Banora Point Wastewater Treatment Plant Upgrade

The Banora Point Wastewater Treatment Plant (WWTP), located off Enterprise Avenue in Tweed Heads South, is undergoing a major upgrade to accommodate population increases in the district.

A steady rise in housing means the plant is now operating near full capacity, so the size and treatment processes of the plant will be substantially increased to deal with population growth and improve the quality of treated water.

Construction will start in September 2010 and is expected to take 18 months to complete.

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.

The Banora Point WWTP was constructed to its current design capacity of 15 megalitres per day (ML/day) in 1995. The plant is now operating near its design capacity.

The upgrade will increase the capacity to 18 ML/day and will also significantly improve the quality of the final treated effluent discharged to Terranora Creek, which is part of the Tweed River system. An environmental impact statement prepared as part of the approvals phase identified that improved effluent quality from the Banora Point WWTP would have beneficial effects on the quality of water in the lower Tweed estuary.

Budget
The total value of these works is $35M. This project is being funded by Tweed Shire Council, with the assistance of a $16.8M interest-free loan under the NSW State Government Local Infrastructure Fund.

Tweed Shire Council is investing now to ensure the staged provision of necessary water and sewerage infrastructure is in place to accommodate growth in this region.

Project Objectives
The objectives of the Banora Point WWTP upgrade project are:
• Cater for predicted population growth in the Tweed Heads/Banora catchment.
• Protect the environment of the lower Tweed estuary.
• Meet regulatory requirements for treatment and management of effluent.
• Address the community’s issues and expectations.
• Maximise the potential for effluent reuse strategies.

Construction Works
The upgrade works are scheduled to start in September 2010 and are expected to take 18 months to complete.

Planned works include the construction of new concrete process tanks, control building, clarifiers, filters and disinfection system.

Construction will be limited to Monday to Saturday, 7am to 7pm to minimise the impact on nearby residents and businesses. Some night works for short durations will be required for critical changeovers, however they will be planned to minimise any inconvenience.

Contact Us
If you require any further information about this project, please contact Michael Wraight on (02) 6670 2680, email to watertsc@tweed.nsw.gov.au or visit our website at www.tweed.nsw.gov.au
What is the waste water 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.

Why does the plant need to be upgraded?
The Banora Point WWTP was constructed to its current design capacity of 15 megalitres per day (ML/day) in 1995. Average flows to the plant are now nearing 15 ML/day, so the plant is operating at close to its design capacity.
The treatment plant’s catchment, which includes the areas of Tweed Heads, Banora Point, Terranora and Bilambil Heights, is continuing to expand because of new developments and infill within the district. It is estimated the population of this catchment will increase by 75% over the next 30 years.
The upgrade will increase the capacity of the plant to treat 18 ML/d and significantly improve the quality of discharged effluent. The increased capacity will enable it to service the equivalent of approximately 4,500 new homes.

Treated effluent from the plant is discharged to the Terranora Inlet, which is part of the Tweed River system. An environmental impact statement prepared as part of the approvals phase 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 treatment plant is being upgraded to ensure the necessary infrastructure is in place to service growth in this region, while protecting the environment of the lower Tweed estuary.

When will the upgrade start and how long will it take?
Tenix Australia has been awarded a contract to construct the WWTP upgrade.
Construction works are scheduled to start in September 2010 and will take approximately 18 months to complete.

How will construction impact on nearby residents and businesses?
The planned works will include construction of concrete tanks, a control building, mechanical filters and roads.
The treatment plant is located in a predominantly industrial area in Tweed Heads South. There are no residential areas in close proximity to the site, because of buffer zones outlined in planning controls. However, potential noise impacts from the works will be further mitigated by restricting the permitted hours of works to 7am to 7pm Monday to Saturday. Some night works for short durations will be required for critical changeovers. These works will be planned to minimise any inconvenience.
Dust control measures will also be implemented on the site to ensure there are no issues.
There will be an increase in construction vehicles entering the site during the works.

This volume is not expected to affect normal traffic flows along Enterprise Avenue, Traders Way or Machinery Drive.

How will water quality be improved by the upgrade?
While the capacity of the WWTP will be increased, the majority of capital investment for these works is allocated to a significant improvement in the final quality of discharged effluent.

A new five-stage Bardenpho process and the inclusion of tertiary-stage filters will reduce the concentrations of the following nutrients:
- Nitrogen by 40%
- Phosphorous by 90%

In other words, there will be a net increase in nutrients entering the environment even though there will be more homes and businesses creating wastewater.
Filtration and disinfection equipment are also being upgraded as part of these works. These multi-barrier treatment systems ensure human and environmental health is protected.

How will this benefit the environment?
A recent Ecosystem Health Monitoring Technical Report for the Cobaki and Terranora Broadwaters showed that reducing nutrient discharges was important in improving the health of these waterways.
The Banora Point WWTP upgrade will significantly reduce nutrient loads to the adjacent waterways.
As part of its commitment to integrated catchment management, Tweed Shire Council is investing an additional $300,000 to complete new riparian and stormwater improvement works in the Terranora and Cobaki systems, further enhancing waterway health.

Does this mean the treated water could be reused?
Yes. Recycled water from the WWTP has been successfully used for irrigation of the Tweed Heads/ Coolangatta Golf Course since the early 1980s.
Projects to supply recycled water for Arkinstall Park Playing Fields and Tweed Heads South Memorial Gardens Cemetery are planned to start in 2011 and 2012. 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 will 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

How has the project been funded?
The total value of these works is $35M. This project is being funded by Tweed Shire Council, with the assistance of a $16.8M interest-free loan provided by the NSW State Government Local Infrastructure Fund.
Tweed Shire Council is investing now to ensure the staged provision of necessary water and sewerage infrastructure to service growth in this region.