



## National Route 9 rehabilitation

UWP/Bergstan SA Joint Venture, a joint venture between UWP Consulting and Bergstan South Africa, was appointed by SANRAL on 5 July 2007 to carry out the rehabilitation investigations and design work required for the section of National Route 9 (N9) between Wolwefontein and Colesberg, 31,2 km in length.

Rehabilitation measures included widening and resurfacing the road, adding surfaced shoulders, widening and repairing 164 drainage culverts and reconstructing two existing river bridges as well as five major culverts, replacement of road traffic signs, new road markings and upgrading of rest areas.

Three agricultural underpasses were also built to enable farmers to move their livestock across the N9 safely.

The other aspect of the design involved the new interchange at the junction of the N1 and the N9. This included the construction of two new bridges, various ramps and fill embankments.

The most unique feature of the project is the staggered arrangement of the interchange. It is staggered insofar that the connection of the N9 to the N1 is some 950 m to the south of the connection between the N1 and Sluiters Street at the entrance to Colesberg.

Adding to the uniqueness of the project were the challenges encountered during construction. The major challenge which presented itself at the start of construction was the discovery that the roadbed adjacent to the route was extremely saturated due to exceptional rainfall during the previous summer.

As the road was to be widened on one side along its entire length, a tremendous challenge presented itself when the saturated in-situ materials were unable to drain due to impervious underlying layers.

A solution needed to be found and it was agreed that the saturated in-situ material should be removed and replaced with suitable rockfill material from various sources such as widened cuttings and blasting from borrow pits.

It later transpired that the entire N1/N9 area suffered from the same problem and ultimately 40 000 m<sup>3</sup> of rockfill was placed to enable the project to proceed. This resulted in the programme being extended by six months.

The project significantly improves accessibility between a main commercial hub of South Africa and an important strategic coastal region as well as safety for traffic and pedestrians at a critical interchange on the major national route connecting Cape Town, Johannesburg and the Eastern part of the country. The project was completed within three years, and represents an investment of more than R407,6-million in the regional economy. ▼

### Project information

- **Company entering:** UWP Bergstan SA Joint Venture
- **Project start date:** 16 March 2011
- **Project end date:** 1 April 2014
- **Client:** SANRAL
- **Project team:** UWP Bergstan SA Joint Venture
- **Main contractor:** BRNC N9 Joint Venture
- **Principal agent:** UWP Consulting
- **Project manager:** SANRAL Western Region
- **Consulting engineer:** UWP Consulting
- **Project value:** R407-million

