

7. Begola Wetland Retarding Basin Upgrade

WHAT IS THE PROJECT?

This project involves upgrades and expansion of the existing Begola Wetland system, including potential expansion of the wetland area west of Aldebaran Road.

This option would allow the wetland system to operate as a larger retarding basin.

A retarding basin is a stormwater storage area that temporarily holds water during heavy rainfall and slowly releases it back into the drainage system. This helps reduce peak stormwater flows and may reduce flooding impacts downstream.

By increasing the available storage within the Begola Wetland system, this option may help capture more stormwater during major rainfall events and reduce peak flood levels in the surrounding area.

HOW WOULD THIS HELP?

- > The study suggests this option could reduce flood risk for approximately 13-20 properties during an intense rain event (1 per cent AEP).

FURTHER INFORMATION:

- > This project has relatively high constructability in terms of access, potential clashes and overall construction efficiency.
- > The expansion of the western wetland area may require relocation of existing sewer infrastructure. This would be a significant and costly undertaking and would need to be carefully assessed through further design.
- > The Begola Wetland system is also environmentally sensitive and provides habitat for local flora and fauna. Any future works would need to be carefully planned and supported by detailed biodiversity and environmental assessments to understand potential impacts and feasibility.



Figure 19: Begola Wetland Retarding Basin Upgrade (West).



Figure 20: Begola Wetland Retarding Basin Upgrade (East).

WHAT DOES FLOOD RISK LOOK LIKE IF THIS PROJECT IS BUILT?

The diagrams below show the modelled change in flooding if this option was delivered.

 Green = Decreased flooding  Pink = No longer occur for the event shown.

Different shades of green show different levels of flood reduction. In some areas, even a small reduction in flood depth may help reduce the potential impact of flooding during a major storm event.

Figures 21 and 22 show modelling results for Begola Wetland RB Upgrade (West) option

Modelled flooding risk after project built (20 per cent AEP)



Figure 21: 20 per cent annual exceedance probability (AEP) modelling results.

Modelled flooding risk after project built (1 per cent AEP)

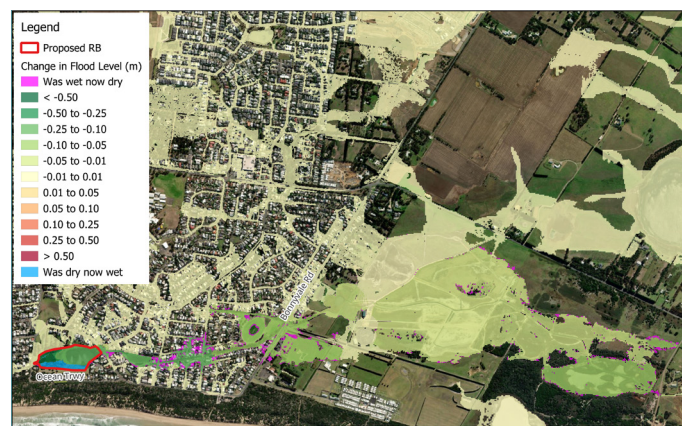


Figure 22: 1 per cent annual exceedance probability (AEP) modelling results.

Figures 23 and 24 show modelling results for Begola Wetland RB Upgrade (East) option

Modelled flooding risk after project built (20 per cent AEP)



Figure 23: 20 per cent annual exceedance probability (AEP) modelling results.

Modelled flooding risk after project built (1 per cent AEP)

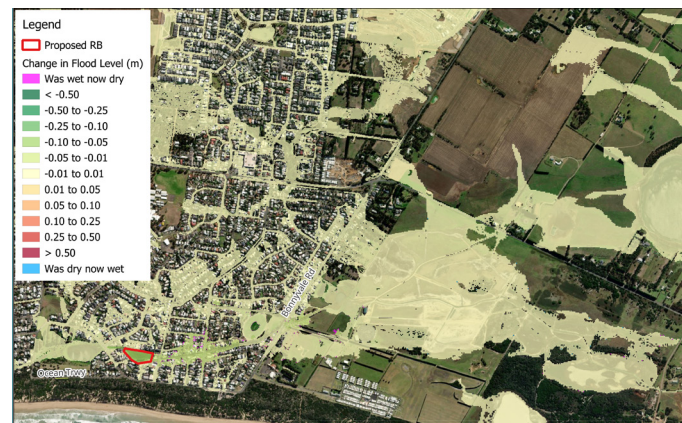


Figure 24: 1 per cent annual exceedance probability (AEP) modelling results.

INDICATIVE PROJECT COST	IMPLEMENTATION TIME	CAN THIS OPTION BE STAGED
High – more than \$5 million.	Long-term – more than 10 years.	No - the full project would need to be completed at one-time.