Banora Point Wastewater Treatment Plant Upgrade

The Banora Point Wastewater Treatment Plant (WWTP) has been upgraded to service population and industrial growth in the region, while protecting the environment of the lower Tweed estuary.

Treatment processes at the plant, located off Enterprise Avenue in Tweed Heads South, were augmented and extended to substantially increase capacity and improve the quality of treated water.

Background

The Banora Point WWTP services the areas of Tweed Heads, Banora Point, Terranora and Bilambil Heights. This district is continuing to experience considerable population growth, with new housing developments and increased housing density within the catchment area.

Further population growth is anticipated and the plant’s capacity needed to be increased to meet this heightened demand. The WWTP can now treat up to 18 megalitres per day, which will service approximately 27,000 homes and businesses.

In addition, planning and environmental review studies identified that improved effluent quality from the Banora Point WWTP would have beneficial effects on the quality of water in the lower Tweed estuary. The upgrade design included processes to significantly reduce nutrient levels in the final effluent discharged from the plant.

Construction

Construction works began in September 2010 and were completed in December 2012, at a total cost of $35 million.

The project was funded by Council, with the assistance of a $16.8 million interest-free loan under the NSW State Government Local Infrastructure Fund.

The upgrade included construction of new:
- Inlet screens
- A flow balance and anaerobic tank
- Aeration system
- Clarifier
- Disk filter
- UV disinfection system
- Odour treatment facility
- Control building

A team from Council and Public Works NSW project managed the upgrade, which was designed by consultant GHD P/L and completed by contractor Tenix Australia P/L.

What is the wastewater treatment plant?

Wastewater is the ‘used water’ from homes and businesses. In homes, wastewater is mainly generated from the bathroom, kitchen and laundry.

Wastewater is 99.97% water, but contains microorganisms, nutrients such as nitrogen and phosphorous and a small amount of dissolved or suspended solid matter.

Raw wastewater from homes and businesses is delivered to the Banora Point Wastewater Treatment Plant (WWTP) by a network of pipes and pumping stations. The plant treats the wastewater through a multi-stage process to remove pollutants before the water is returned to the environment.
Environmental improvements

The upgrade will bring considerable environmental benefits, by significantly reducing nutrient levels in the treated effluent discharged to the Terranora Inlet, which is part of Tweed River System.

The majority of capital investment for these works was allocated to significant improving the final quality of discharged effluent.

An improved treatment process and the inclusion of tertiary-stage filters have reduced the concentrations of:
- Nitrogen by 40 per cent.
- Phosphorous by 90 per cent.

This means there will be no net increase in nutrients entering the environment, even though there will be more homes and businesses creating wastewater.

New filtration and disinfection equipment provide a multi-barrier treatment systems to ensure human and environmental health is protected.

As part of its commitment to integrated catchment management, Council is also completing new riparian and stormwater improvement works in the Terranora and Cobaki systems, further enhancing waterway health.

Contact Us

If you require further information about any aspects of this project, please contact Michael Wraight on (02) 6670 2680, email watertsc@tweed.nsw.gov.au or visit our website at www.tweed.nsw.gov.au

Recycled water

Recycled water from the WWTP has been successfully used for irrigation of the Tweed Heads/ Coolangatta Golf Course since the early 1980s.

There are plans to extend recycled water supplies to the playing fields at Council’s regional sporting complex, Arkinstall Park, and the Tweed Heads South Memorial Gardens Cemetery. These projects will help reduce demand on the district’s potable water supplies and cut the amount of effluent discharged to the Tweed Estuary.

The improved quality of the treated wastewater is expected to generate increased opportunities for additional recycled water projects in the future.

For more information on recycled water, please visit our website at www.tweed.nsw.gov.au

A new UV system to treat the wastewater.

The new control building.