

Project Profile

Onslow Ring Road Project

Providing an alternative primary all-weather route between the town, Onslow Airport, and the rest of WA

PROJECT BACKGROUND

The Onslow region is located approximately 1500km north of Perth, Western Australia. In recent years it has been undergoing significant development with the State Government, Shire of Ashburton, Chevron Australia and BHP Billiton who are working together to deliver new infrastructure and community facilities in the town of Onslow. When complete, these major works will include a:

- new hospital;
- public swimming pool;
- power and water upgrades;
- new airport terminal and runway;
- leisure facilities;
- school upgrade;
- a new ring road and associated road upgrades; and
- waste water treatment facility upgrade.

ABOUT THE PROJECT

The HAJV (Highway Construction/Albem Operations Joint Venture) commenced works to construct the new Onslow ring road in November 2015. The new ring road now provides an alternative primary all-weather-link between Onslow Road, the town, and the airport.

SCOPES OF WORK INCLUDE

- approximately 3.5km of new road from the existing Onslow Road near the Onslow Airport to the intersection of Simpson Street and Back Beach Road;
- service relocations;
- clearing and topsoil stripping;
- embankment construction;
- drainage and culverts construction;
- pavement construction;
- kerbing;
- asphaltting and bituminous sealing;
- strengthening of road foundation over tidal flats zone;

CONTRACT

78/14, construct only

CLIENT

Main Roads WA

PRE-QUALIFICATION

R2 +

TIMEFRAME

Nov 2015 – April 2016

PROJECT VALUE

\$9 million



- construction of roadworks and facilities for the new Aquatic Centre & School;
- subgrade improvements
- signage and line-marking; and
- remedial works on the existing Onslow Road to repair pavement failures and restore unsealed shoulders.

PROJECT CHALLENGES

Scarcity of resources

Water constraints due to remoteness of location (and potable water needs of the nearby Onslow townsite) were a particular issue. This was compounded by the existence of cohesionless dune sand onsite, which required constant water conditioning during earthworks. The cut material also required watering to meet compaction requirements to ensure underlying integrity for the road pavement.

Investigations had also showed a pre-existing on-road water infrastructure to be the only water source available for off-road water trucks – compounding the water management issue and also presenting potential traffic management challenges as the trucks would have needed to interface with the public.

This issue was overcome by installing an additional off-road turkeys nest dam, a booster pump and additional 2km of pipeline (see overcoming water supply management section below).

Labour and accommodation shortages were also flagged as a potential challenge due to similar demands for Chevron's nearby onshore Wheatstone Project, located approximately 12 kilometres from Onslow.

Services relocations included:

- DN 150 sewer pipe;
- DN 200 water main; and
- DN63 Onslow salt water.

These relocations were successfully managed through a program of pot holing and liaison with the asset owners to program suitable shutdown times and durations.

Local weather conditions

Works being completed between the months of November to April (tropical cyclone season) had the potential to impact on project delivery should the area have come under threat of adverse weather.

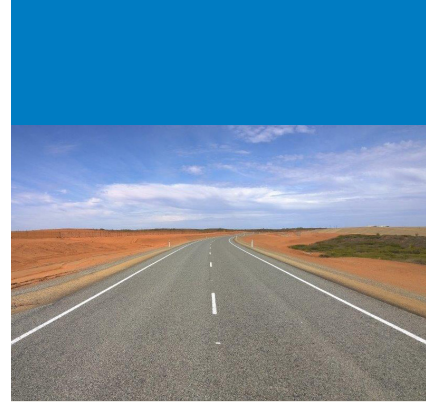
Aboriginal Heritage and environmental management

The site included areas of significance for the local Aboriginal people. This was carefully managed during clearing and topsoiling, aided by the instigation of cultural awareness training for all site personnel.

The presence of two declared pests, Parkinsonia bush and Optunia Stricta, also needed controlled spraying and disposal.

Improved subgrade

The cohesionless insitu dune sand did not produce a stable platform for construction of a pavement so the HAJV in collaboration with Main Roads WA identified a low cost solution using local occurring materials to strengthen the subgrade. Benefits included a greater whole of life solution at low cost for Main Roads WA, with improved constructability for the HAJV as the Contractor.



MRWA PROJECT REFEREES

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Strengthen foundations over tidal flats

A 500m section of the alignment crossed poor strength tidal flat zones. Alignment redesign was not possible given the site constraints, so once again Main Roads WA and the HAJV worked together to develop a solution to improve the foundation strength in the most cost effective manner using spoil rock and geotextiles. This solution also ensured the long-term performance of the road was achieved.

Community Relations

The project required considerable interface and management of stakeholders given the proximity of the site to the town. This stakeholder interfaces included:

- Water Corporation – installation and relocation of services
- Onslow Rodeo – facility adjacent to road
- Shire of Ashburton – cemetery and aquatic centre
- Chevron – adjoining land owner and client
- Onslow Salt (Rio) – adjoining landowner
- The local school – see below

The HAJV was engaged to build roadworks and site facilities at the proposed location of the new Aquatic Centre adjacent to the school. The work area was located in the built up town centre and also required management of the adjacent landowners including an Indigenous Centre. This was successfully managed through consultation with the Shire of Ashburton and stakeholders through:

Letter drops and door knocking to provide advanced notice of key events during the works;

- Avoiding works on local RDO days within the community to minimise disruption and nuisance, despite this being a main contract work day; and
- Fencing of entire site to protect school movements and manage pedestrian interface.

Overcoming water supply & management

An additional turkey nest dam was constructed. Coupled with an electric booster pump and an additional 2km of pipeline, this delivered the required 1000kL of earthworks construction water required on site each day.

The additional water supply also improved safety by eliminating the potential for any public interface, as the 40kl water trucks no longer need to travel to the pre-existing on-road water infrastructure. This also enabled an accelerated earthworks program, resulting in the pavement construction program commencing earlier than originally programmed.

