



Safety index: Tullamarine-Calder Interchange



Upgrading the Tullamarine and Calder Freeway junction

In October 2005 work commenced on a major upgrading where the Tullamarine and Calder Freeways merge, adjacent to Essendon Airport, 10 km north of Melbourne. This freeway junction is a critical link in Melbourne's arterial road network, carrying more than 170 000 vehicles each day. Over 150 vehicle-related casualties have occurred at this blackspot over the past five years.

New freeway lanes have been constructed along the southern and western perimeter of Essendon Airport over a 2 km work front between Bulla Road and English Street. The project was planned, designed and constructed under an alliance agreement between VicRoads, Baulderstone Hornibrook Pty Ltd and Parsons Brinckerhoff Pty Ltd.

The Tullamarine-Calder Interchange (TCI) project was completed earlier than expected in 2007.

About the TCI safety index

A key priority for TCI was to set an occupational health and safety (OHS) benchmark that was above and beyond construction industry standards. The TCI safety index was developed in conjunction with participating organisations of the alliance and the RMIT University.

The safety index is a weighted index measurement comprising both lead and lag indicators of project OHS performance. The index works by applying a weighted index structure to track the safety performance of the project on a monthly basis.

Safety index objectives

Each month the figures for the eleven objectives were calculated and then entered into the safety index, which produced an overall monthly percentage. The performance of each individual objective had a positive or negative effect on the overall monthly result. The safety index is made up of the following objectives:

- Members of the public injured
- Medically treatable incidents
- First aid incidents
- Lost time injury
- Incident accident/near misses
- Safety walks
- Safety walk observations
- Site safety inspections
- Site safety inspection problems
- Safety assessments
- Safety assessment problems



Benchmarks explained

Each safety index objective has a specific definition that clarifies what is being measured. For example, 'Members of the public injured' is defined as 'any member of the public requiring medical treatment as a result of an injury incurred due to a TCI activity'.

TCI aimed to have no members of the public injured, no lost time due to injuries and no medically treated incidents for the life of the project. The index was weighted such that any lost time injury or member of the public injured would result in a failure for the period it occurred, regardless of performance against lead indicators.



The project average is used to measure the overall performance of the project. The average is measured against the following benchmarks:

Fail	Poor	Minimum conditions of satisfaction	Stretch	Game breaking
<60%	>65%	> 75%	>85%	>95%

Benefits of the safety index

The data used to calculate the monthly percentage is common to most projects and companies in the building and construction industry, although information collected does not tend to be as usefully and indicatively applied across the industry. TCI have combined the lead and lag indicators to accurately assess the performance to date, while also indicating future safety issues and results.

The safety index provides clear and meaningful data that can be easily articulated to senior management, line managers, staff and wages personnel. This means that all levels of the organisation are involved and have ownership of their safety performance.

Results are suitable for use in action plans which can then be implemented to address identified safety issues before problems arise.

Results

All three alliance organisations have benefited from the results of the safety index. For example, lag and lead indicators have been incorporated into all of Baulderstone

Hornibrook's monthly OHS reports. Ultimately, Baulderstone Hornibrook aims to calculate a monthly safety index on all projects, with the average monthly percentage becoming a standard feature of monthly OHS reports.

The safety index has been positively accepted by both senior management and other employees who have provided encouraging feedback. However, the tool will continue to be reviewed and adjusted, where necessary, in future years.

Looking to the future

Following the success of the safety index, and as part of TCI's OHS objectives, a tool was developed to allow TCI employees and subcontractors a forum for open and honest communication in relation to their wellbeing and TCI's management of safety. The result of lengthy consultation between the project management team and the workforce was the 'Wellbeing Indicator'.

The 'Wellbeing Indicator' acts as an OHS health check for current and future construction projects, measuring the workers' views on OHS performance and issues within projects through the use of a survey. The indicator has a number of features aimed at improving and promoting employees' health and wellbeing, such as a measure to reflect work-life balance.

About these case studies

The Australian Government is committed to improving the OHS standards for all workers on building and construction projects.

These case studies have been developed to share practical ideas that can be adopted by industry to assist in their own management of OHS issues.

The Federal Safety Commissioner consults widely with industry, OHS authorities and other relevant agencies to promote a cooperative approach to improving OHS performance.

The vision of the Federal Safety Commissioner is a building and construction industry where no one is harmed.

For further information you can:

- visit the FSC website at fsc.gov.au
- contact the FSC Assist Line on **1800 652 500**
- contact the OFSC via email at ofsc@deewr.gov.au

The Office of the Federal Safety Commissioner has prepared this case study to promote occupational health and safety (OHS) in the industry. When developing OHS initiatives, businesses and individuals should consider the circumstances and requirements particular to them and seek professional advice where required.

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