

# XP Software

## Case Study | The Kawana Waters Project



### The Kawana Waters Project:

#### Consulting Engineers Cardno MBK bring dynamic design process to a 16,000 allotment residential development in the Mooloolah River floodplains

The Kawana Waters project is a very large residential development on the Sunshine Coast in south-eastern Queensland. When complete, in approximately 10 years, 16,000 allotments will have been developed.

Much of the development is located on the floodplain of the Mooloolah River. This requires very significant reclamation earthworks. The borrow sources for these earthworks are tidal canals and lakes within the development.

For economy of earthworks, the resulting landform is very flat. Roads are generally graded in a "sawtooth" manner with alternate high and low points. Road grades are, typically, the minimum allowable of 0.4%.

With the advent of design guidelines such as the Queensland Urban Drainage Manual requiring detailed analysis of major storm events (100 year ARI) for urban catchments, a suitable modeling tool was required. Conventional "gap flow" calculations are not applicable in this situation where the sags in the road grading function as detention storages, often with no discharges over the adjacent high points.

Consulting Engineers Cardno MBK have used several XP Software products for this analysis, including EXTRAN, XP-UDD and lately XP-Storm. The requirement was for a package capable of, simultaneously, dynamically modeling both the surface and piped drainage systems.

The design process has been streamlined through the use of the XPX data transfer format to import network



*After rigorous analysis, Cardno MBK chose XP-SWMM for the Kawana Waters project due to the model's ability to simultaneously and dynamically model both the surface and piped drainage systems.*

data to XP-Storm from the rational method design package used for the minor storm analysis and from the terrain modeling package used for the subdivision design.

XP-Storm has been used successfully by Cardno MBK to model very large urban catchments with multiple outlets and complex major storm flow paths.

This approach has found acceptance with local authorities due to the ease of interpretation of the graphical model output.

For additional information on the Kawana Waters Project, please contact Anthony Howard at: [ahoward@sun.cardno.com.au](mailto:ahoward@sun.cardno.com.au).

### For Additional Information

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