

This newsletter provides an update on activities of the project

December 2002

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1 PROJECT BACKGROUND

Sand is moving predominantly northwards along the coast under the action of waves. The quantity of this sand has been estimated to be about 500,000 cubic metres a year. This is not a constant flow, but has been estimated to vary from 250,000 cubic metres a year to 1,200,000 cubic metres a year, depending on wave conditions.

In the early 60's the breakwaters at the Tweed River Entrance were extended to improve the entrance conditions for the passage of vessels.

The extension of the breakwaters resulted in the trapping of sand on the southern side of the entrance. As a result the beach on the southern side of the entrance widened significantly while beaches to the north suffered erosion for close to 40 years.

2 SAND BYPASS SYSTEM

The sand bypassing system has been developed to mimic the flow of sand that occurred naturally before the extension of the walls, whilst maintaining a navigable river entrance. It pumps sand from Letitia Spit on the southern side of the entrance to beaches north of the entrance. The primary discharge outlet at East Snapper Rocks is below the lookout at Point Danger.

Sand that is pumped to the outlets (and sand placed by a dredge) moves up the Gold Coast. The widened beach to the north of Kirra provides evidence of this.

3 CURRENT STATUS

Currently beaches on the southern Gold Coast have more sand than many residents of the local community have seen in a long time. This can be attributed to:

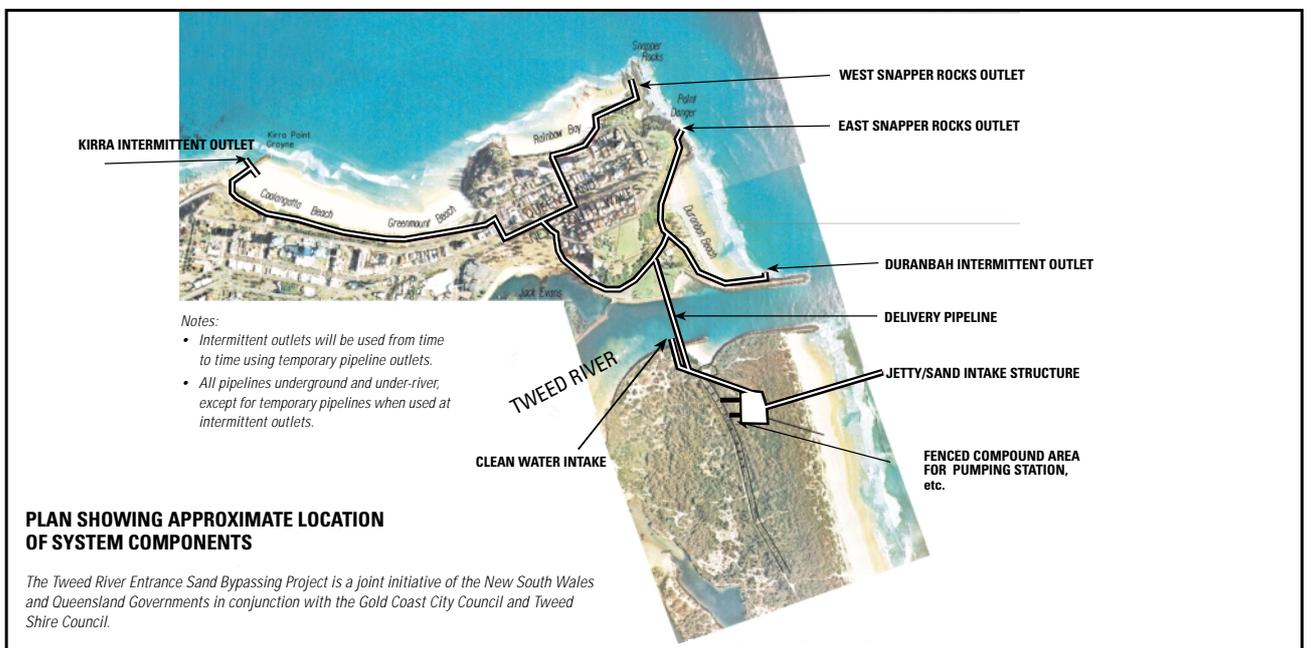
1. Sand Supply – In recent years, the quantity of sand moving up the coast has been well above average. Also, the large movements of sand that arrived in the middle of 2001 and 2002 delayed the recession cycle that tends to occur in the area off Rainbow Bay in the latter part of the year.
2. Start up of the System – During the initial operations, the system has had to deal with greater than normal quantities of sand while the sand trap at the sand intake on Letitia Spit develops, and the beach recedes to its long- term alignment.

4 FUTURE OF THE SOUTHERN GOLD COAST BEACHES

As the system settles down to moving only sand naturally moving up the coast to the bypass system, beaches will generally readjust and swimming conditions and the separation of swimmers and board riders at Rainbow Bay will improve.

However it is also important to realise that with the sand bypassing system in place:

- beaches on the southern Gold Coast will have more sand on average than in the previous 40 years
- beaches will be more resistant to damage during storm events



TWEED RIVER ENTRANCE SAND BYPASSING PROJECT

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Rainbow Bay 21 July 1999



Rainbow Bay 17 November 1999



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- surf and beach conditions at beaches will be different from what they have been in the past 40 years
- the beaches will continue to vary in response to changing wave conditions, as they have always done.

Conditions at Rainbow Bay will continue to vary seasonally. In the second half of the year, the more northerly direction of the waves means that less sand moves around the Snapper Rocks headland, and the beaches from Marley Rocks to Greenmount tend to erode. This is currently occurring.

In the first half of the year, large quantities of sand move around Snapper Rocks under the action of the more southerly waves. This sand does not usually move on immediately because Rainbow Bay is protected by the headland from southerly waves. An indication of these seasonal beach fluctuations is illustrated by the above photos of July 1999 and November 1999.

5 SAND PLACEMENT

Not all the sand diverted from reaching the entrance of the Tweed River by the sand bypass is placed at Snapper Rocks East. The system has the ability to place small amounts at Duranbah and Kirra Point. Sand was placed off the Kirra Groyne in August to October 2001 and February 2002, and sand is currently being placed off Kirra Groyne. A proposal to modify the agreement between NSW and Queensland that provides for the placement of larger quantities at Kirra Point in the first few years of operations is being considered.

A recent study has shown that it is feasible to modify the system to place sand at Miles Street. However, the cost is high and there appears to be little advantage over using the existing facility at Kirra Point.

6 WANT TO KNOW MORE?

Project Websites have been established that contain detailed descriptions of the project. The sites provide information such as seabed maps of the Tweed River Entrance, sand delivery quantities, technical details, newsletters, photographs of the river entrance and the beaches, and links to other weather, tide and wave recording websites. The addresses are :

www.wrl.unsw.edu.au/coastalimaging/tweed
www.tweedsandbypass.nsw.gov.au
www.epa.qld.gov.au/sandbypass

Additionally, if you have any queries please contact:
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