

Major Evaluation

OF THE HAWKESBURY-NEPEAN VALLEY FLOOD RISK MANAGEMENT STRATEGY



Source: INSW (photos Adam Hollingworth)

1. Executive Summary

1.1 Context and background

The Climate Change Fund (CCF) provided funding for Phase One of the Hawkesbury-Nepean Valley Flood Risk Management Strategy (the Flood Strategy) to improve the resilience of the Hawkesbury-Nepean community and prepare for the impacts of climate change on flood risk. Infrastructure NSW (INSW) was the lead agency responsible for implementing the program in partnership with other government agencies and Water NSW.

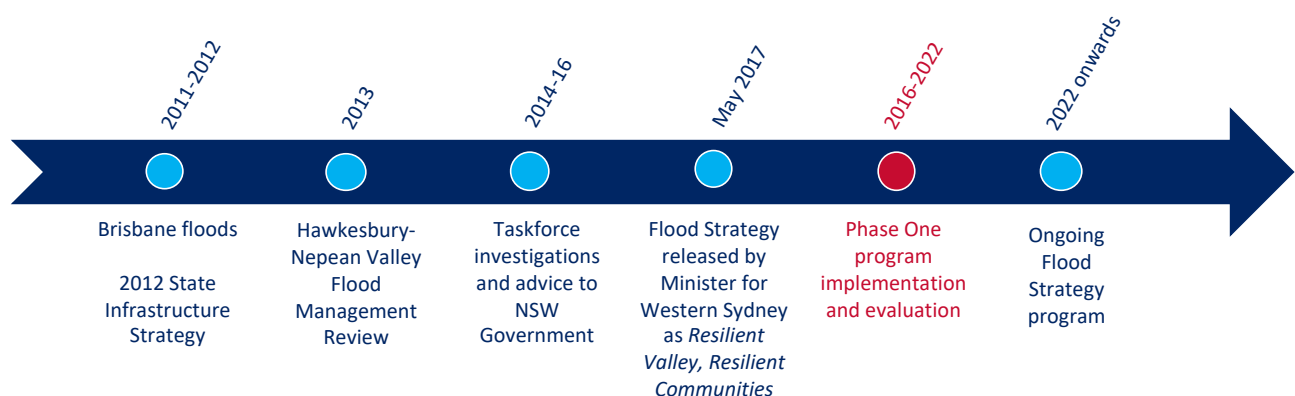
The **objective** of the Hawkesbury-Nepean Valley Flood Risk Management Strategy is to reduce flood risk to life, property and social amenity from regional floods in the Hawkesbury-Nepean Valley, now and in the future.

Due to its large existing population and unique geography, the Hawkesbury-Nepean floodplain has the most significant and unmitigated community flood exposure in Australia. While this is a legacy of past decisions, there is increasing urgency to mitigate the mounting risk driven by the combined effects of climate change and population growth.

The Flood Strategy is an integrated program of initiatives across the disaster risk management spectrum of prevention/mitigation, preparedness, response, and recovery (PPRR), recognising that there is no single or simple means of reducing existing and future flood risk in the valley.

The Flood Strategy comprises a suite of integrated measures to mitigate flood risk. The Climate Change Fund provided \$58.46 million for Phase One of the Flood Strategy, which started in late 2016 and concluded in early 2022. Key milestones in the Flood Strategy's timeline, from investigations through to staged implementation, are illustrated in Figure 1.

Figure 1 Key milestones in the Flood Strategy's development and implementation

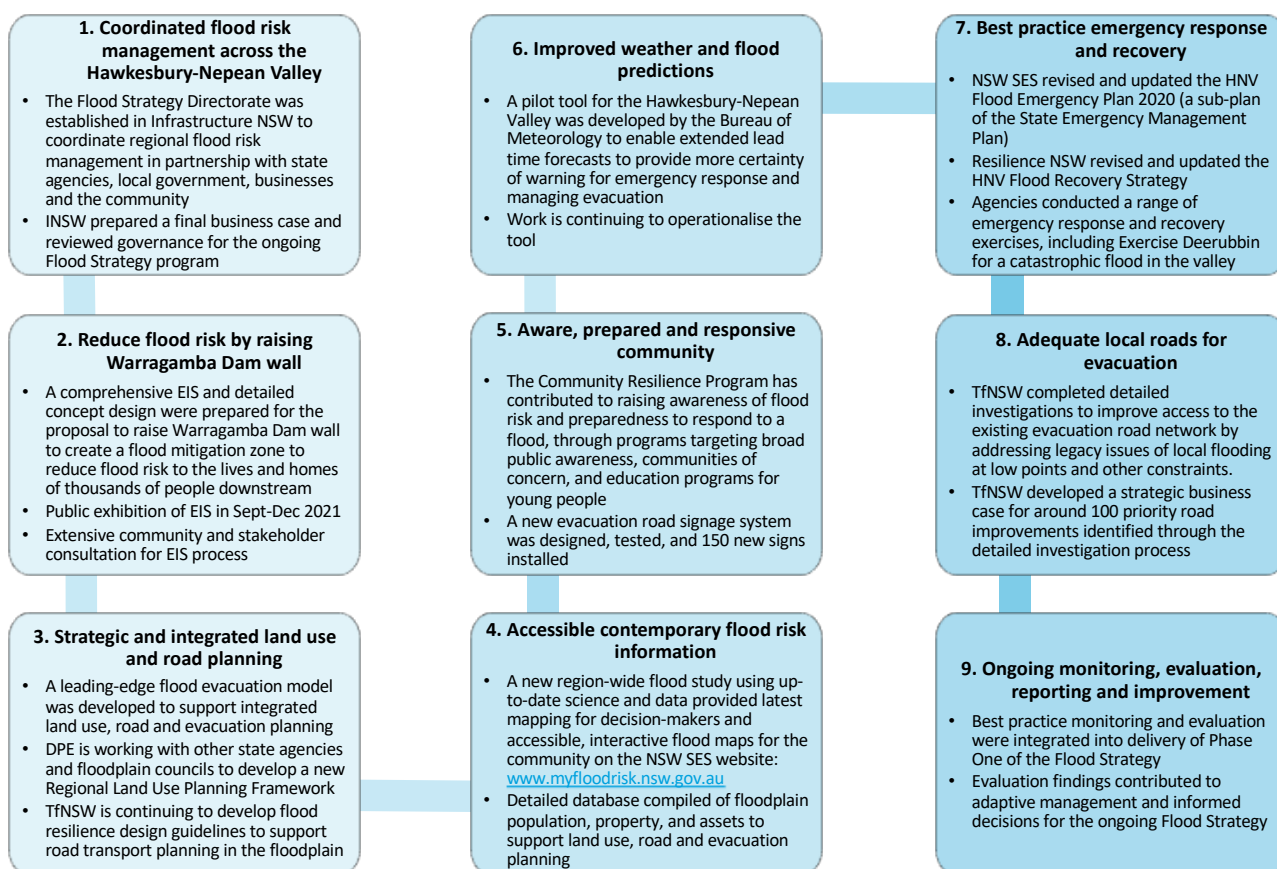


Phase One of the Flood Strategy included around \$30 million to undertake detailed planning, environmental assessments and community consultation for the proposal to raise Warragamba Dam wall by around 14m to create a flood mitigation zone, plus around \$28 million for a suite of complementary actions to reduce flood risk in the Valley. Further background information is available at www.infrastructure.nsw.gov.au.

The **purpose** of the evaluation was to assess performance to the end of Phase One of the Flood Strategy, and to guide adaptive management for the ongoing program. The evaluation **methodology** used comparative analysis, qualitative assessment and contribution analysis to respond to the key evaluation questions with a focus on efficiency, effectiveness, appropriateness, and learnings from new flood events.

Figure 2 summarises key achievements to April 2022 under the Flood Strategy’s nine outcomes. The evaluation findings contributed to the preferred package of measures for ongoing implementation of the Flood Strategy to improve the flood resilience of the Hawkesbury-Nepean community and prepare for the impacts of climate change on flood risk.

Figure 2 Key achievements under the Flood Strategy’s nine outcomes

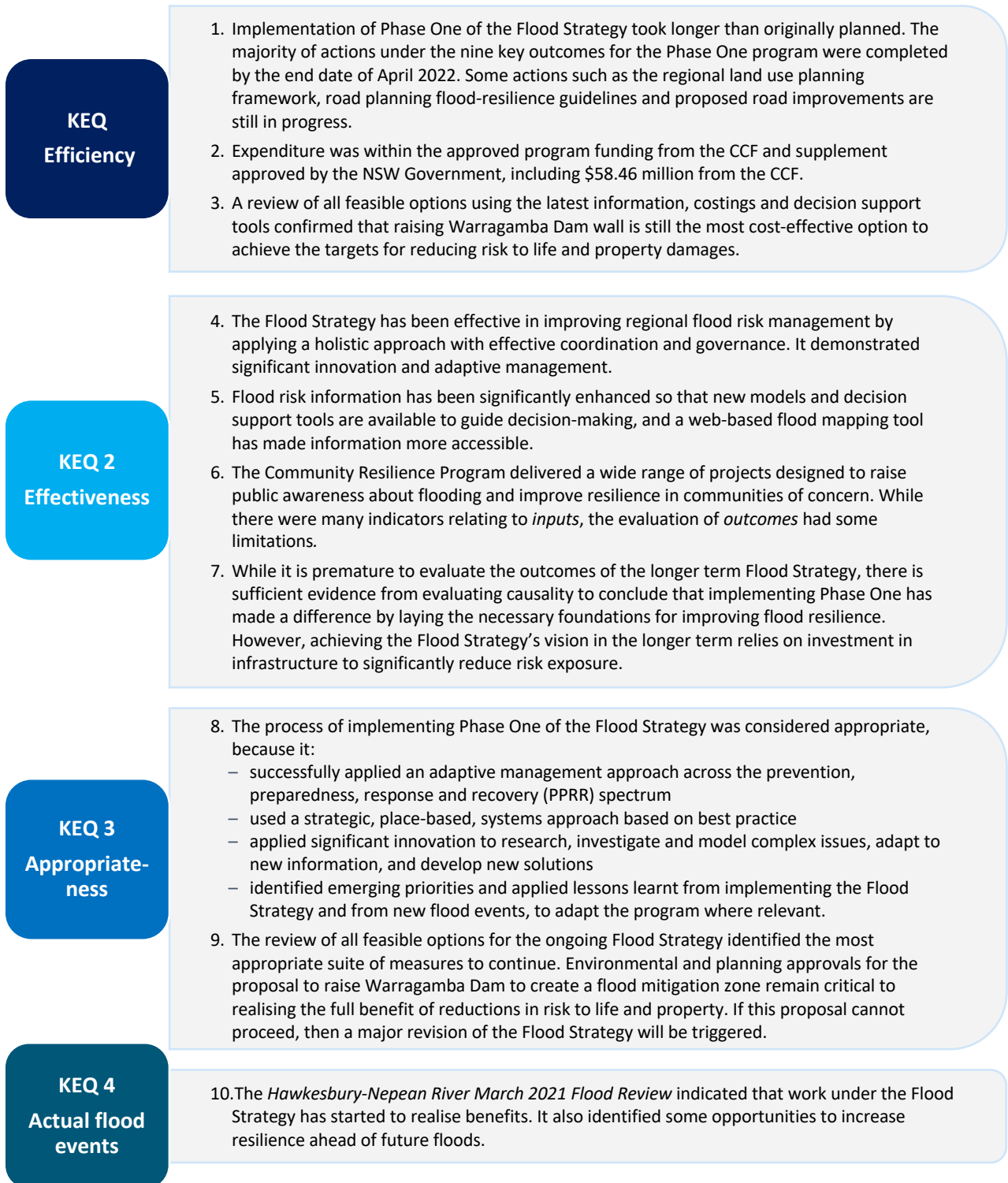


1.2 Key findings

The Flood Strategy implemented a best practice evaluation framework – including process, outcome and economic evaluation – based on the CCF evaluation framework (OEH, 2017). A mid-term evaluation was conducted in 2018. Prior to completing this final evaluation report for the end of Phase One funding from the CCF, INSW published the [Phase One interim evaluation report](#) in 2021 for a wide community audience.

This final report presents the key outcomes from the major evaluation of the Flood Strategy implementation to the end of the Phase One program in April 2022. Key findings from the program evaluation are summarised in Figure 3. In addition, a comprehensive evaluation of the March 2021 flood was published on the INSW website: [Hawkesbury-Nepean River March 2021 Flood Review](#). Analysis of data from the 2022 floods was still in progress when this evaluation report was prepared.

Figure 3 Summary of evaluation findings



Recent flood events, in February 2020, March 2021, March-April 2022 and July 2022, reinforce the reality of flood risk in the Hawkesbury-Nepean Valley. The important **legacy** of Climate Change Fund investment in Phase One of the Flood Strategy is an ongoing program of infrastructure works and complementary

measures to improve flood resilience, embedded into core business of government, that will generate lasting benefits for the community of the Hawkesbury-Nepean Valley and the wider community of NSW.

1.3 Recommendations

The recommendations from the major evaluation are summarised in Table 1.

Table 1 Summary of recommendations

Recommendation	Responsibility	Relates to finding number
1 Ensure program milestones are realistic and take account of funding and resource availability, project interdependencies and critical path planning.	INSW All delivery agencies	1
2 Reset the strategic coordination and governance arrangements between Infrastructure NSW and other delivery agencies as the Flood Strategy transitions from the defined Phase One program to an ongoing function of government. Key focus areas include: <ul style="list-style-type: none"> – systems to maintain the integrity of essential flood risk information, models and decision support tools – embedding key responsibilities into business-as-usual for partner agencies – legislative, regulatory and operational changes for WaterNSW to operate Warragamba Dam for flood mitigation (if approved). 	INSW (lead) All delivery agencies	4, 5
3 Review the performance measures for <i>effectiveness</i> of the Community Resilience Program in (1) raising public awareness, and (2) achieving sustained behaviour change in the targeted communities of concern. Also consider the potential for related programs to contribute to multiple lines and levels of evidence for future evaluations (such as the state-wide all-hazards <i>Get Ready</i> program led by Resilience NSW).	INSW NSW SES Resilience NSW	6
4 Evaluate the achievement of longer term outcomes from the Flood Strategy using a benefits realisation framework, adapted as needed in line with government policy and decision-making.	INSW (lead) All delivery agencies	7
5 Continue to provide objective information about the social, economic and environmental issues for alternative options to reduce flood risk, to assist government and the community to understand and balance these complex issues.	INSW	9
6 Monitor, evaluate and report on actions to respond to the findings from the <i>Hawkesbury-Nepean River March 2021 Flood Review</i> .	INSW NSW SES Resilience NSW	10