

Willandra Road Reserve Lowering and Willandra Road Culvert Upgrade & Channel Vegetation Clearing



northern beaches council

Option FM7

Capital Costs (excl. GST): **\$536,000**
Draft Structural MCA Rank: **13**

Option FM8

Capital Costs (excl. GST): **\$948,000**
Draft Structural MCA Rank: **13**



FM8 Option Layout
FM7 Option Layout
1 in 100 Year Event



Description FM8

There are two 3.0W x 1.55H RCBCs conveying flow under Willandra Road, which has a low point to the east of the culvert crossing diverting flows to residential properties downstream. Capacity is exceeded in the 1 in 5 year event and overtops the road reserve diverting flood waters onto several lowlying residential properties downstream. In order to improve conveyance through the roadway, a 3.0W x 1.55H RCBC through the road has been considered. To cater for the increased culvert conveyance, vegetation clearance has been considered within the model downstream of the roadway. The intention of this is to offset the increased flow coming through the culverts and improve the flood immunity of the local properties

Description FM7

The public reserve on the western bank downstream of Willandra Road is elevated (approximately 12 m AHD), while the eastern bank which has flood affected residential properties is lower (approximately 11 m AHD). If the western bank was lowered then flooding of the reserve could alleviate flooding of neighbouring residential properties to the east. Downstream of the roadway a small area of excavation has been undertaken in a currently undeveloped area of green space

Modelling Results

The results of the simulations show that the introduction of the larger culvert dramatically lowers the water level over the roadway. This results in a marked reduction in water levels (up to 500 mm) on the northern side of the roadway. The improvement in conveyance downstream of the culvert also alleviates some impacts, resulting in an option which provides good protection to the local properties.

Modelling Results

The results of the simulations show that while this option provides some protection in regards to properties, the option does not completely remove flood affectation of these properties. Locally water level reductions of up to 0.3 m are achieved for adjacent properties.