28. Occupational health and safety

As part of the project requirements for the development of the Woolgoolga to Wells Crossing section of the Pacific Highway upgrade, an Occupational Health and Safety Development Plan has been required, in accordance with general RTA policy and the requirements of state and national legislation.

As part of the project development a Preliminary Occupational Health and Safety Development Plan, (GHD, 2006) was developed and approved by the RTA in July 2006. This plan had particular focus on the Safety in Design aspects of Occupational Health and Safety. This plan was developed to examine the risks to safety during the process of route selection and concept design development of the preferred route.

A Final Occupational Health and Safety Plan has been prepared as part of the concept design development. This plan forms a separate working paper and discusses Occupational Health and Safety in more detail, with a full listing of hazards, risks and mitigation measures completed or where appropriate to be considered in the future by the detailed design team and construction contractor.

A key aspect of the Preliminary Occupational Health and Safety Development Plan were:

- The development of a register of hazards.
- The assessment of the risks associated with those hazards.
- The identification of the project development phase at which high risk items should be addressed.
- The development of treatment measures for each of the high-level risk items.

Under the Preliminary Occupational Health and Safety Development Plan a hierarchy of controls was developed, based on approaches identified in the National OHS Strategy 2002-2012, developed by the Australian Government, Department of Employment and Workplace Relations.

Table 28-1 lists the “Hierarchy of Controls” in order of effectiveness.

Table 28-1 The 'Hierarchy of Controls'

Rank	Control Category	Description
1	Elimination	A permanent solution, which should be attempted in the first instance. The hazard is eliminated altogether.
2	Substitution	The process of replacing the hazard by another which represents a lower risk. The hazards introduced by the replacement substance or procedure must be carefully analysed.
3	Engineering Controls	Involves a structural change to the process or environment in order to place a barrier in, or interrupt the transmission path of a hazard.
4	Administrative Controls	Attempts to reduce or eliminate exposure to a hazard by requirements to adhere to procedures or instructions. This can include changes to operating procedures, or simple methods such as warning signs. The validity, robustness and longevity of these procedures must be considered.
5	Personal Protective Equipment (PPE)	Worn by individuals as the last line of defence against a hazard. The validity of PPE must be carefully monitored, as the hazard is still present and protection is often is uncomfortable and debilitating, creating its own hazard.

Under this hierarchy of controls items 1 to 3 are controls that can be examined, and if practical implemented at the design phase of the project, while items 4 and 5 are actions that are deferred to later project stages.

28.1 Risk assessment activities

A range of risk assessment activities has been undertaken during the project development process. These include:

- Occupational Health and Safety Design Workshop, 22 June 2005.
- Value Engineering and Risk Management Workshops, 16 and 20 July 2007.
- Stage 2 Road Safety Audit, September 2007.

The initial Occupational Health and Safety Design Workshop was the key forum for the identification of risks to the project and while the focus was on the route selection process, all of the hazards identified at this workshop have relevance to the concept design of the preferred route. The hazards identified at the workshop fall into six main categories:

- Traffic or road user hazards, during normal operation.
- Traffic or road user hazards during construction.
- Traffic or road user hazards during maintenance.
- Constructor hazards during construction.
- Maintenance staff hazards during maintenance.
- General structural safety and durability of highway design components.

28.1.1 Operational Phase

For all phases of the project development the hazards identified for road users all related to highway access, cross highway movement and vehicles stopping adjacent to the main highway travel lanes.

For the operational phase of the highway the impact of the these considerations has been to provide a highway concept design:

- That limits the number of cross highway movements.
- Has no right out cross highway movements.
- Allows bus stop locations to be off the main alignment.
- Discourages pedestrian movement across the highway.
- Provides for off highway access to most properties for service vehicles such as garbage trucks.

28.1.2 Construction Phase

For the construction phase of the highway the concept design has generally allowed adequate space allows the placement of formal barriers to provide safe separation between through traffic and construction activities and traffic.

Other aspects of construction phase safety relate to the provision of adequate provision of space for general construction activities. This allowance has been provided in the form of appropriate buffer distances from identified construction footprints to property acquisition boundaries.

Further to the design considerations identified above, the normal constructor responsibility for occupational health and safety will apply, requiring development of full and appropriate documentation of work methods and implementation of safety procedures.

28.1.3 Maintenance Phase

For the maintenance phase of the highway adequate verge space, appropriate planting and offline access to features such as sedimentation basins, allow adequate space for routine maintenance activities, such as mowing or sediment removal from sediment basins to occur without disruption to the normal traffic flow. Pavement maintenance would still need to be undertaken under appropriate traffic controls and would provide some level of disruption to traffic.

Further to the design considerations identified above, the normal maintainer responsibility for occupational health and safety will apply, requiring development of full and appropriate documentation of work methods and implementation of safety procedures.