

DAMS & BASINS

COMPANY OVERVIEW

WMS is a specialist engineering consultancy firm providing high-quality solutions to hydraulic design, water resources and floodplain management problems, with offices in Brisbane, Sydney, Melbourne and Cairns.

WMS supports dam owners and operators with a range of services, including failure impact assessments and risk and consequence assessments. We are fully versed in the Australian ANCOLD Guidelines as well as other state-based guidelines such as the QLD DNRME failure impact assessment methodology.

WITH US YOU CAN CONSIDER IT DONE

Supporting clients end-to-end, WMS can undertake the hydrological and hydraulic modelling, as well as the calculation of the Population at Risk/ Potential Loss of Life and the analysis of downstream consequences as per the ANCOLD Guidelines. We have extensive experience across the East Coast of Australia, having undertaken a number of Failure Impact Assessments for dams and detention basins for many clients. WMS can utilise either the QLD DNRME methodology in conjunction with the latest research to develop the breach parameters. The application of these methodologies ensures that we provide a robust impact assessment that will protect both the dam owner and the downstream communities. Additionally, in conjunction with our partners, we can incorporate cultural heritage assessments and liaise with traditional owners of downstream impacted areas.



OUR CAPABILITIES

- Verification of dam dimensions
- Potential Loss of Life (PLL) Assessment
- Consequence Category Assessments
- Hydrological modelling
- Spillway capacity modelling
- Spillway sketches
- Hydraulic modelling
- Population at Risk (PAR) assessment
- Training of operational staff

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PROJECT EXPERIENCE:



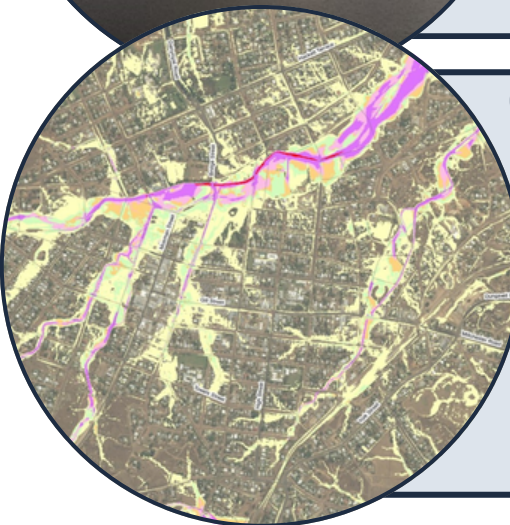
JALARRA PARK DETENTION BASIN

In 2020, Cairns Regional Council commissioned WMS to undertake a flood impact assessment (FIA) for the proposed Jalarra Park detention basin. The hydraulic modelling results were used to size scour protection and complete the design ready for construction. A landscape plan was produced which maintained the existing vegetation and included an upgraded walking path and benches to improve park facilities for residents. WMS also provided Council with landscape sketches and advice for the community consultation sessions which resulted in positive feedback regarding the proposed basin.



TENTERFIELD DAM BATHYMETRIC SURVEY

In early 2019, Tenterfield was in the grips of the worst drought on record. The town's main water supply is Tenterfield Dam that by February 2019 was at 31% capacity with an estimated 350 days of water supply remaining. For community of Tenterfield, we were able to provide accurate information to volume of water remaining in the main water supply during the height of the worst drought on record. We were also able to calculate the volume of sediment in the dam to support future works. Later, when the dam was at 100% capacity following heavy rains, we were able to update the survey for the full dam area and confirm that no significant additional sedimentation had occurred as a result of the recent inflows.



CHARTERS TOWERS RETENTION BASIN MODELLING

In 2015, Charters Towers Regional Council commissioned a flood study of Mosman Creek and adjacent catchments within the township of Charters Towers. The objective of this study was to undertake a flood assessment of the proposed retention basin designs; demonstrate that the proposed retention basins meet the desired flow reductions; demonstrate no adverse flood impacts to adjacent properties for a range of design events and provide relevant information for completion of design works. The impacts of this basin were assessed by incorporating the design footprint into the developed scenario hydraulic model. The modelling results were also used to provide Council with the relevant information for the design of the spillway and low flow outlet.

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