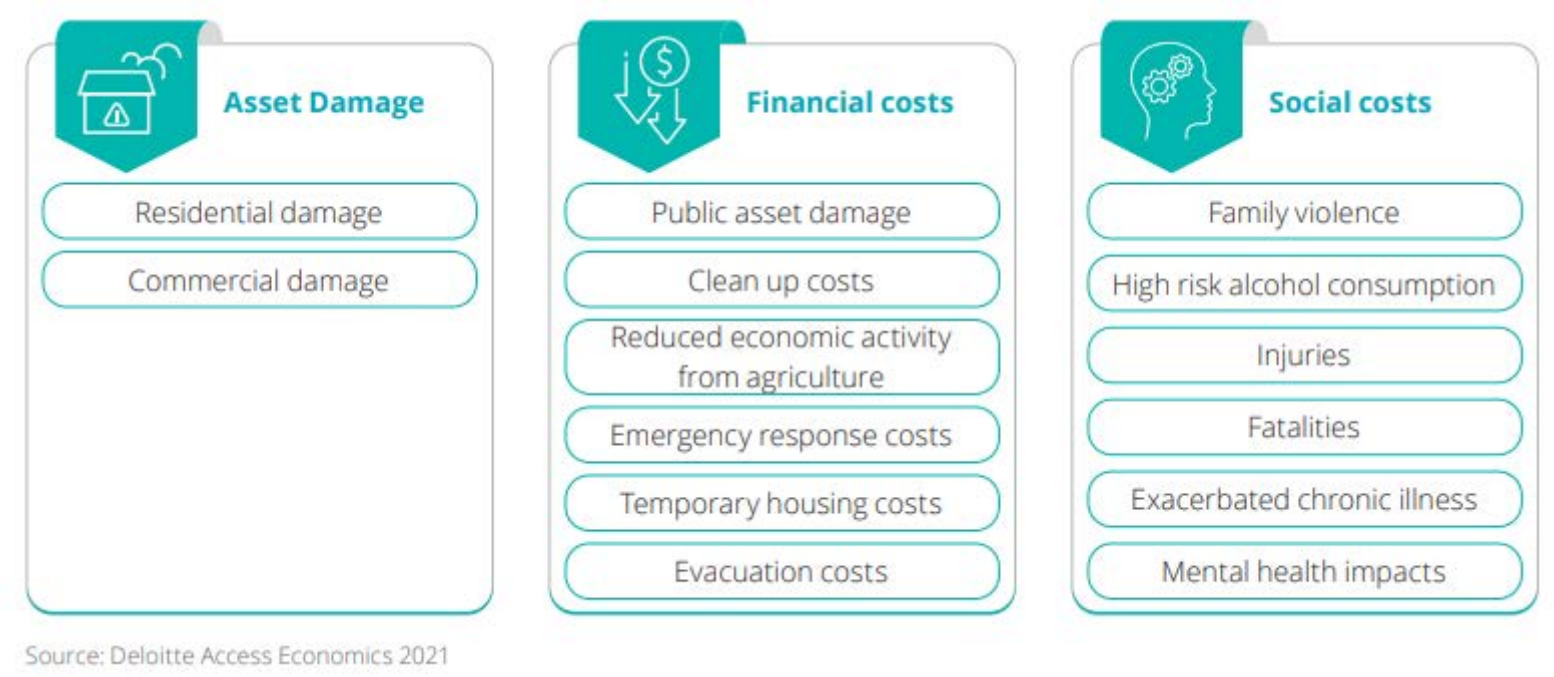
- Five independent reports and recommendations.
- More complete estimate of total economic costs of natural disasters including social costs.
- Assumed natural disasters occur in similar way to the past.
- New information, strong focus, time to update.

2017 estimate: $18.2 billion per year, $39 billion per year by 2050.



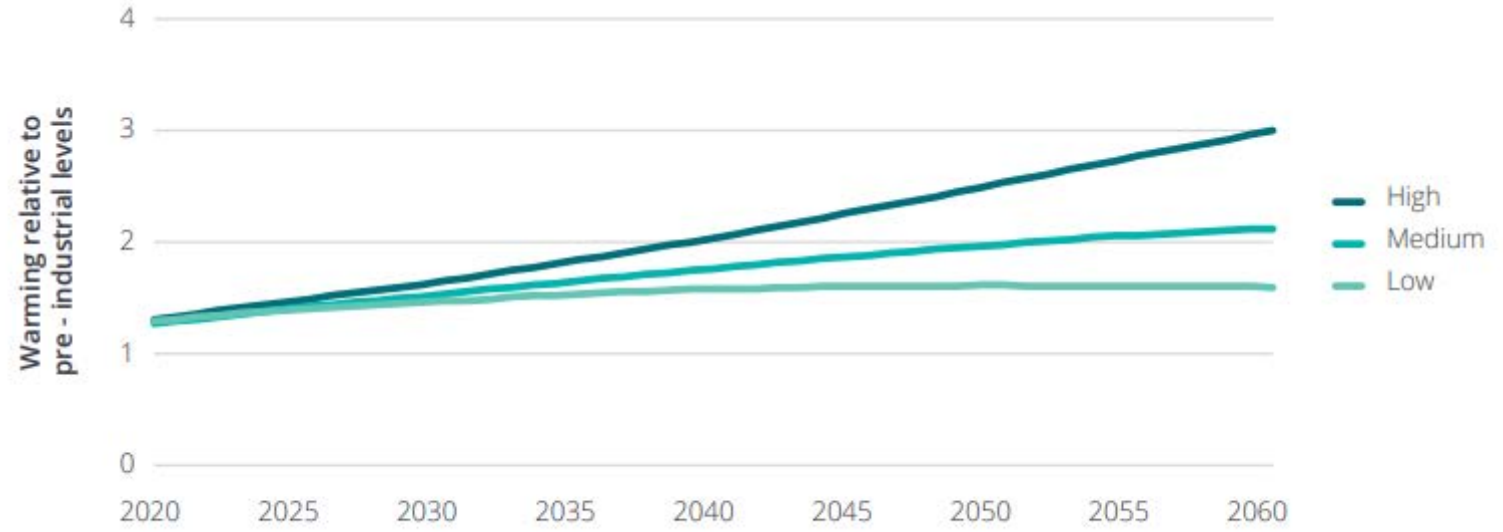


Approach



- Again commissioned Deloitte Access Economics.
- Same cost ‘buckets’.
- New baseline – AAD vs ICA catastrophe losses.
- New climate modelling.
- Assumptions and limitations are included.

Approach



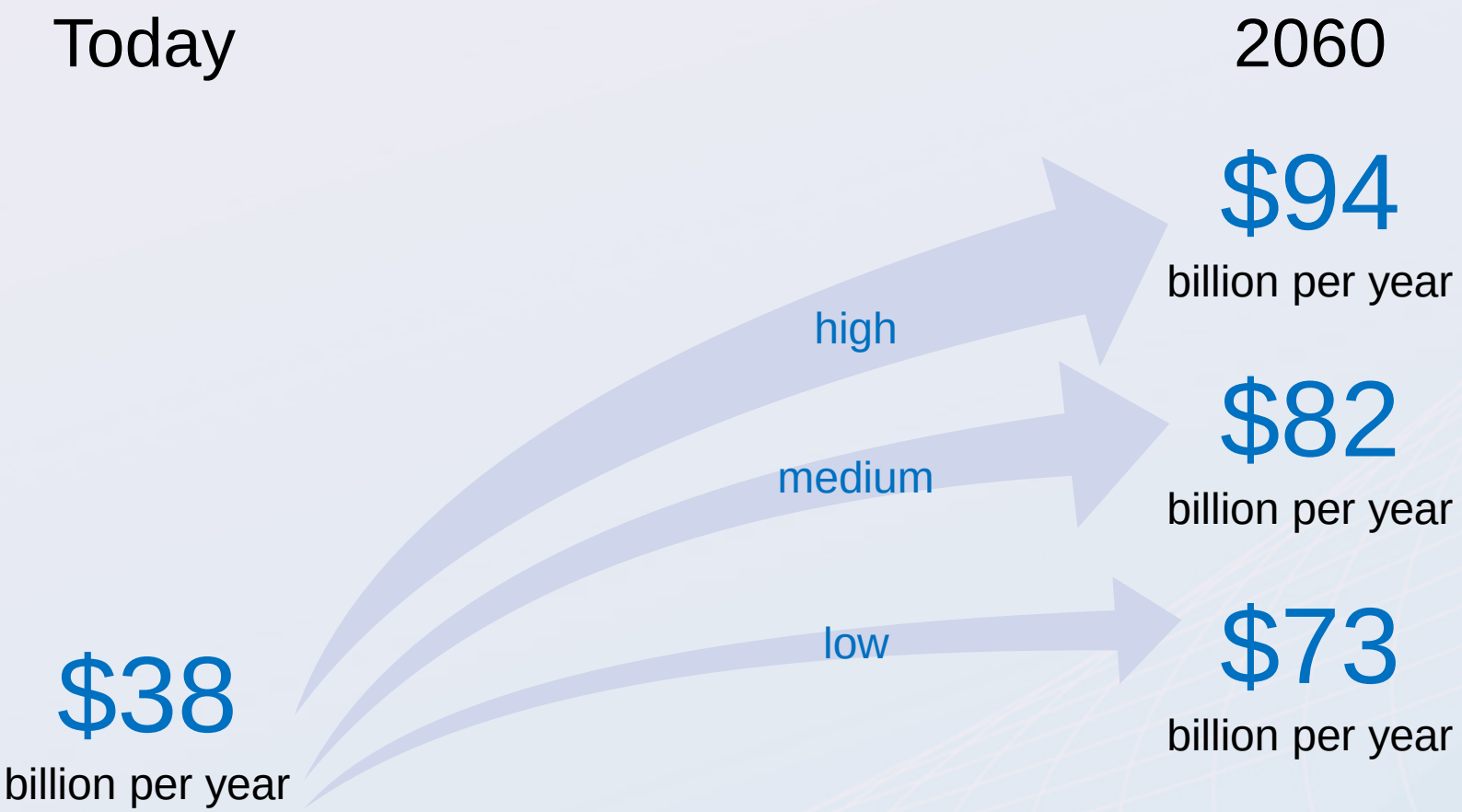
Forecast global warming, degrees Celsius

- Aligned AAD at specific temperature rises to IPCC (AR5) emissions scenarios.
- AR6 indicates temperature increases may occur even earlier – bringing forward costs.

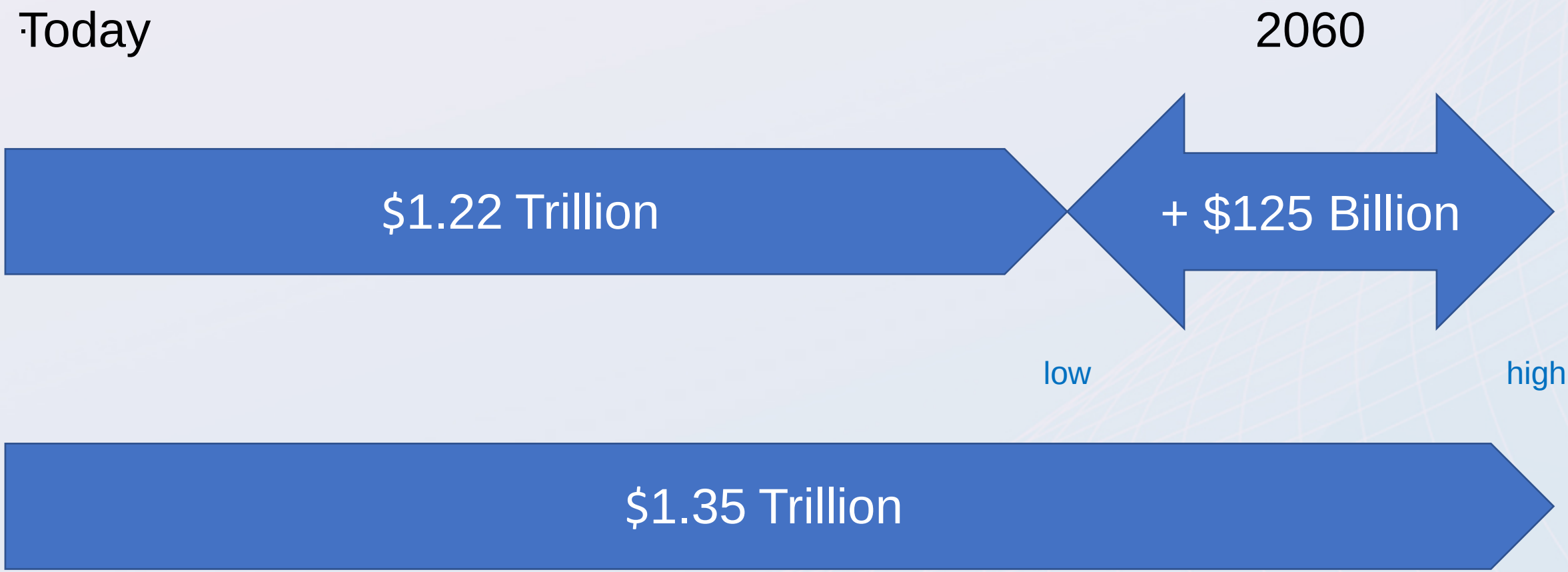
http://australianbusinessroundtable.com.au/

https://www2.deloitte.com/au/en/services/economics.html

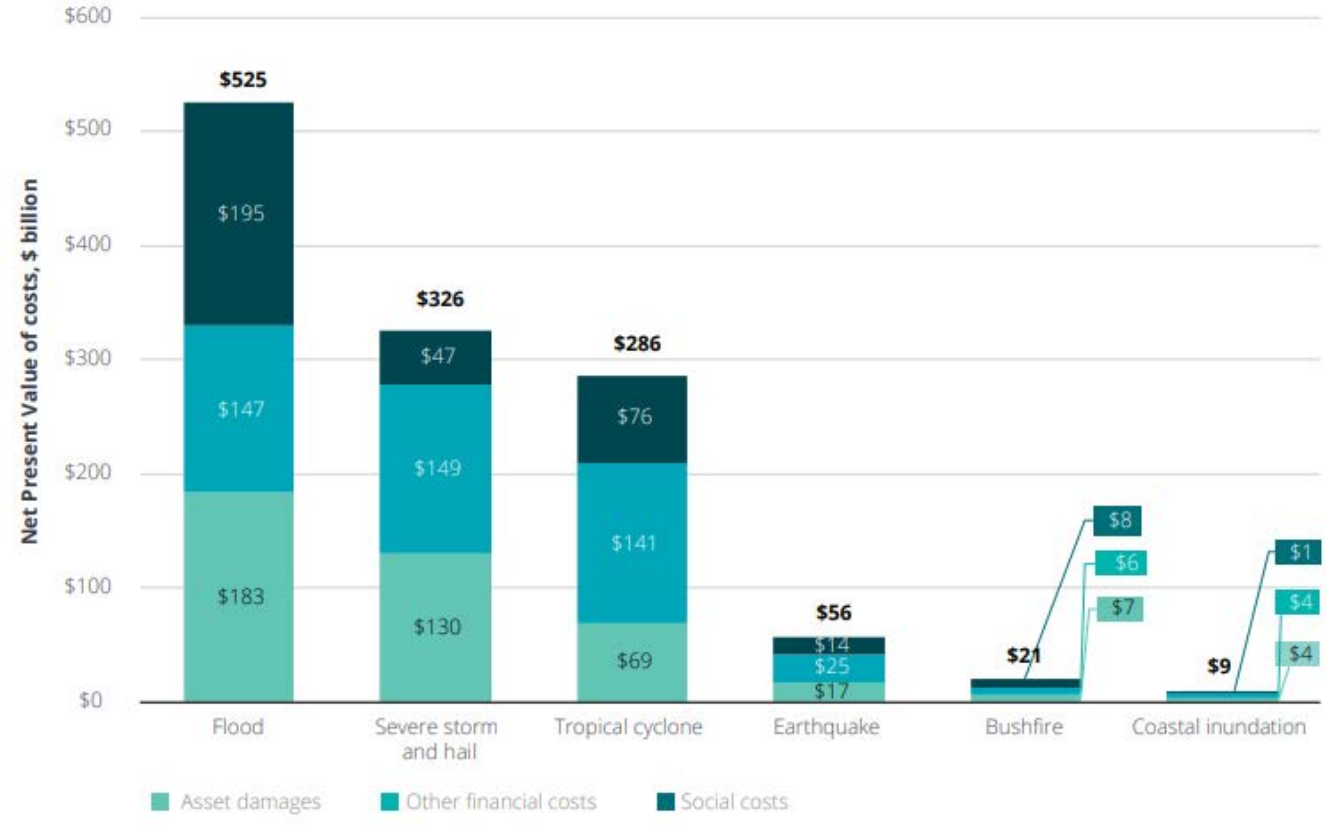
Costs are high and getting higher



Focus on natural disasters still key



Flood remains the largest cost

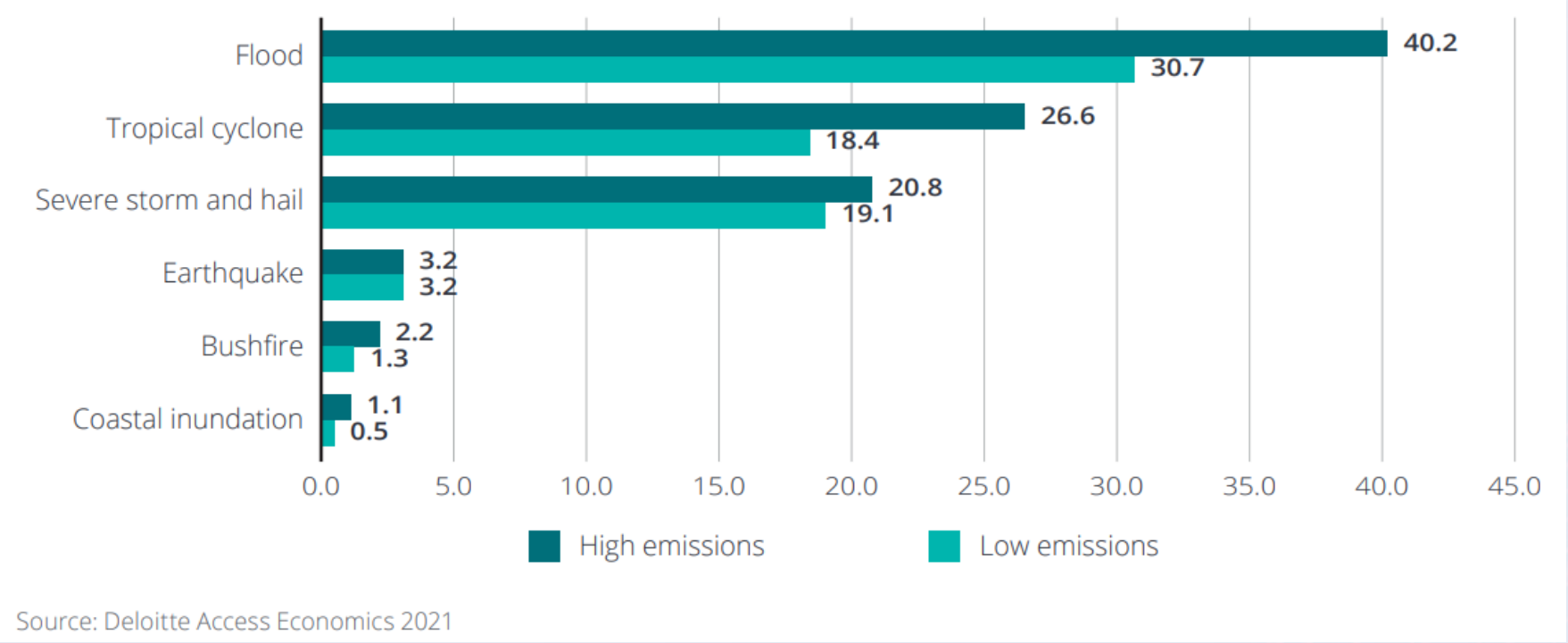


Source: Deloitte Access Economics 2021

- Flood will have the largest total cost, with social costs a significant cost driver.

Present value of economic costs and the components of costs under low emissions scenario by type of natural disaster, $billion

Big differences between low and high scenarios

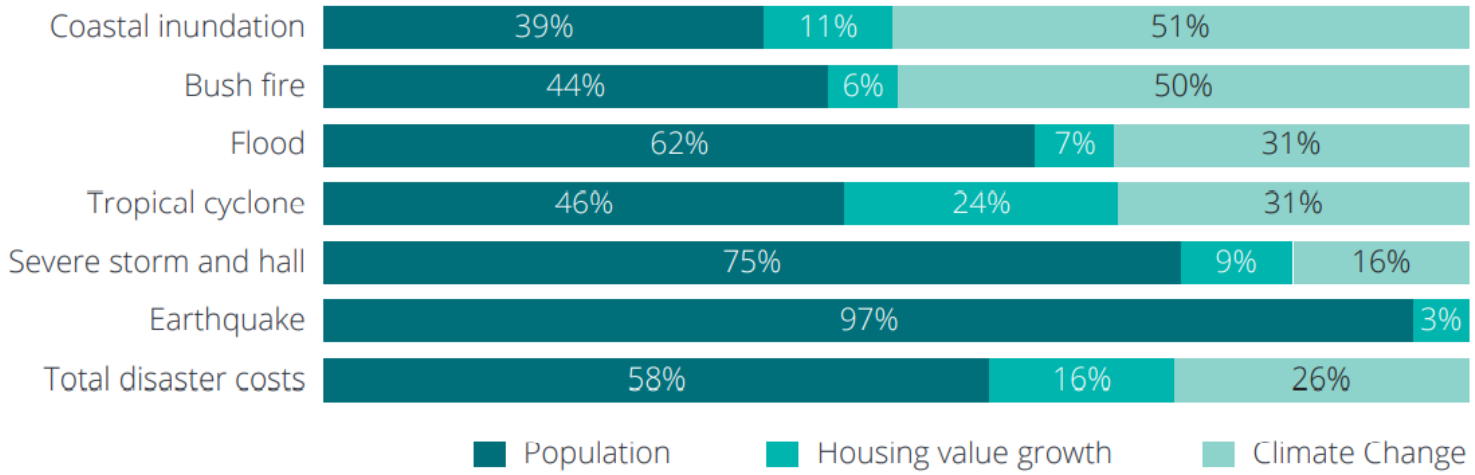


Source: Deloitte Access Economics 2021

Annual economic costs in 2060 by disaster type under the high and low emissions scenarios, $billions

- Flood costs 31% higher / $9.5 billion annually
- Bushfire 70% higher / $900 million annually

Climate not the only driver

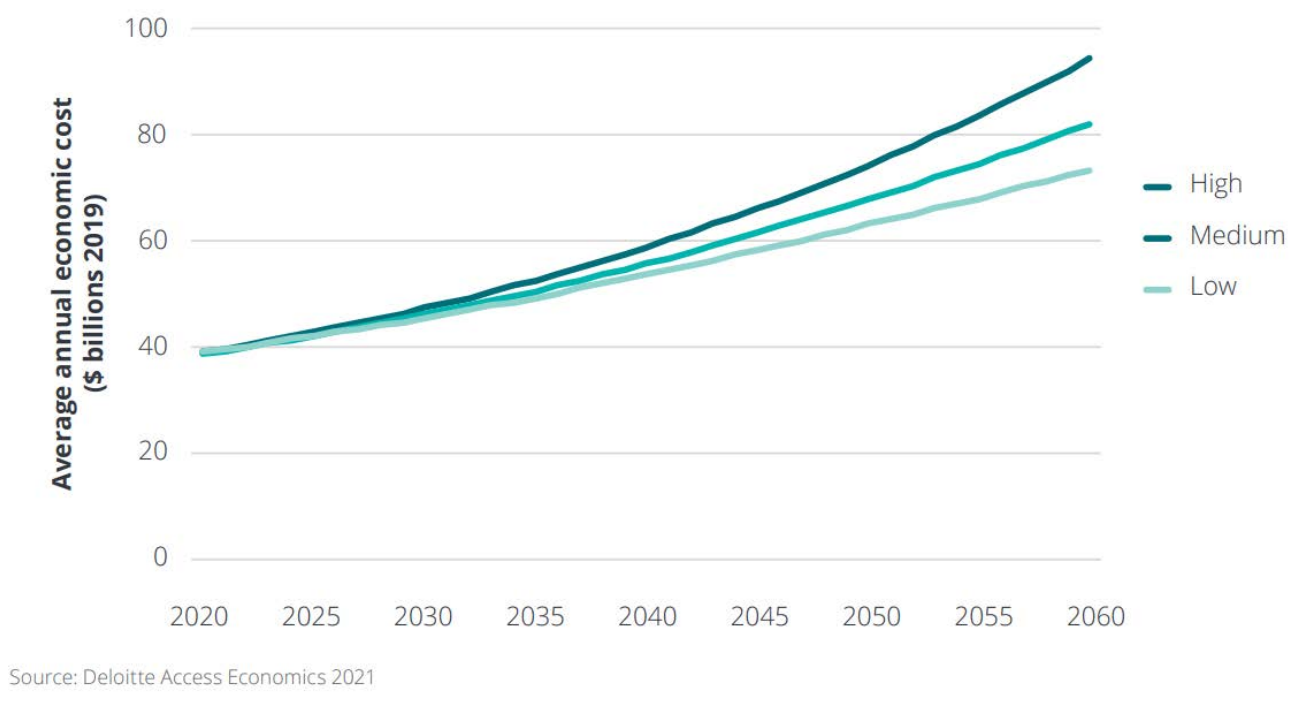


Source: Deloitte Access Economics 2021
Note: The costs associated with earthquakes are not expected to vary with climate change.

Share of increase in economic cost between 2020 and 2060 under a higher emissions scenario

- The impact of climate change will vary by different disaster types.
- Increases in the (real) structural value of housing and population growth are impact.

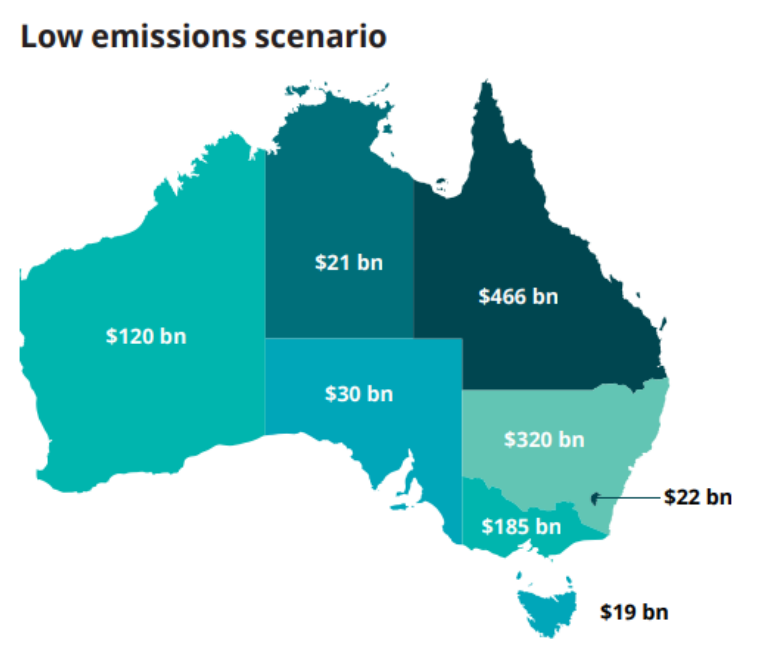
The difference gets bigger over time

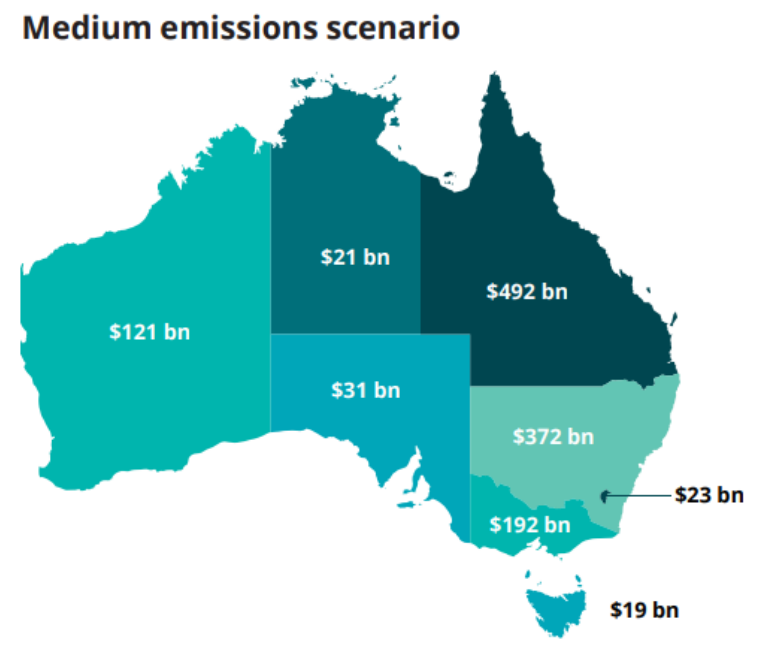


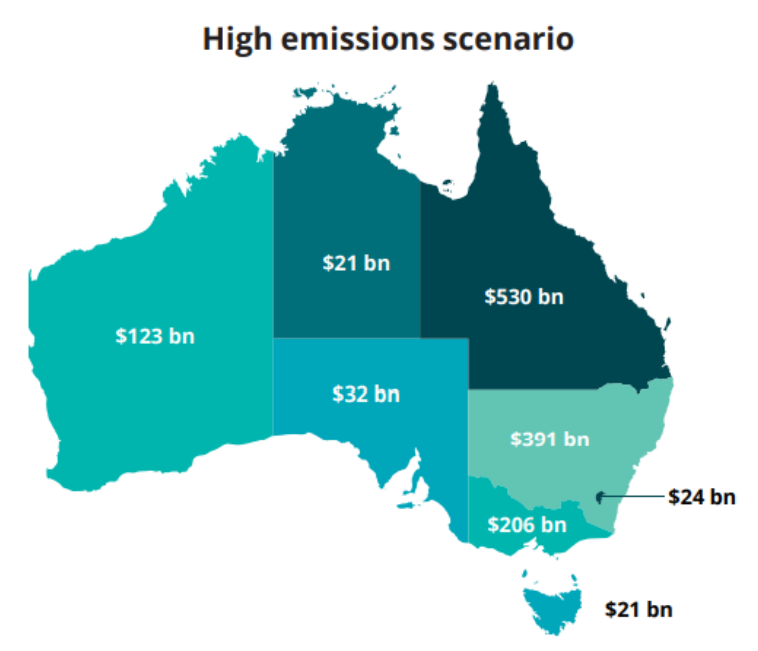
Time path of total economic costs, by emissions scenario

- Climate change impact changes over time
- Only 0.02% difference in 2020 – more than 30% difference by 2060.

South East Queensland and North East NSW most affected



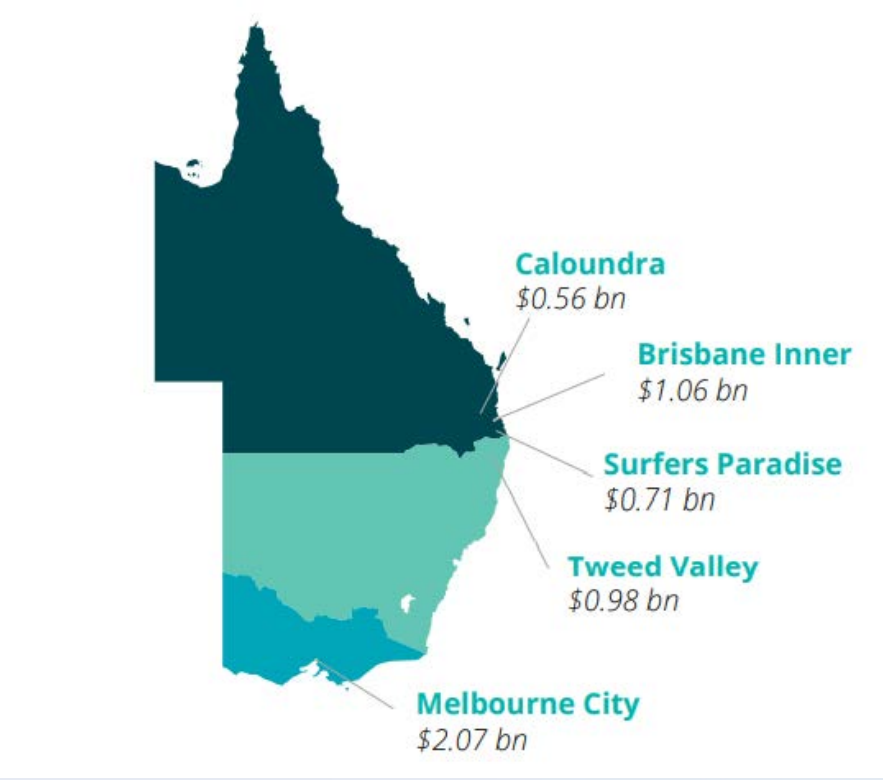




Total economic costs of natural disasters in 2020, by state and territory

Queensland is expected to incur the largest increase in costs of any state, with an additional $64 billion in estimated costs in the high scenario.

Some regions facing very high costs



Regions with the largest increase in costs for high emissions scenario (relative to low scenario), 2060

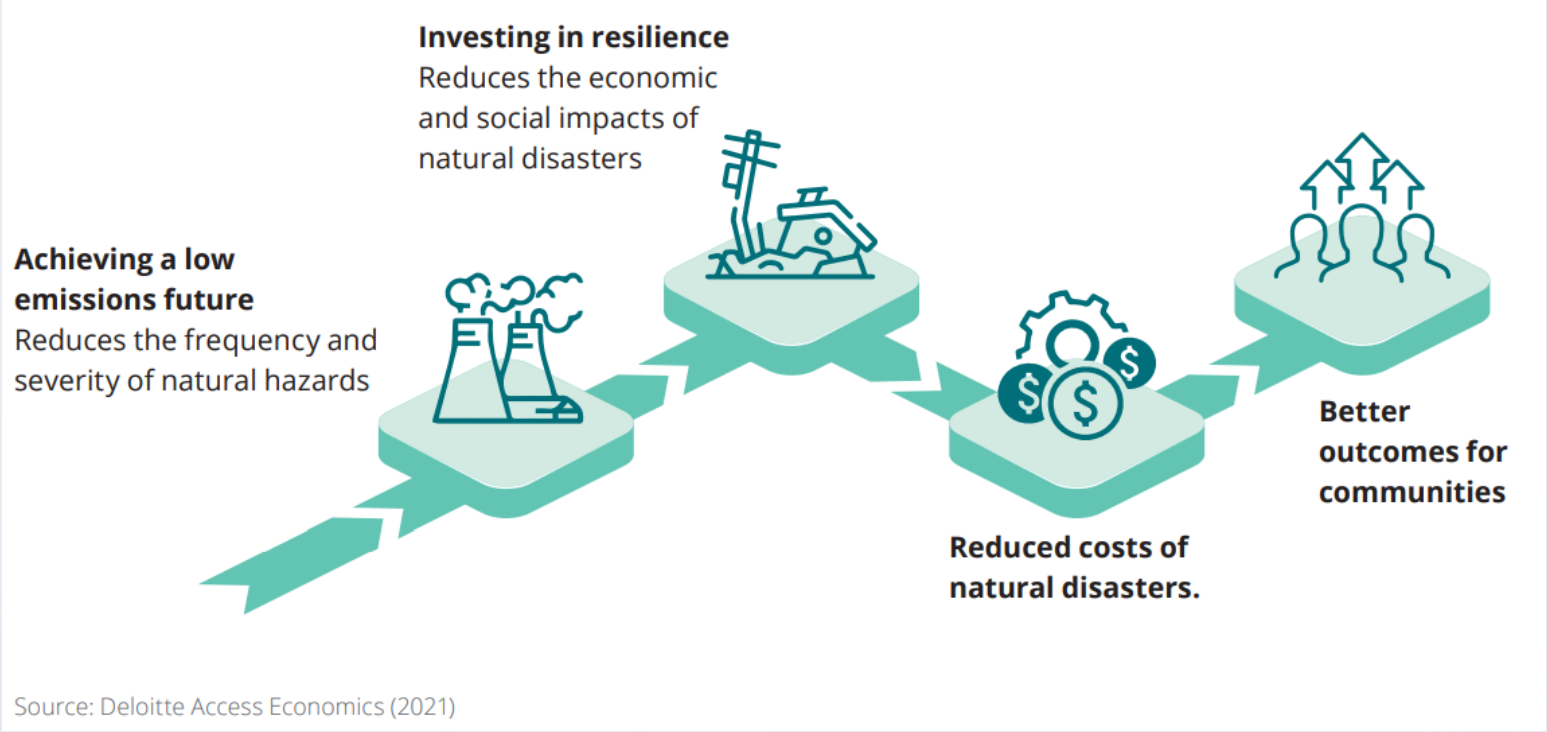
Average Annual Cost of all natural disasters by 2060 for high emissions scenario ($ billion)		
1	Melbourne City	6.2
2	Brisbane Inner	4.3
3	Tweed Valley	2.4
4	Mackay	2.3
5	Townsville	1.9
6	Surfers Paradise	1.7
8	Caloundra	1.3

Costs from new threats

		Cost profile in 2020		Cost profile in 2060	
Region	Emerging disaster type	Total costs ($ million)	Contribution of emerging disaster type	Total costs ($ million)	Contribution of emerging disaster type
Charles Sturt (SA)	Flood	$59	6.3%	$191	56.5%
Ipswich Inner (Qld)	Tropical cyclone	$249	9.2%	$1,217	19.3%
Mid-West (WA)	Coastal inundation	$113	9.4%	$165	18.3%
Bendigo (Vic)	Bushfire	$66	9.9%	$154	17.5%

Climate change will also lead to changes in the types of natural disaster threats regions face.

Implications for investment in resilience



Source: Deloitte Access Economics (2021)

Achieving a low emissions future coupled with increasing investment in resilience to natural disasters will deliver better outcomes for communities.

Q & A

Eamon McGinn, PhD
Partner | Deloitte Access Economics