

## **Mackay Boat Ramp Feasibility Study**

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### **Abstract**

Queensland Transport engaged Connell Wagner to identify a preferred option for a new boat ramp. A number of sites have been considered regarding functionality, design, environmental and safety requirements. Two options at the Mackay CBD (Riverside Drive options) and one at the Pioneer River entrance (East Point option) have been assessed in more detail to support the feasibility study.

After reviewing background information, opinions of all stakeholders were sought after to assist with preparation of the concept plan. Meteorological and hydrodynamic investigations were then undertaken to indicate the usage potential for each option. Preliminary cost estimates were used to classify the different options on economic, social and environmental criteria.

Water levels and peak flood velocities from previous hydrological studies were used to highlight the design levels and civil works requirements. Local wave characteristics were assessed from local standard extreme weather conditions and cyclonic historical activity. A Delft3D hydrodynamic model of the Pioneer River estuary was set up based on tidal, freshwater and wind forcing. This model was used to estimate tidal currents at the three locations.

The preliminary wave climate investigation confirmed the low wave climate to be expected at these locations. The hydrodynamic model results suggest smaller tidal levels and a smaller tidal range for the Riverside Drive options than further downstream at the East Point option in this flood-influenced estuary. Currents are expected to be smaller at East Point location than for the Riverside Drive options, where erosion and scouring would be of concern.

The Riverside Drive sites offer greater potential for future upgrades, easily manageable road access and land tenure matters. However, the East Point site seems preferable due to lower environmental impacts and enhanced navigation access and safety.