*University of Technology, Sydney*

*Graduate School of Engineering*



# PAVEMENT RESTORATION OF NEWELL HIGHWAY FROM 6.1 KM TO 16.9 KM NORTH OF TOCUMWAL

by

**S T Sivakumar**



***Graduate Student No.*** *93028468*

***Supervisor :*** *P. J. Kenny*



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## ABSTRACT

Newell Highway is one of the major highways in Australia. It is the main route connecting major capital cities Melbourne and Brisbane. It commences in Tocumwal and ends in Goondiwindi.

In a regional sense the Newell Highway (S H 17), which is designated as a National Highway, provides an important link between two major state capitals Melbourne and Brisbane. Most of the sections of Newell highway are substandard. As a result, the Newell Highway upgrading program was commenced in 1980 to identify and upgrade the sections of the Newell Highway to National Highway standard with a two lane sealed road and adequate shoulder width.

Under this upgrading program, the section between 6.1 km and 16.9 km north of Tocumwal was identified as a substandard section when compared to the National Highway standard. Preliminary investigation was undertaken to consider maintenance, rehabilitation and construction alternatives under various funding scenarios.

Existing conditions were measured against the RTA's corporate objectives :

- Reducing road accidents
- Community responsiveness in relation to accessibility
- Maintaining the road asset
- Developing the road network.

Detailed investigations including geometric and geotechnical surveys were carried out. Different pavement design options such as deep lift full depth stabilisation, foam bitumen stabilisation and lime stabilisation and over lay were investigated, for a design life of 20 years or greater.

The deep lift option will potentially provide a longer life, however not enough research has been performed to accurately predict pavement life. The ALF trials which have been performed at Cooma should be of assistance in this area. Likewise the foam bitumen stabilisation option has not been trialed over extended periods. The stabilisation and overlay option which has been built on the other sections of the Newell Highway appears to be performing well with low deflections and no obvious cracking at this stage. It was a difficult section to construct due to problems with early trafficability.

An economical analysis was performed to determine the most cost effective method of restoring pavement for the section between 6.I km and 16.9 km north of Tocumwal. The final decision was to use stabilisation and overlay option for section 1 (6.1 km to 9.6 km) and deep lift stabilisation for section 2 (9.6 km to 16.9 km).

A broad outline for the project management analysis was undertaken so as to identify and develop a project management strategy to reconcile the "needs" of pavement restoration project with the "needs" of the local environment.

Development Phase consists of Concept Report, Environmental Analysis, Project Development Plan, Pavement Option Analysis, Risk Analysis, Quality Plan, Estimate and Schedule. Implementation Phase consists of Project Control, Control of Project Variations, Project Performance Report and Reviews and Audits. Handing Over Phase consists of Project Completion Reports Contents and Project Evaluation.

Generally, the aim of this project is to provide a thorough insight into the pavement restoration highlighting the real world problems and detailing the techniques that were used. This document will form the basis for the pavement restoration project and is involved in a rural trafficable environment specialising the area of a deep lift stabilisation.

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