OVERVIEW

Seymour Whyte and Abigroup formed a Joint Venture to deliver the Townsville Port Access Road (TPAR) project as an Early Contractor Involvement (ECI) contract for the Department of Transport and Main Roads. AECOM (Maunsell) was engaged as design partner, with the project delivered in three main sections.

SECTION ONE: STUART BYPASS

The first section, which opened in January 2010, was a 2.5-kilometre link between the Flinders and Bruce Highways, allowing heavy traffic from western Queensland to bypass the residential suburbs of Wulguru and Stuart. It included a four span road and rail overpass, a two span crossing of Stuart Creek. Importantly, the outcome provided a grade separation of the North Coast Rail Line and the Stuart Highway. Other works included the widening and reconstructing of sections of the Bruce and Flinders Highways, drainage, street lighting, ITS and local road upgrades.

SECTION TWO: EASTERN ACCESS CORRIDOR

The Eastern Access Corridor (EAC) formed the second section of the project, linking the Bruce Highway to the Port of Townsville. The EAC consisted of approximately 7.5 kilometres of greenfield construction over an area of soft soils making up the tidal flats in South Townsville. It involved the construction of two bridges over creeks, a further two floodway bridges and a series of multi-barrel drainage structures designed primarily for flood mitigation. The roadworks embankments included surcharging and settlement monitoring to cater for the soft soils and high water table. Initially a two-lane road, the corridor included future provision for an additional two lanes, as well as rail and other services such as telecommunications and power.

SECTION THREE: ROSS RIVER BRIDGE

The third section involved construction of a 200 metre long, six-span bridge to link the EAC in the south to the Port of Townsville. Due to its location at the mouth of the Ross River adjacent to a busy marine industry and next to Ross Island Army Base, the bridge design needed to accommodate a high number of vessel movements and possible ship impact. Deep alluvial soils also provided challenges for the design team, with bedrock not found until a depth of 73 metres. A foundation design solution of pipe piles using skin friction between the soil and steel pipes was developed, with the load transferred to the reinforced concrete piles through a series of internal shear keys in the steel pipes.

Situated in a highly sensitive environmentally area and significant fish breeding ground for the Great Barrier Reef, targeted protection activities during construction ensured the sustainability of local marine ecologies. This included fish passage features incorporated into the road design, spill containment ponds built on both sides of the road to reduce the risk of fuel or chemical spills from heavy freight haulage along the route, exclusion zones and air curtains to protect the endangered snub fin dolphin, and restricted construction activities between October and January to protect bird migration.

PROJECT HIGHLIGHTS

- Project won Major Project of the Year at the Engineers Australia Townsville Excellence Awards, in addition to receiving a High Commendation at the Engineers Australia Queensland Excellence Awards.
- As a legacy item to the Townsville Region, a 500ha plus environmental park was established surrounding the Eastern Access Corridor (Section Two of the project).
- Before work started over the tidal mudflat areas, the project team safely relocated 59 mud crabs to a suitable environment near the work site. The team also undertook a mangrove regeneration on mudflats adjacent to the Ross River Bridge site, collecting and planting mangrove seeds adjacent to the abutments.