Maleny Irrigated Forest and Treatment Wetland

**CLIENT**
Unity Water.

**CONTRACT**
Detailed Design for construction.
(Wetland and irrigated forest.)

**CHALLENGE**
As part of a Sewage Treatment Plant (STP) upgrade, the client was required to minimise the discharge of effluent into Obi Obi creek and to passively treat any site runoff and STP wet weather flows.

**SOLUTION**
WCG was commissioned to develop the concept and detailed design for a scheme to pump treated effluent 1.4km from the new STP to irrigate a new 13.8-hectare biodiverse forest planted as part of the project. Effluent not utilised by the forest will seep through the Maleny precinct: Wetlands in foreground
soil profile into a 3-hectare wetland, where residual nutrients will be treated and the water naturalised before entering Obi Obi Creek. This STP solution delivers significant environmental benefits.

The Water and Carbon Group, in partnership with the local community, initiated the vision for the site. As a result, the community now has a biodiverse forest with walking trails and higher water quality outcomes. Construction for this project commenced in 2013.

OUTCOMES

The establishment of the forest system provides links with local biodiversity corridors and enhances local amenity through the provision of walking tracks and the development of an environmental precinct. Critically, this solution also proved to be the least cost.

The forest system will reduce the total volume of effluent discharged to Obi Obi Creek by 60%. Wet weather flows (1 to 3 x ADWF) are discharged directly to the wetland for further nutrient removal. Combined with the treatment wetland, the overall system has been modelled to remove more than 70% of nitrogen from the STP effluent achieving TN values of less than 2mg/L.

Concept plan for Maleny wetland and forest