1.5% AEP flood is the name given to a flood event which has about a 1 in 70 or 1.5% chance of occurring in any year.

1% AEP flood is the name given to a flood event which has a 1 in 100 or 1% chance of occurring in any year. It would be similar to the January 2013 flood.

Option C – Bundaberg North levee and floodway

Option C involves constructing a levee around most of Bundaberg North. Lakes and widening of the rail bridge at Hanbury Street would also be required to improve conveyance through Bundaberg North.

Stage 2 of the Bundaberg flood protection study involves assessing 11 flood mitigation options, including those identified through consultation with the Bundaberg community in late 2015.

The following provides an overview of the assessment of Option C.

Viability
A key step in the options assessment involves identifying issues that may mean construction or implementation of the option is not viable. These relate to matters such as:

- The likelihood of obtaining environmental approvals, due to unacceptable environmental impacts
- Significant or unaffordable costs of construction or ongoing maintenance
- Potential for unacceptable impacts on other areas.

An option is considered to be unviable where the assessment identifies one or more of these matters are ‘unlikely to be achieved’.

The assessment of Option C found that this option may be viable with modifications to reduce costs and impacts to areas outside of the benefited area. However any modifications are likely to decrease the reduction of flood damages achieved.

Costs and benefits
Initial cost estimates indicate that construction of Option C would be approximately $85 million. This would include about $20 to $30 million for the levee and about $50 to $60 million for construction of the floodway (including property acquisitions). The total cost of the option including ongoing maintenance is estimated at $100 million.

Estimated reduction in flood damages (i.e. the tangible benefits) would be in the order of about $11 million.

Summary of assessment against key criteria

- This option would direct floodwaters around Bundaberg North through the construction of a levee and floodway (lake) system.
- This option would provide protection for about 450 properties up to the 1.5% AEP flood event.
- For events rarer/larger than the 1.5% AEP flood event, initial overtopping of the levee would occur along the northern (earth) sections, rather than a sudden overtopping, allowing safer evacuation.
- There is a risk that people inside the levee may become complacent about flood risk and become less resilient during events that overtop the levee.
- The levee would have a major impact on the urban area, restricting access and creating a visual barrier.
- Increased flood levels of up to 0.6m would be experienced by some properties outside of the levee.
- The total cost of construction and ongoing maintenance of this option would be about $100 million.
- The costs for this option would be about 10 times the estimated monetary benefits.

---

1.5% AEP flood is the name given to a flood event which has about a 1 in 70 or 1.5% chance of occurring in any year.

1% AEP flood is the name given to a flood event which has a 1 in 100 or 1% chance of occurring in any year. It would be similar to the January 2013 flood.
Option overview
Option C aims to direct floodwaters to the west of Bundaberg North through the construction of a levee and floodway system. It would involve:

- Construction of a levee around parts of Bundaberg North, comprising both concrete and earth levees.
- Construction of floodgates at intersections of the levee route with roads.
- Construction of a floodway (lakes) between the Burnett River and Hinkler Park, replacing the flow capacity lost through Bundaberg North.
- Lowering of ground levels between the Burnett River and proposed lakes, widening of the railway bridge near Hanbury Street and regrading of Thornhill Road to improve the flow of floodwater through the floodway.

The southern part of the levee would be constructed to the 1% AEP flood level (with a freeboard). The northern part of the levee would be constructed to the 1.5% AEP flood level. In large events, this would allow initial overtopping of the levee to occur along the northern (earth) sections, rather than a sudden overtopping, allowing safer evacuation. Construction of this option would require some property acquisitions.

Figure 1: Option layout

Find out more about this option
Community consultation on the flood mitigation options and the findings of the options assessment will take place from 24 October to 20 November 2016. To find out more about the flood mitigation options and to provide your feedback:

Visit the website
www.qld.gov.au/bundabergfloodstudy

Interactive mapping is available on the website so that you can see how the flood mitigation options would change flooding in your area.

Contact the project team
Email: bundabergfloodprotection@jacobs.com
Telephone: 1800 994 015 (during business hours)

Next steps
The Bundaberg flood protection study is due to be completed later this year. Engagement on the 10-year action plan will occur in 2017. It is important to note that the flood mitigation options have not yet been considered by the State government and are not government policy. No commitment will be made on any of the options until the State government has consulted with the community and stakeholders on the 10-year action plan.

The Queensland Government will continue to engage with the Bundaberg community as the action plan develops.