

Working together: flood mitigation options

Transcript

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In this video, I'll introduce the shortlist of potential flood mitigation options and how they can work together to reduce flood risk.

I'll also explain how the example combinations in the Flood Mitigation Explorer are used to demonstrate different ways these options can be combined to achieve varying flood risk reduction outcomes, and how we are seeking community feedback on this as part of Phase 3 engagement.

As mentioned in the previous video, there is no 1-single option that will help to reduce flood risk. Flood mitigation usually works best when multiple different types of options are considered and combined together. Because of the size and complexity of the Maribyrnong catchment, no single solution can address the problem on its own.

A 'combination of options' refers to a group of flood mitigation measures that work together to help reduce flood risk across the catchment, with different combinations delivering varying levels of flood risk reduction depending on the trade-offs involved.

Flooding occurs across the entire Maribyrnong catchment – from upstream to downstream.

So:

- Actions upstream affect downstream flooding in the lower catchment
- Structural and non-structural measures need to work together
- And, trade-offs are unavoidable.

To guide discussion, we've identified a shortlist of potential flood mitigation options and explored how they can work together.

Our digital tool, the Flood Mitigation Explorer presents a range of possible combinations of these options, that reflect varying levels of flood risk reduction based on different trade-offs.

These combinations are to help with discussions. They are not final proposals or plans and you are not being asked to choose between them. Instead, they demonstrate how different options can be combined in different ways to achieve varying levels of flood risk reduction outcomes.

Each combination includes a mix of:

- Structural measures (like levees and retarding basins); and
- Non-structural measures (like flood warning and community preparedness)

Structural options

These options physically change how water moves through the catchment, for example:

- Retarding basins are large areas of land that are set aside to store large amounts of water during a flood event. They remain dry for most of the time but are designed to flood during large storm events.
- Levees are large structures like walls or earthen embankments designed to protect areas (like a shield) from flooding. Levees are designed to keep water away from low-lying areas and within the main river corridor.
- Culverts or bridge improvements help to move water past large infrastructure like railway embankments or bridges. These works improve the capacity for water to pass through this infrastructure during flood events.

Non-structural options

These focus on reducing the impacts of flooding, such as:

- Flood warning systems
- Community preparedness
- Flood-resilient homes

Both structural and non-structural are important and often work best together.

Some options may only have a small impact on their own, but when combined, they can significantly reduce flood risk.

That's why we've focused on how options work together, not just individually.

Each combination applies different options to:

- Reduce flood levels in key locations across the catchment
- Improve community safety
- Minimise damage to homes, businesses and infrastructure
- Balance cost and long-term value.

These combinations were developed using a Decision Framework which involved:

- Flood modelling
- Cost-benefit analysis
- Community feedback and priorities

Each combination has been assessed using a cost-benefit analysis.

This helps us understand:

- How much flood damage can be avoided
- How much each combination of options costs
- And which combination provides the greatest overall benefit

Importantly, we don't just look at financial outcomes. We also consider a range of factors like:

- Environmental values and impacts
- Social and community wellbeing
- Ease of construction
- Planning and approvals
- Impacts on parks, recreation and local places
- Cultural and traditional owner values
- Mental health and disruption during flood events.

Scenario 1: which has a 'Low level of flood risk reduction, with low cost and low complexity; and generally reduces the flood depth but still result in over-floor flooding.

Scenario 2: which has a 'Higher level of flood risk reduction' with up to about 75% reduction in over floor flooding but has high costs & is complex.

Scenario 3: which has the Highest level of flood risk reduction with up to 95% reduction in over floor flooding, but has the highest cost and is the most complex.

Each combination or to achieve the varying levels of flood protection has strengths and trade-offs.

- They involve trade-offs, including:
 - Cost vs level of flood protection
 - Local impacts vs broader benefits
 - Speed of delivery vs long-term outcomes
 - Changes to landscape and amenity
 - Different environmental, social or community impacts.

That is why your feedback is so important.

We're interested in understanding:

- What you think of each level of flood protection– and why
- What you see as the strengths or concerns
- How each option or level of flood protection might affect your area
- What trade-offs feel acceptable

Your feedback will help us balance technical analysis with community values and needs.

To explore the short list of options in more detail and to view the flood protection level examples with different options being combined:

- Visit the project page
- Use the Flood Mitigation Explorer tool
- Join a community session
- Or speak directly with our team

Your feedback will help us identify a preferred approach or plan to take forward which is a critical step toward seeking future funding and delivery of works.

Your input plays an important role in helping shape the future of flood mitigation in the Maribyrnong catchment.

We encourage you to take a look and share your feedback.