Worksite Safety Update

Promoting safety in road construction

No 111 September 2011

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Safety Excellence Award for George Street Bridge Project

The George Street Bridge Project has received the VicRoads Major Projects Safety Excellence Award for the consistently excellent standard of safety achieved during the construction of the bridge. The bridge provides a southern gateway to Dandenong and connects George Street with Cheltenham Road and crosses over Railway Parade and the Dandenong Railway Yards.

Some of the award recipients with George Mavroyeni, Executive Director Major Projects at the presentation: (Left to right) Eric Perera, Frank De Santis, Matthew Bowers, Ivan Fratric, Kristine Upton, Mary Darcy and George Mavroyeni.

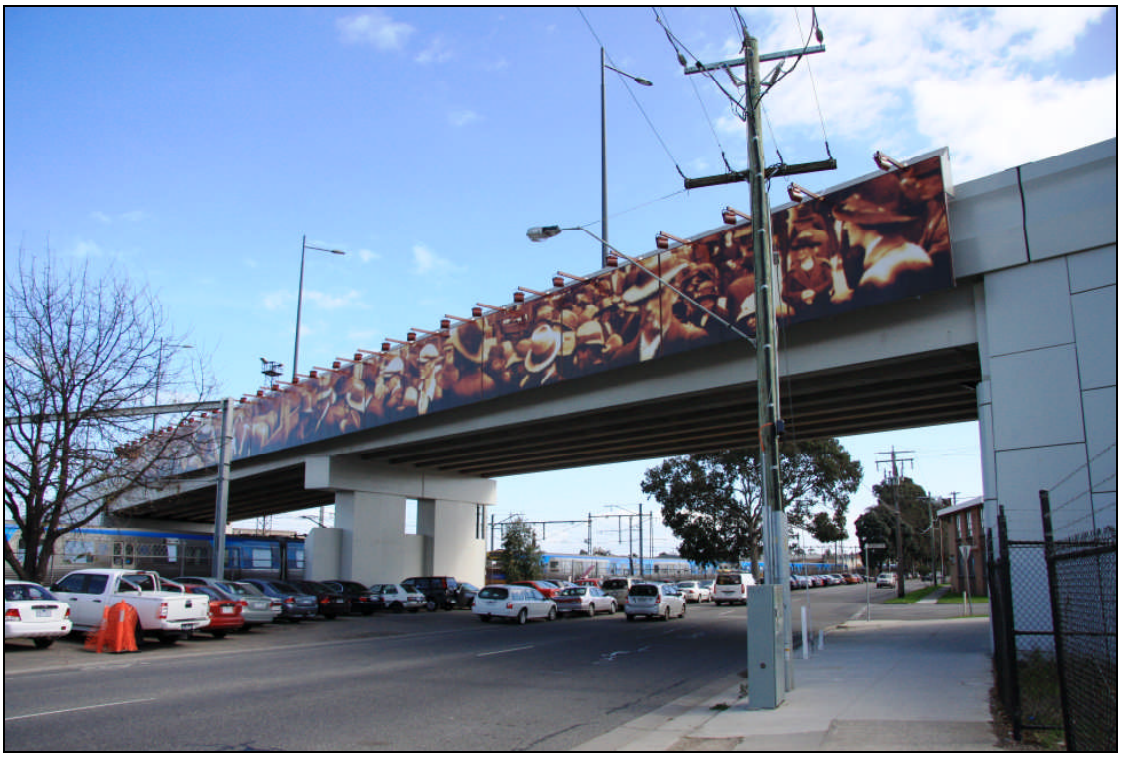
The bridge was constructed safely over both Railway Parade and the Dandenong Railway Yards with electric overhead traction power and the usual overhead and underground services. The Cut and Fill Safety Team were frequently present on site and significantly contributed to the high standard of safety evident during the project.

All personnel who worked on the project made the award possible and are to be congratulated for working safely and contributing to the excellent outcome.

The bridge passes through the site of the old Dandenong Livestock Market and has been re-named 'Stockmans Bridge' in remembrance of the history of the area. A mural entitled 'Stock Yard' depicts historical images of the market, which operated in Dandenong for more than 40 years, has been mounted on both sides of the bridge for a distance of more than 60 metres. The digital imaging was produced by local artists Sinatra Murphy P/L after lengthy consultation with members of the local community.

The awards were presented by George Mavroyeni, Executive Director Major Projects.

Award Recipients were:
Matthew Bowers - Engineering Manager - Cut and Fill
Ivan Fratric - Project Manager - Cut and Fill
Kristine Upton - Marketing Manager - Cut and Fill
Terry Hird - Project Supervisor - Cut and Fill
Michael Di Carlo - Construction Manager - Cut and Fill
Rod Storey - Project Manager - Cut and Fill
Chinthaka Arachchigie - Senior Delivery Engineer VicRoads
Justin Knight - Senior Delivery Engineer VicRoads
Eric Perera, Surveillance Manager VicRoads
Frank De Santis, Project Director Eastern Projects VicRoads
Mary Darcy, Manager Project Delivery VicRoads



East Side of 'Stockmans Bridge' and 'Stock Yard' mural

Major Inspections of Cranes and Plant – WorkSafe Communiqué

WorkSafe have issued a Communiqué to advise owners of cranes and other plant of the need to ensure that major inspections are carried out in accordance with Australian Standards.

WorkSafe advise that substandard major inspections may leave the plant owner with the belief that the item of plant is safe to operate for several more years when it may not be. When a major inspection is to be carried out, the items that shall be included for inspection, as a minimum, can be found by referring to the *Australian Standard AS 2550 Cranes, hoists and winches — Safe use series.*

A copy of the Communiqué has been appended to this Update for your convenience.

Safety Standards Past and Present on Major Civil Construction Projects

Those of us with years of experience in construction and engineering safety have observed the significant safety improvements that have occurred in our industry over the years. We know we can never relax our guard and we should be well aware of the areas that still present challenges, but it is still important that we and the younger generation understand the progress which has been made, particularly over the last 20 to 30 years.

The introduction of Victoria's first OHS Act in 1985 was clearly a major catalyst for change. This legislation saw a greater emphasis on employer and employee consultation, the systematic management of safety as an integral part of the work process, the introduction of the hierarchy of safety controls and industrial ergonomics. Prior to this time behavioural or administrative controls tended to dominate.

Within 5 years we saw the introduction of Safety Management Systems based on the quality systems approach with a major focus on improvement of the work process, rather than continuing to focus on the treatment of an increasing number of injured workers. Tertiary training for safety professionals introduced at that time facilitated the modern systematic management approach to occupational hazard management.

Today it is unacceptable for anyone to be seriously injured or lose their life while at work. The number of high risk construction activities on road construction sites demand that everyone remains vigilant because the construction hazards change frequently as the works progress.

The road construction sector of the civil construction industry are encouraging and facilitating safety innovation and the sharing of this information. As a result VicRoads major projects are steadily improving our safety performance with zero fatalities for over nine years, but we still have too many incidents in areas such as plant operation. On the positive side we certainly do not have the number of fatalities seen on major projects in past years. Even as recently as the early 1980's it was expected that 11 fatalities would occur during the construction of a major water storage dam, for example.

Unfortunately the improving civil construction performance is still masked by national statistics which include the performance of other construction areas which have not made the same progress of recent years.

As an example of progress before OHS Acts mandated the modern safety management systems approach, the performance of a well known major civil engineering project is given below. The project was exemplary for the day and it has been reported that they had half the fatalities of comparable projects in the USA and Europe at the time. The following article is reproduced with the kind permission of the Safety Institute of Australia and Fergus Robinson:

Safety Lessons from the Snowy Mountains Hydro Electric Scheme

Safety failings in the construction of the Snowy Mountains Hydro Electric Scheme were an inevitable product of the prevailing ethos of the time: "creating a safe worker rather than a safe place", according to the Master Builders Association of Victoria.

Where safety improvements for the project – in which 121 workers died over the approximately two decades of construction – were attempted, they were based on changing the behaviour of workers rather than modifying the work environment to make it as safe as possible, said Fergus Robinson, OHS training coordinator for the Master Builders Association of Victoria.

Speaking ahead of the Safety Conference, to be held from 25 to 27 October 2011 in Sydney, Robinson said this was exacerbated by frenetic round-the-clock construction; the application of economic expediency in the assessment of tunnel support; and the hard-driven nature of many major contractors.

"The coroner's inquisitions into the numerous fatalities failed to identify safety deficiencies and placed no accountability whatsoever upon the contractors involved," he said.

"Workers on the project, as new arrivals from a war-ravished Europe, were particularly vulnerable – with little protection afforded by the major union."

The worst years for fatalities were 1959, 1958, and 1963 – when 15, 14 and 11 workers were killed respectively. An average of six workers died for each year of construction, with 1.2 deaths for every 1000 workers engaged on the project.

The main causes of fatalities included: operation of mobile heavy plant and equipment; rock falls in the tunnels; falling objects; tunnel locomotives incidents; road accidents and falls from heights.

Compared to fatalities, Robinson said the numbers of workers who suffered a permanently incapacitating injury could be multiplied by more than a factor of ten.

However, just prior to and during the third phase of construction (1965 to 1971) he said the Snowy Mountains Hydro Electric Scheme Authority began to view OHS from a more "global" perspective with the new understanding that contractors had to manage their projects safely in order to eliminate, rather than simply reduce, the incidence of fatalities and serious injuries.

"The offering of significant bonuses to contractors for their efforts in breaking the cycle of one death and one permanently disabling injury for every million pounds expended, is an indication of a policy change which seemed to produce positive results," he said.

OHS professionals today could certainly learn from the "Snowy Experience", Robinson said.

"The project does provide a paradigm case of the failure of administrative controls (within the hierarchy of controls formulation) when applied as the main method of controlling and reducing risks," he said.

"Despite the technological advantages which exist today, unless safety rivals production as a major priority, tragedies will continue to occur in large-scale construction work."

He said strong ethical principles must be held by those in the control of construction in order to resist the temptation to take short cuts to achieve early project delivery.

"Therefore, project timeframes must be realistically determined," said Robinson.

"Furthermore, and most importantly, the people who perform the work must have a strong voice. Their safety concerns must be listened to and moreover, addressed."

Robinson will be speaking at the upcoming Safety Conference, to be held from 25 to 27 October 2011 at the Sydney Showground and Sydney Olympic Park. For more information visit: www.thesafetyshow.com.au

WorkSafe Heads-Up for Trenching Safety

A man is lucky to be alive after a trench collapsed on him at a building site in Melbourne's south-east recently.

The man was trapped for five minutes at the site in Cranbourne as his co-workers scrambled to dig him out .The volume of earth caused significant chest, back and abdominal injuries. He was taken to hospital in a critical condition.

Trench collapse has resulted in many fatalities and serious injuries in past years. The Melbourne and Metropolitan Board of Works (MMBW – now Melbourne Water and the other metropolitan water companies) developed some of the first competency based training and contributed to the Safety Precautions in Trenching Code of Practice.

The training and guidance provided by the Code has saved lives and it is essential that the standards set by the Code are applied or exceeded otherwise we will return to the days when fatalities from trench or excavation collapse were unfortunately too common.

Due to the long drought and dry ground conditions construction workers and their supervisors may have become complacent in this area and WorkSafe Inspector, Peter Fisher, talks about trench safety from an industry perspective.

Peter is the OHS Field Officer for the Civil Contractors Federation and for the past six years has provided support for about 550 contractors across Victoria. He has also worked as an OHS manager for a civil contractor and 25 years working with a regional water authority in design and construction.

When excavating trenches for the installation of pipelines, contractors should always ask themselves some basic questions.

- Would I let my child or grandchild enter that excavation?
- Am I doing anything different to that of a gravedigger? The answer to this should be yes, I should not be leaving a body within the excavation.

Over the last decade Victoria has not had a fatality from a trench collapse and maybe with that record, companies and individuals have become complacent. We have also, until recently, been through one of the longest dry periods on record. As the ground now contains moisture, the soil conditions have changed creating a higher risk of ground slippage and engulfment.

The changing conditions doesn't mean that trenching has suddenly become more dangerous, it means contractors must maintain the correct work practices to ensure that at the end of the day everybody goes home.

Trenches do not need to be deep to seriously injury someone, however the chances of a fatality will drastically increase with depth.

When working in trenches deeper than 1.5 metres, trenches need to be safely battered, benched, shored or ensure the correct use of trench shields.

Contractors should remember that shields do not support the ground - they are in place for the protection of the person working within the shield and as such, that person must stay within the confines of the shield.

The contractor should plan the works so it can be done safely and have a suitable competent person in charge of the excavation. Workers should be properly trained in applying safe work practices and be monitored by the contractor to ensure work is being done safely.

The *Code of Practice for Safety precautions in trenching operations* is a guide to good practice. A copy may be found at:
http://www.worksafe.vic.gov.au/wps/wcm/connect/wsinternet/worksafe/home/forms+and+publications/publications/import_safety+precautions+in+trenching+operations+%28code+of+practice+no.+8%2C+1988%29

M80 TSA Traffic No Go Zone Procedure

The M80 Western Ring Road Upgrade Tulla Sydney Alliance (TSA) Section have developed a ready guide to traffic No Go Zones based on traffic engineering driver recovery zones or clear zones as they are called in our industry and the probability of injury at various clearance from the M80 freeway with braking only to achieve a low risk residual speed at the expected speed limits.

It either exceeds or equals the Worksite Safety – Traffic Management 2010 requirements.

The M80 Tulla Sydney Alliance has made this available to our industry in the interest of improving road construction and maintenance safety.

Worksite Site Safety Update is produced monthly by VicRoads Major Projects Division to communicate industry safety information and initiatives within VicRoads and to our contractors. It is also circulated via the WorkSafe Safety Soapbox to industry. The content reflects civil road construction and maintenance safety and includes works conducted on or beside operational roads. The editor may be contacted at: michael.rose@roads.vic.gov.au

No Go Zone Procedure

Tulla Sydney Alliance

Safety Over Time

Procedure Overview	Requirements & Key points
	This procedure applies to the various scenarios that are likely to be encountered regarding traffic no go zones whilst working on the Tulla Sydney Alliance. The requirements for maintaining safe working distances from live traffic are directly reflective of the prescribed speed limits imposed on public traffic. The following criteria is to considered during the planning and execution stages of all TSA work zones that are adjacent to live public traffic.
Imposed Speed Limit	**No Go Zone Criteria**
100 km/hr	• No barrier – 12m NO GO ZONE • Concrete barrier – 1.6m NO GO ZONE • No work within 45m from start of the barrier run unless the gap is not large enough for a vehicle to fit through and first barrier is pinned • Water filled barrier – 6.0m NO GO ZONE • Guard fence – 2.0m NO GO ZONE (with exception of not being in the BCTA run-out are of 6x22m from the end terminal) • Wire rope safety barrier – 3.0m NO GO ZONE • An attenuator must be protecting you when working within no go zone.
80 km/hr	• No barrier – 9m NO GO ZONE • Concrete barrier – 1.0m NO GO ZONE • No work within 45m from the start of the barrier run if unless the gap is not large enough for a vehicle to fit through and first barrier is pinned. • Water filled barrier – 4.0m NO GO ZONE • Guard fence – 1.0m NO GO ZONE (with exception of not being in the BCTA run-out area of 6x22m from the end terminal) • Wire rope safety barrier – 2.0m NO GO ZONE • An attenuator must be protecting you when working in the NO GO ZONE
60 km/hr	• No barrier – 6.8m NO GO ZONE • Concrete barrier – 0.6m NO GO ZONE • Water filled barrier – 2.5m NO GO ZONE • Guard fence – 0.5m NO GO ZONE (with exception of not being in the BCTA run-out area of 6x22m from the end terminal) • Wire rope safety barrier – 1.2m NO GO ZONE • A shadow vehicle must be protecting you when working within the NO GO ZONE
40 km/hr	• No barriers – 4.8m NO GO ZONE • Can work directly behind concrete barriers • Water filled barriers – 1.5m NO GO ZONE • A shadow vehicle must be protecting you when working in the no go zone.

Relevant legislation	Vic OHS Act 2004, Vic OHS Regs 2007
	Traffic Engineering manual vols 1 & 2
	Road Management Act 2004 Code of Practice - Worksite Safety (traffic management)

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Communiqué to the construction industry

Major Inspections of Cranes and Other Plant

26 September 2011

1. Background

This document has been produced to advise owners of cranes and other plant, of the need to ensure that major inspections are carried out in accordance with Australian Standards.

Substandard major inspections may leave the plant owner with the belief that the item of plant is safe to operate for several more years when it may not be.

When a major inspection is to be carried out, the items that shall be included for inspection, as a minimum, can be found by referring to the Australian Standard AS 2550 Cranes, hoists and winches – Safe use series.

2. WorkSafe Victoria requirements for major inspections:

- When the competent person is assessing the item of plant regarding the extent of the major inspection it should not be based solely on the hour meter as this is not a reliable record of use. The hour meter should be read in conjunction with the maintenance / utilisation records.
- The critical or working components of the items of plant to be inspected must be identified by the manufacturer or a competent person and these components are to be identified on the report.
- A significant AS 2550 criteria is for the inspection of all critical components. Phrases contained in the report that identify '*only accessible*' components have been tested or inspected may be in conflict with the requirements of AS 2550 if a critical component is located in a non-accessible area when the plant is in the assembled state. Where necessary, the item of plant shall be stripped down to ensure appropriate access to the critical components to allow a complete and thorough inspection.
- Relying on electromagnetic non-destructive testing of critical components such as pins and bushes, while in their assembled state will not identify whether the levels of wear remain within tolerance.

- The completed report must include the following (quoted from AS 2550.1):

  (A) The competent person shall specify the maintenance necessary to ensure its continued safe operation.

  (B) The competent person shall identify components that require particular attention in subsequent periodic inspections.

  (C) The competent person shall determine the reasonable practicability of applying the current requirements of AS 1418 series.

- Item (C) above is of significant importance if the equipment originated overseas and was not built to Australian Standards.

3. Quality of Inspection Standard and Report – Your obligations

Plant owners have an obligation to ensure that their plant is maintained in accordance with the manufacturer's directions and the relevant Australian Standards or equivalent. Major inspections are a critical component of any maintenance program. As a customer of the major inspection service provider you must not accept a substandard major inspection and neither will WorkSafe. An acceptable major inspection report will incorporate, in addition to a summary statement, identification of the critical components assessed, their present condition and the maintenance requirements necessary to ensure the continued safe operation of the plant.

4. Further Information

Further advice on inspection, maintenance & repair of cranes and other plant may be found in:

- Australian Standard *AS 2550 Cranes, hoists and winches – Safe use series*
- Crane Industry Council of Australia (CICA) – *Guide to Major Inspections*

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WorkSafe Victoria.