OVERVIEW

The Banora Point Upgrade was a major Design and Construct Alliance which featured complex, largely structural construction over one of the highest trafficked sections of the Pacific Highway in the Far North Coast region of New South Wales, just south of the Queensland border. It delivered an increase in capacity from four lanes to six lanes over a 2.5km length, a 23m deep rock and soft soil cutting, a 330m long viaduct, seven single span bridges, one 40m temporary bridge and 19 permanent and temporary reinforced soil walls.

The Alliance team was challenged with an extremely high-profile brownfield corridor in a densely urbanised area, construction under heavy, live traffic with over 50,000 vehicles per day, complex existing infrastructure and services, steep terrain, high intensity rainfall in the region, numerous sensitive environmental areas requiring protection together with a high level of critical community interest. Furthermore, all works were completed whilst maintaining the four heavily congested interchanges feeding the South Tweed CBD and three adjacent residential precincts.

PROJECT SCOPE

- 2.5 km of six-lane, dual carriageway from Barneys Pt Bridge to the Tweed Heads Bypass
- A 330m long, twin viaduct across the valley south of Sexton Hill
- East-west landbridge connection, approximately 75m wide, at Wilson Park over a 150m long, up to 23m deep cut adjacent to the existing highway
- Connection of south-facing ramps at Barneys Pt Bridge with a southern interchange roundabout
- Northern interchange connecting to Darlington Drive and Minjungbal Drive
- A signalised intersection on the old highway, incorporating all movements between Minjungbal Drive, Darlington Drive and the Pacific Highway (north) and the local road network to the south
- Complex stormwater infrastructure works for the Kimberley Lake Culvert in Banora Point which required the installation of twin major pipelines underneath the Pacific Highway via trenchless techniques through highly urbanised and trafficable environment
- Heavy duty pavements
- Retention of the existing Pacific Highway as a local access road
- Realignment and upgrade of the existing coastal cycle pedestrian route through Banora Point
- Realignment of Laura Street to meet with Short Street and the existing Pacific Highway at a four-way intersection with traffic lights
- Emergency breakdown bays and emergency access points sufficient to allow for stopping due to vehicle breakdowns and other incidental stopping, and servicing by emergency vehicles of incidents on either carriageway
- A vertical alignment above the 100 year flood level
- Water quality treatment, including swales, constructed wetlands and basins;
- Throw protection screens on all highway overpass bridges
- Landscaping of selected roadside areas

PROJECT HIGHLIGHTS

- The first major infrastructure project in Australia to use two large and sophisticated “cluster drills” to excavate the high strength basalt rock (up to 200MPa) in the main cutting
- First major infrastructure project in Australia to procure and operate an excavator mounted hydraulic ‘super-wedge’ rock splitter, imported from Korea. The super wedge was used in close proximity to residential properties, successfully negating noise, vibration and dust impacts while significantly reducing the risk of structural damage to services and residences.
- Awarded the 2011 Environmental Achievement Award from the International Erosion Control Association for outstanding erosion and sediment control. Team implemented an innovative ‘triple– stack’ design, which comprised a clean water pipe located underneath a sediment basin, and an open vegetated bio-filtration channel on the surface.

CLIENT

NSW Roads and Maritime Services

LOCATION

Banora Point, New South Wales (near Queensland Border)

TYPE OF CONTRACT

Alliance - Banora Point Upgrade Alliance (Abigroup, Seymour Whyte and SMEC)

VALUE

PROJECT $ 300 million
SWC SHARE $ 90 million (30%)

CONSTRUCTION PERIOD

October 2009 – October 2012
(Completed two months ahead of agreed contractual completion of December 2012)