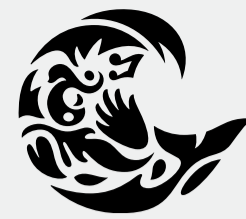


Ponderosa Parade Drainage Upgrade



northern
beaches
council

Option FM14

Capital Costs (excl. GST): **\$874,000**
Draft Structural MCA Rank: **5**



Options Layout
1 in 100 Year Event



Description

Flooding of Narrabeen Creek in upper Warriewood Valley is generally contained within channel up to the 1 in 100 year event. Flooding does occur via the low lying Ponderosa Parade crossing (road level is only 2.1 m above channel invert). There are twin 1800 mm diameter pipes conveying flow under the local road. Capacity is exceeded in the 1 in 20 year event and overtops into the road reserve with overland flow through several large residential developments downstream to the south.

This option includes upgrading the current culvert network from the current 1 in 5 year capacity to convey the 1 in 100 year event and contain flows within Narrabeen Creek channel. A 4.5W x 1.8H RCBC has been selected to convey this flow.

Modelling Results

The results of the simulations indicate that the increased culvert capacity does not have sufficient capacity to remove all overland flow from the surface of the road, however, the levels are dropped by up to 0.15 m. This lowers the peak depth on the road in the 1 in 100 year event to approximately 0.45 m. Due to the capacity of the downstream system any further increase in culvert size would need to be accommodated with additional channel works to improve both the conveyance capacity and storage capacity of the channel. Any channel upgrades would be difficult with existing development on both banks of the creek restricting the space available to increase channel size.