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BUILDING A BETTER WORLD

MWH Critical Infrastructure Report 2011



Resilience or Resistance?

In an effort to continue its input to the national discourse on infrastructure, MWH commissioned another piece of independent research of Australian households to explore attitudes toward the ability of our critical infrastructure to withstand or recover from the impact of natural disasters.

The research also sought views on whether these events are increasing in frequency and severity, and whether there is a link to climate change. Do Australians feel vulnerable to the impact of a natural disaster? Do they consider government is investing sufficiently and appropriately in critical infrastructure? And importantly, if they believe in climate change as a consequence of human activity, what impact is this having on the frequency and severity of natural disasters?

Our research revealed Australians are becoming increasingly anxious about the threat of natural disasters, both in terms of their impact on Australia as a nation, and in terms of their personal vulnerability to, in particular, a bushfire or a severe drought or flood event.

Nearly half (45%) of Australians support the government doing more to protect Australia and prepare for natural disasters (27% believe the government is doing enough, 28% don't know).

Many (24%) Australians favour making our infrastructure wholly resistant to an event but it is unclear whether they appreciate what that would cost. If they did, they might accept that pursuit to be impractical, if not futile.

The findings raise legitimate concerns about the future and should be incorporated into our planning processes as we repair the damage from recent events and move to deliver in excess of \$700 billion of infrastructure across Australia over the next few years. We all have a role to play in building a future that allows us to cope better with the trials that natural disasters will inevitably throw our way.

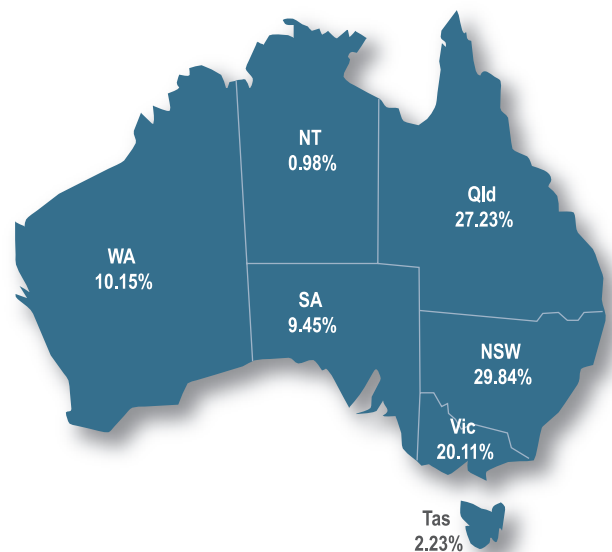


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About the research

Between 1 April and 6 April 2011, MWH commissioned a study to establish the attitude of Australians toward natural disasters – their frequency, severity, cause and impact on both our critical infrastructure and wellbeing.

The survey was conducted online by Lonergan Research of 2,148 Australians, 18 years of age and over.



Results were weighted to the population estimates according to the Australian Bureau of Statistics.

Accessibility/Remoteness Index of Australia (ARIA) scores were applied to allow the data to be analysed according to three broad categories of remoteness: cities, regional and remote.

1. Cause for alarm?

Australians feel the threat of natural disasters.

Overall, the majority of Australians (85%) believe the number of natural disasters this country has experienced recently to be higher than the long-term average (43% much higher, 41% a little higher).

Women are more susceptible to this belief with 91% of females believing disasters are increasing in frequency (compared with 78% of men) and 77% fearing they will become more prevalent over coming decades (compared with 63% of men).

The majority of Australians believe our country is most vulnerable (93% extremely or very vulnerable) to bushfires, followed by drought (91%), flood (84%) and cyclones (73%). Australians living in remote areas feel more vulnerable to all types of natural disaster than those living in cities.

More than one-third (36%) of Australians are more concerned about the threat of bushfire than any other type of natural disaster.

With the memory of *Black Saturday* still present, Victorians feel most anxious about the threat of fire, with one in two (51%) ranking it as their top concern.

Seven in 10 (71%) Australians predict that Australia will experience more natural disasters over the next 20 years than the long-term average (32% much more, 39% a little more).

Table 1.1 - Fear for Country versus Fear for Self

	Australia is extremely/very vulnerable to...	I feel most worried about...
NSW/ACT	Fire	Fire
Qld	Fire/Drought	Cyclone/Flood
Vic	Fire	Fire
SA	Fire	Fire
WA	Fire/Drought	Fire
Tas/NT	Fire/Drought	Fire

2. Direct impact

Natural disasters have affected many Australians in a number of ways.

- 18% have experienced or been evacuated from a significant natural disaster
- 32% have been on alert of a significant disaster which did not ultimately become a direct threat.
- One in ten (10%) have experienced smaller scale or more localised natural disasters
- 36% have friends or family who experienced or had to evacuate from a significant natural disaster
- 13% have been involved in protecting people or property from a natural disaster.

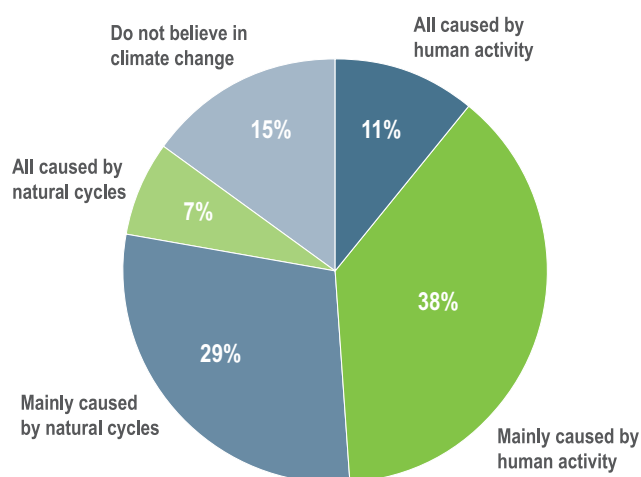
Those living in Queensland are the most likely to have experienced or had to evacuate from a significant natural disaster (31% compared with the national average 18%), to have been on alert from a significant natural disaster (45% compared with national average 32%), and to have friends or family who have experienced or had to evacuate from a significant natural disaster (47% compared with national average 36%).

3. Climate change

Australians believe in climate change.

85% believe that climate change is real, however more than half (58%) of these think the threat and impact of climate change may be overstated.

Chart 3.1 - Attitude of Australians Toward Climate Change



Amongst the believers in climate change, 92% agree that human activity has at least some role. Most (58%) see a strong link between climate change and human activity – 13% believing that climate change is almost entirely caused by human activity and 45% consider human activity to be the main culprit.

75% of Australians believe there is a link between climate change and the frequency and severity of natural disasters (25% a large impact, 50% a small impact).

Those living in Western Australia are the most likely to believe that climate change has an impact on the frequency and severity of natural disasters (79% compared with the national average 75%).

Australians living in remote areas (16%) are less likely to believe climate change has a large impact on the frequency and severity of natural disasters than those in regional (23%) or city (28%) areas.

4. Infrastructure resilience

There is a lack of confidence amongst many Australians in our critical infrastructure.

Just 39% believe our critical infrastructure is strong enough to withstand a large bushfire, 38% a drought, 32% flood, 31% a cyclone, 14% an earthquake and 12% a tsunami.

Only one in four Australians (27%) consider the government is doing enough to protect the nation from natural disasters. 45% believe the government can do more to protect Australians and prepare for natural disasters (28% unsure).

Although only 22% of Australians believe Australia is vulnerable to tsunami, and 17% to earthquake, 51% consider government should be building more early warning systems for earthquakes and tsunamis.

Despite the widespread devastation and loss of life caused by this year's floods and cyclones, those living in Queensland are most likely to believe that the government is doing enough to protect Australians and prepare for natural disasters (32% compared with national average 27%).

5. Government guardian

Australians support government investing more to protect us from natural disasters.

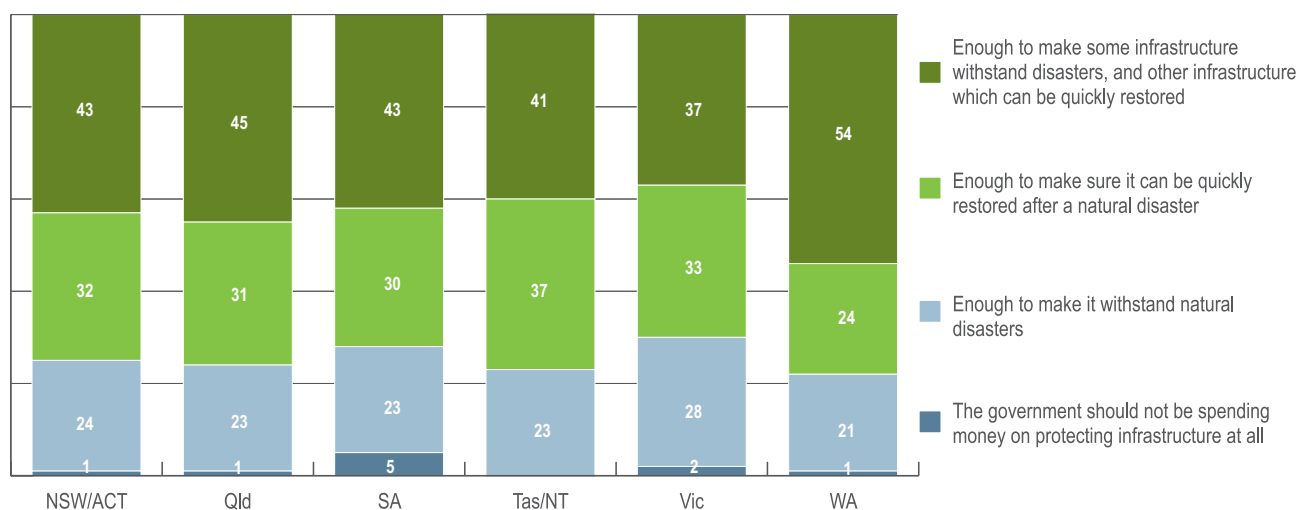
Almost all (98%) Australians support government spending money to make our infrastructure better able to cope with natural disasters.

One-quarter (24%) favour the 'resistance' approach – investing in infrastructure that can withstand natural disasters. This might involve the strengthening of critical infrastructure so it would be better able to withstand the impact of an event (69%) or the construction of dams to collect water in times of drought and protect properties in times of flood (65%).

In contrast, almost one-third (31%) of Australians prefer the 'resilience' approach, favouring a lower level of spending that allows critical infrastructure to be quickly restored in the wake of a disaster. For example, 66% favour decentralised infrastructure so an entire system is not shut down when impacted by an event. Similarly, 62% would like to see Australian Standards updated to mitigate future damage and allow services to be more rapidly restored.

43% believe there should be a balanced approach.

Chart 5.1 – How much should the government be spending on protecting our infrastructure from natural disasters?



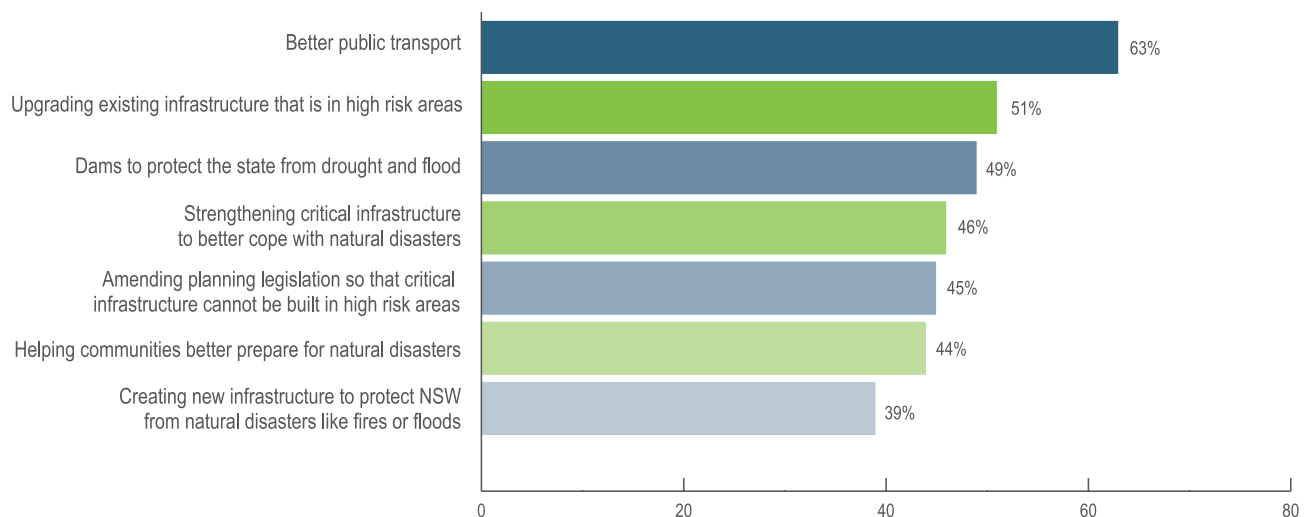
Of interest, despite the insurance fallout following the 2011 Queensland floods the desire of Queenslanders for increased governmental insurance was no greater than for other states. (59% Queensland, 59% total).

6. NSW (the 'Premier State') priorities

Not surprisingly, in New South Wales, residents believe their new State government should be spending more money on critical infrastructure across the board.

Most (78%) NSW residents believe the O'Farrell government should be putting more emphasis on protecting the State from natural disasters than the previous administration.

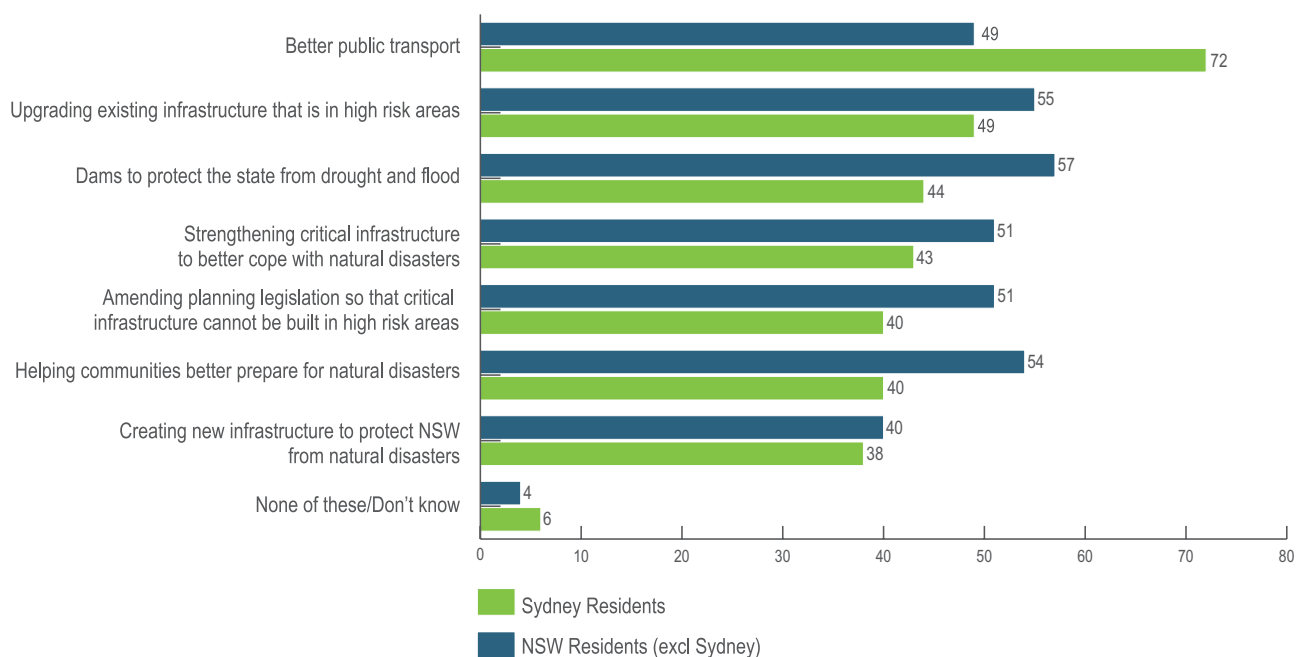
Chart 6.1 - Items the NSW Infrastructure budget should be spent on



Sydney residents have distinctly different priorities to those living in regional and remote New South Wales. 72% of Sydney-siders prioritise better public transport above all else.

In contrast, NSW residents living outside of Sydney want the new government to invest in dams (57%), amending existing planning legislation (54%) and future proofing existing infrastructure in high risk areas (55%).

Chart 6.2 – Desired NSW infrastructure budget priorities (Sydney/non Sydney comparison)



7. Pay to protect

98% of Australians want the government to spend more to make our infrastructure better able to cope with natural disasters.

The research indicates Australians are willing to contribute to that cost but as Table 7.2 shows, the additional amount they would be willing to pay to insure against disruption is only marginally more than the average annual household expenditure.

On average, Australians are willing to spend most to protect the supply of fresh water (\$28.70 per annum), followed by electricity (\$26.90), sanitation (\$26.90), roads (\$23.60) and rail (\$19.50).

City dwellers are willing to spend the most on roads (\$37.80 compared with regional \$34.70 and remote \$34.70) and rail (\$38.10 compared with regional \$30.80 and remote \$32.40).

Overall, Western Australians are prepared to pay most to protect their critical infrastructure against disruptions (Table 7.2).

Chart 7.1 – Average of Australians willing to pay more for infrastructure which can withstand natural disasters

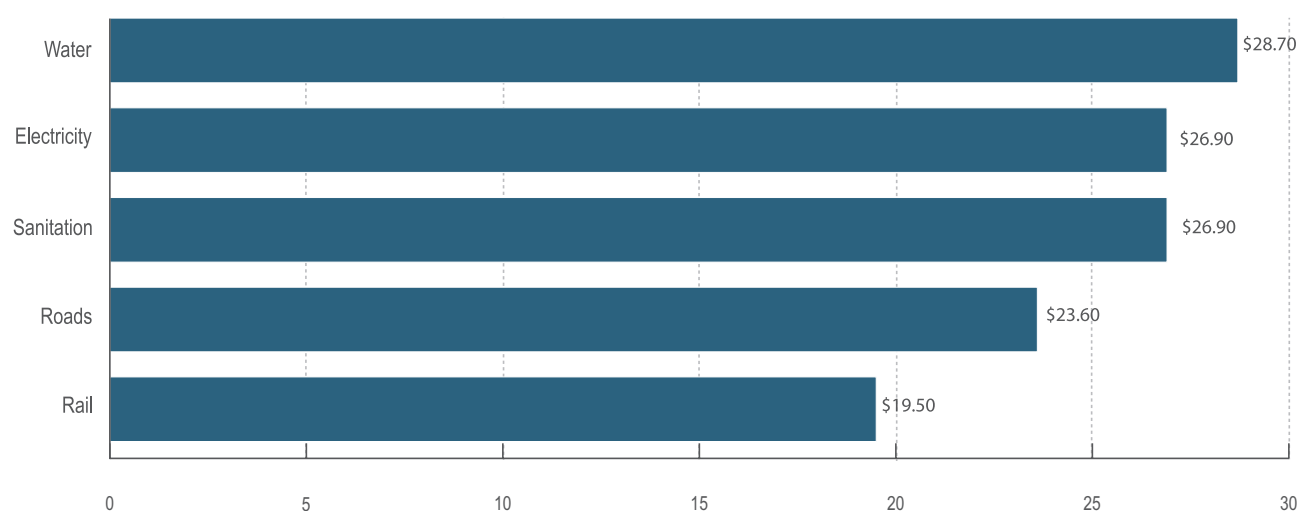


Table 7.2 – Insuring against disruption

	Average annual household expenditure	NSW/ACT	Vic	Qld	SA	WA	Tas/NT
Water	\$480.00*	\$42.60	\$44.90	\$34.70	\$38.70	\$48.50	\$46.40
Electricity	\$1,500.00#	\$40.90	\$41.50	\$35.90	\$32.40	\$48.50	\$41.50
Sanitation	\$505.00*	\$40.30	\$42.60	\$35.20	\$35.70	\$42.80	\$40.40
Road	-	\$38.50	\$38.80	\$32.40	\$33.80	\$37.70	\$25.20
Rail	-	\$38.70	\$37.80	\$30.60	\$28.00	\$35.00	\$18.00
Mean Average	-	\$42.60	\$44.90	\$34.70	\$38.70	\$48.50	\$46.50

*National Performance Report 2009–10 Urban Water Utilities, National Water Commission

Median residential electricity bill (NSW, Qld, Vic), December 2009, IPART 2009 Review of Regulated Retail Tariffs and Charges for Electricity 2010–2013



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