

Proposed bank stabilisation and rock revetment repairs, Tweed Heads – Summary of construction elements

Main construction elements:

Bank stabilisation

- Installation of a rock fillet wall within the intertidal zone to dissipate wave energy from the base of the embankment and promote mangrove recruitment
- Establishment of a rock revetment wall at the base of the bank to be stabilised and tied in with adjacent bank toe scour protection
- Filling of the eroded section of bank with soil to reflect the adjacent non-eroding sections of bank including consistent height and slope of embankment (~1:1.5 bank batter)
- Revegetation of the embankment using riparian groundcovers in order to support soil stability and enhance amenity.

Revetment repairs

- Placement of toe rock located approximately 3m from the base of the existing revetment wall
- Installation of geotextile material from the top of the existing revetment wall to the toe rock
- Placement of bedding rock and inner armour rock on top of the geotextile material in order to establish an approximately 1:1.5 embankment batter
- Implementation of outer armour rock.

Proposed construction methods, materials and equipment:

Bank stabilisation

- Installation of environmental management controls
- Placement of rock to establish the wave energy dissipation fillet wall
- Placement of rock at the base of the bank as toe scour protection
- Importation and shaping of soil material to establish bank profile
- Installation of jute mat or similar as an immediate erosion control measure along the embankment
- Planting of native groundcovers along the embankment
- Removal of environmental management controls.

All works for the bank stabilisation are expected to be performed from within the road reserve. Typical construction equipment would include large excavator (~20t), dump trucks, and ganger truck.

Revetment repairs

- Installation of environmental management controls
- Placement of boulder rocks to establish the toe of the repaired revetment wall
- Laying of geotextile material along the existing revetment wall as a base for bedding and inner armour rock material

- Placement of smaller rock material as bedding and inner armour protection
- Placement of rock along the revetment as outer armour protection
- Removal of environmental management controls.

Works to complete the revetment repairs would include use of a barge within the adjacent Terranora Inlet. Other equipment would include a barge mounted small excavator (<5t) and vessel to operate the barge.

Ancillary activities:

- Use of Lot 2 DP 859328 (Afex Park) located on Wharf Street, Tweed Heads as a temporary compound, and laydown and barge mobilisation area during construction.
- Use of Terranora Inlet as a rock transport route between Afex Park and the revetment repairs work site.
- Use of the Keith Compton road reserve as a temporary compound, and laydown area during construction.

Earthworks:

Implementation of the project as described is expected to require minor excavation only with work largely comprising filling or land reclamation. No excess soil material is anticipated to be generated by the project with minor quantities of soil to be reused within the project as backfill.

In terms of the bank stabilisation works the project is anticipated to require approximately 400m³ of soil material and the importation of approximately 40m³ of rock material.

To perform the revetment repairs approximately 140m³ of rock material is expected to be used (comprising a ~7m² cross section of rock 20m in length).

Vegetation clearing:

The proposal to repair the rock revetment is predicted to clear approximately 1m² of seagrass (*Zostera*). Management measures would be implemented to prevent further indirect impacts to seagrass as a result of the proposal.

Figures and plates:



Figure 1: Site locality plan



Plate 1: View looking north showing the road reserve bank slip stabilisation site adjacent Terranora Inlet



Plate 2: View looking south showing revetment repair site (works to be performed from the adjacent Terranora Inlet)



Plate 3: View looking east showing the approximate extent of proposed rock revetment repairs (to be performed using barge mounted excavator in adjacent Terranora Inlet)



Plate 4: Tweed Afex Park proposed to be used for barge loading / rock transport