Tweed Sand Bypassing has been part of the unique coastal story of Tweed Heads and Coolangatta for nearly twenty years.

Recognised around the world, the Project was created for two towns in two different States whose very identity, economy and culture depends on sand and the Tweed River entrance.

This ambitious infrastructure project is owned by the New South Wales and Queensland State governments (with support from City of Gold Coast), and is operated by a private contractor.

The Project was designed to address the very real environmental, commercial and social impacts created by a dangerous river entrance and a sand supply interrupted by the construction of river training walls in the 1960s.

Sand is constantly moving; the way in which it moves is almost impossible to accurately predict, and the preferred condition of the beaches and associated amenity aspects is wildly debated.

At the heart of Tweed Sand Bypassing is a desire to understand these challenges and to manage the role of sand in our coastal lifestyle.

Figure 1 - Sand collection jetty on Letitia Spit
MOVING SAND

Implementing a solution that would support the economic and social growth of the community has involved experts from around the world, professionals from two State Governments and many passionate members of the local community.

In the 1990s a permanent Jetty Mounted Pumping System (JMPS) in conjunction with maintenance dredging was adopted. After several large dredging and nourishment activities in the mid to late 90s, Tweed Sand Bypassing became fully operational in 2001.

Since then, the JMPS continues to mechanically move sand that naturally drifts alongshore against its pylons on the southern side of the Tweed River entrance to the northern side.

With occasional help from a floating dredge, the eleven submersible pumps connected to the 450m long jetty on Letitia Spit have ensured the majority of coastal sand drift bypasses the river — thus restoring sand supply to the southern Gold Coast beaches and maintaining a navigable river entrance.
Figure 3 - Tweed Sand Bypassing aerial oblique photograph (Skyepics 2016)
SURVEYS AND MONITORING

Tweed Sand Bypassing relies on detailed marine and beach survey information to analyse how the beaches are changing in response to sand delivery and natural seasonal fluctuations. For example, a large annual survey is conducted, while select line surveys are completed four times a year.

As part of the project’s broader monitoring program, a summary of daily to monthly monitoring results, such as wave and beach conditions, is made available online each month.

Vertical aerial photography is also captured twice a year in the Tweed Sand Bypassing project area. In addition, oblique aerial photography is undertaken four times a year from a helicopter.

This information is very helpful in determining beach changes, particularly in response to seasonal fluctuations and storm events. It also supports decision making on sand removal and placements, as well as corresponding volumes.

Figure 4 - Many profiles from the historical survey layout (1994) continue to be surveyed annually by Tweed Sand Bypassing

Restoring Coastal Sand Drift - Improving Boating Access
Figure 5 - Tweed river entrance public condition map

Figure 6 – Duranbah beach bathymetry and dredge dump boxes

Restoring Coastal Sand Drift - Improving Boating Access
Figure 7 - Tweed Heads wave roses

February 2016 – May 2016

February 2017 – May 2017

Restoring Coastal Sand Drift - Improving Boating Access