



Contracts awarded in Gauteng Freeway Improvement Project

CONSULTING ENGINEERING AND project management group SSI – a DHV company, part of the Gauteng Freeway Joint Venture – were recently awarded two contracts, together valued in the region of R1,5 billion, for the design and supervision of upgrades to two sections of the major freeways around Johannesburg and its immediate suburbs.

The other members of the JV are Goba, NTSU Engineering Consultants and Semenya Furumele Transportation Engineers.

These projects are elements of the greater South African National Road Agency Limited's Gauteng Freeway Improvement Project – a massive R14 billion undertaking that will see some 500 km of road around Pretoria, Johannesburg and Ekurhuleni being upgraded or constructed to reduce congestion and improve safety. It is the biggest single undertaking of its kind in 20 years, in terms of national road projects.

The two sections awarded to the Gauteng Freeway JV are on the N1 highway from the 14th Avenue Interchange to the Buccleuch interchange and on the N3 between the Buccleuch Interchange and the Geldenhuys Interchange – amounting to some 40 km of road. A somewhat uncommon inclusion in the scope of work is the assessment of the first kilometre of cross roads on either side of the freeway at Interchanges.

SSI's Pieter van Niekerk says the sections awarded to his JV probably amount to the biggest road project the JV has been involved in for the past ten years. The respective 12 month design contracts were awarded in December 2006.

'We've only just finished the initial assessment work required for these two sections and we're now beginning with preliminary design,' says Van Niekerk. 'This is a fast-track project that will see construction begin as early as 2008, for completion by December 2009. Work on

our two sections, as well as the other six sections that complete the overall project, are scheduled to run concurrently.

'Because of the extremely high traffic volumes involved, both sections of road have required us to look at a level of design that's never been done before. On the table at the moment are options like ultra-thin concrete and high occupancy vehicle (HOV) lanes. We're also doing noise level reviews as part of our environmental impact assessments.'

14TH AVENUE TO BUCCLEUCH

The 14th Avenue to Buccleuch section includes the four access interchanges of Beyers Naudé, Hans Strijdom, William Nicol and Rivonia Road.

This section is part of the extensive freeway network and parts of it were completed as far back as 1978. The N1 improves the West Rand's regional accessibility as well as through traffic from Bloemfontein to the south, Pretoria and

► Typical section of the N1/N3 highway which is to be upgraded
– looking west towards the Rivonia Road junction in Rivonia

Polokwane to the north, the East Rand via the N3 to the east and Kimberley via the N12 to the west.

The N1 route plays a major role in business development on the West Rand and is an important national strategic asset. The annual vehicle operating cost incurred on its network of roads is very high, so it's critical that the N1 operates as effectively as possible as a major arterial in the Gauteng network of freeways.

'We're looking at a ten-year design horizon for this section that includes improving interchanges with the addition of new and auxiliary lanes and increasing traffic capacity, as well as making provision for intelligent transport systems (ITS), ramp metering and HOV lanes. A major priority is to make appropriate provision for public transport vehicle movement,' says Van Niekerk.

The JV's task includes evaluating the integrity of the current road surface and recommending rehabilitation measures capable of achieving at least a ten year 'no maintenance period' after completion of the works. Other elements of this contract will look at bridge clearances and upgrading, road drainage, maintenance

and upgrading of road signage, freeway lighting and managing traffic during the construction phase.

BUCCLEUCH TO GOLDENHUYS

'Traffic at peak times on most sections of the N3 is at capacity or approaching capacity during the peak hour,' says van Niekerk. 'Heavy vehicle demands by 2010 will be around 20% higher than they are now and from 2010 onwards, we can anticipate a 6% per annum heavy vehicle traffic growth rate.'

'Cabinet is looking at the possibility of tolling sections of this highway and if this happens, then from 2010 onwards high occupancy vehicles will increase and this should reduce light vehicle traffic growth.'

'Part of our plan for our section of this highway is to widen the road median and outer edges to add a fourth lane of traffic in both directions, which will relieve the current problematic congestion. Further widening on the outer edges will provide auxiliary lanes at all on- and off-ramps at interchanges, while other improvements include widening of off-ramps and bridges and resurfacing the road.'

The interchanges in this section are Van Buuren Road, Gilloolys, Linksfield, Modderfontein, London Road and Marlboro Drive. □

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Source:

http://www.saice.org.za/downloads/monthly_publications/2007/CivilEngSept2007/#/0