

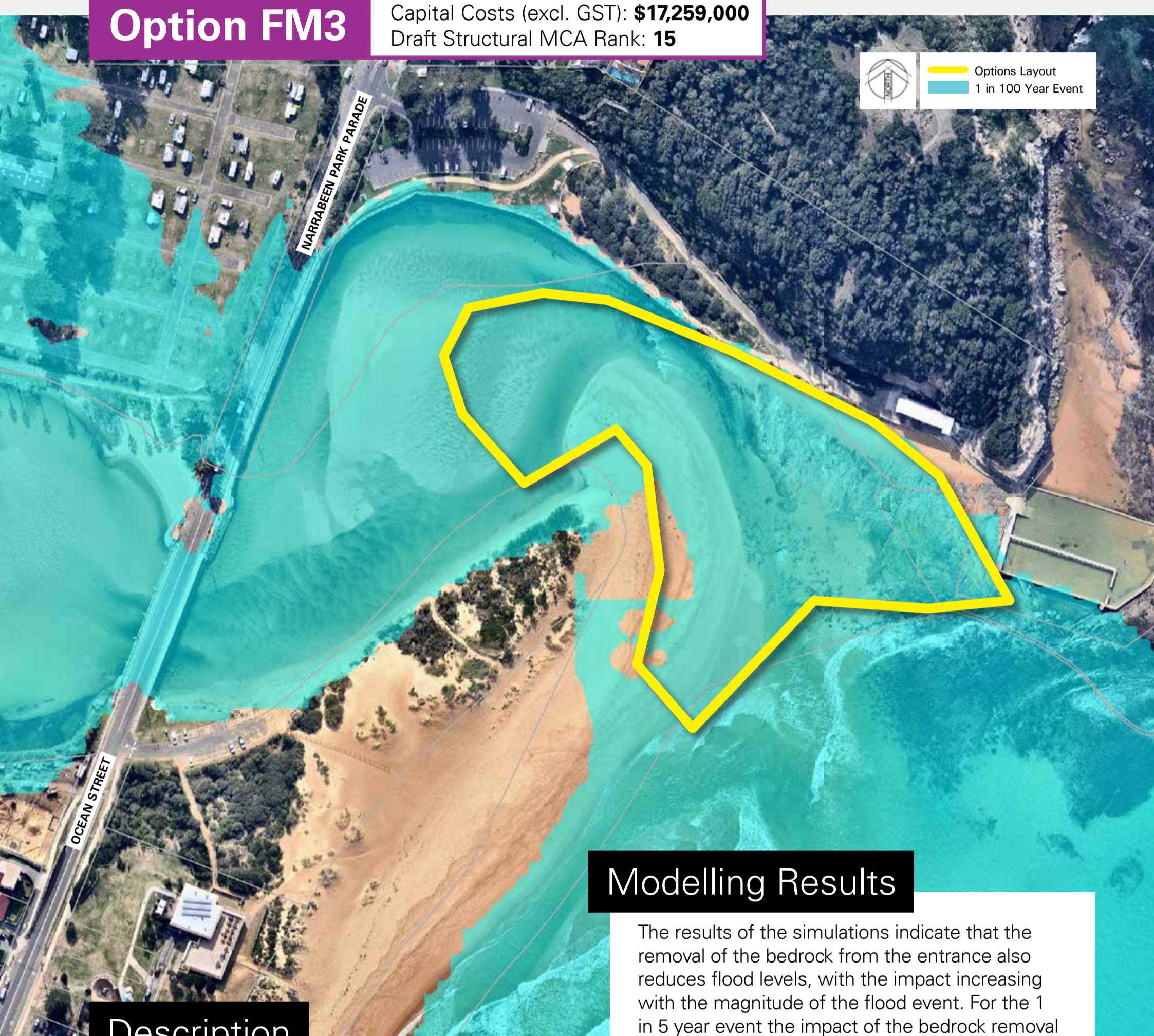
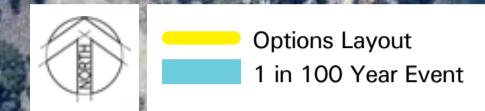
Entrance Bed Rock Removal



northern
beaches
council

Option FM3

Capital Costs (excl. GST): **\$17,259,000**
Draft Structural MCA Rank: **15**



Description

This would involve removal of the underlying bedrock at the lagoon entrance, which presently acts as a limiter for entrance scour during flood events. The bedrock would need to be blasted out, or sawn using rock cutters. The intention is that once the bedrock is removed, the entrance will be allowed to scour to a greater extent during a flood, thereby allowing a more rapid release of flood waters and reducing flood levels. This option would also allow a more rapid ingress of ocean water during large storm surge events.

Modelling Results

The results of the simulations indicate that the removal of the bedrock from the entrance also reduces flood levels, with the impact increasing with the magnitude of the flood event. For the 1 in 5 year event the impact of the bedrock removal reduces peak flood levels by around 0.03 to 0.05m. The magnitude of the entrance scour and therefore the improvement in flood reduction achieved from removing the bedrock increases with the magnitude of the flood event.

For the 1 in 100 year event this option may reduce flood levels by around 0.08 m to 0.15 m in the upstream and downstream regions of the estuary respectively. An important finding is that the removal of the bedrock significantly reduces the flood duration; the duration of flood levels above council's mechanical opening level (1.3 m AHD) can be reduced by 4-6 hours for most flood events.