PROJECT NARRATIVE

The Wungong Urban Water Project was a major redevelopment initiative of the then Armadale Redevelopment Authority (ARA), now Metropolitan Redevelopment Authority (MRA). Encompassing an area of 1580ha, the project facilitated production of around 16,000 dwellings with a population of approximately 40,000 people. With fragmented land ownership across the 330 properties within the project area, the MRA prepared a master plan which established the framework for owners to undertake progressive subdivision over the estimated development period of 15-20 years. The plan aimed to showcase best practice in sustainable urban development incorporating natural resource management and water sensitive urban design.

SCOPE OF WORK

The Wungong Urban Water District Water Management Strategy (DWMS) (ARA, 2009) was developed for the Master Plan to provide a recommended conceptual approach for total water cycle management within the redevelopment area. A key element of the DWMS is the preparation of an arterial drainage plan for the site which articulated design objectives and land requirements for flood management. The DWMS was finalised prior to drainage planning undertaken by the Water Corporation on some of the regional drains resulting in a DWMS which does not provide details on 100 year flood levels and flow rates, invert levels and key culvert sizes.

In order to complete the drainage planning for the Wungong River the DWMS Addendum B report was commissioned by the MRA. This required post-development drainage modelling for the Wungong River and document the key drainage requirements for the DWMS lands.

Scope included:

- Preparation of a catchment-wide two dimensional hydraulic and hydrologic model covering the whole of the Wungong Urban Water (WUW) Master Plan;
- Confirmation of an agreed set of run-off generation parameters and loss models for various land uses for adoption in the model;
- Drafting of the plan/profile drawings;
- Design of swales, main culvert structures, key invert levels, determination of peak flow rates and flood levels along all the Living Streams, Park Avenues and the Wungong River;
- Confirmation of the peak outflow and flood level requirements at Armadale Road and assessment of maximum depth requirements;
- Identify any issues along the system and the key requirements regarding the drainage profile;
- Input information from the existing Local Water Management Strategies (Cells C, D, E, F and K) into the model and complete an assessment of the sizing and location of the associated compensation basins;
- Negotiation with Water Corporation, Department of Water (DoW), City of Armadale (CoA), Swan River Trust (SRT), Department of Environment and Conservation (DEC) and Armadale Redevelopment Authority (ARA);
- Provide final report including model outputs and a summary of all agency approvals, findings and conclusions.