



Australian Mining

A Holistic Look at Light Vehicle Heavy Vehicle Separation



Heavy Vehicle + Light Vehicle



Australian Mining



Consequence



Australian Mining



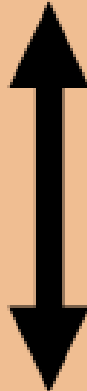
Holistic Approach Required



Australian Mining

Hierarchy Of Control

The Following Control Options Shall Be Considered And May Be Applied Individually Or In Combination

ELIMINATION	Complete removal of the hazard	Most Effective  Least Effective
SUBSTITUTION	Replacing the material or process with a less hazardous one	
ENGINEERING	Redesign the equipment or process	
ISOLATION	Separation of the hazard by guarding or enclosing it	
ADMINISTRATION	Providing controls such as training or procedures	
PPE	Use of PPE where no other controls are not practical	



Australian Mining



One Pager



Australian Mining

Case for Change	<ul style="list-style-type: none"> - Numerous fatalities and near misses in the mining industry involving HV and LV interaction - In Australian Mining (AM) since Dec 08, there has been 1 near miss every week - Behavioural issues are a major contributing factor – need for Elimination and Substitution (Hierarchy of Control) 			
Vision	<ul style="list-style-type: none"> - Eliminate LVs and HVs coming into contact or near miss situations in the mine environment 			
Mandatory Standards	<ul style="list-style-type: none"> - No Overtaking of Rubber Tyred Moving Equipment on any mine road (excludes graders with GET engaged and loaded low loaders where Positive Communication has been made and high visibility overtaking area) - All Roads, Intersections, Go-Lines will be designed, constructed and approved as per AM -HS-PR-0832 i.e. width, camber, grade, line of sight - Restricted number and higher standard LV licences for accessing all active areas (Pit Licence) - Only 1 member of the Site Leadership Team to have a Pit Licence to access active areas - Fit for Purpose Vehicles only to access active areas - Collision Avoidance or Proximity Detection on HV's (Specifically Trucks, Loaders and Dozers) and LV's, pit configured, not road registered, DO NOT leave site - All vehicles will be parked in a Fundamentally Stable Position - Use of Web Cam technology and established "Viewing Stations", to remove need to enter circuits - A Change Management process to ensure no further hazards are introduced 			
Specific Standards	Active Area	Intent	Preferred Standard	Minimum Standard in conjunction with Mandatory Standards above
	Haulroad	Eliminate need for LVs to travel on the same route as HVs	<ul style="list-style-type: none"> - Alternate Separate Routes - Suitable Median Bund 	
	Intersections	Eliminate the need for LV and HV traffic to cross	<ul style="list-style-type: none"> - Alternate Separate Routes - Designed and Constructed with less than 9 conflict points - Line of Sight distance >100m 	<ul style="list-style-type: none"> - Controlled by Stop Signs; Give Way signs are not acceptable - Road Furniture to designate an intersection i.e. - green reflectors, barrels, etc
	Ramps, Dumps and Faces	Eliminate the need for LVs to access active ramps, faces and dumps	<ul style="list-style-type: none"> - Alternate Separate Routes - Alternative Viewing Station - Suitable Median Bund 	
	Go-Lines and Workshops	Eliminate the need for LVs to access the HV area in Workshops and Designated Go-Lines	<ul style="list-style-type: none"> - No LVs on Go-Line - HV and LV separated by physical barriers and appropriate signage 	<ul style="list-style-type: none"> - Servicing of HVs on Go-Line, require positive isolation of all HVs - Workshop to designate LV parking areas. - Traffic Management Plan for all Workshop Areas
Indicators of Success	<ul style="list-style-type: none"> - No near misses between HVs and LVs reduced vehicles onsite, reduced operating costs and reduced accident damage - Increased engagement and interaction between engineering, operational and functional staff - Heightened ownership and accountability of the Active Areas by the supervisor level - Better Planning and Communication at Prestarts and Production Meetings 			



Australian Mining





Australian Mining

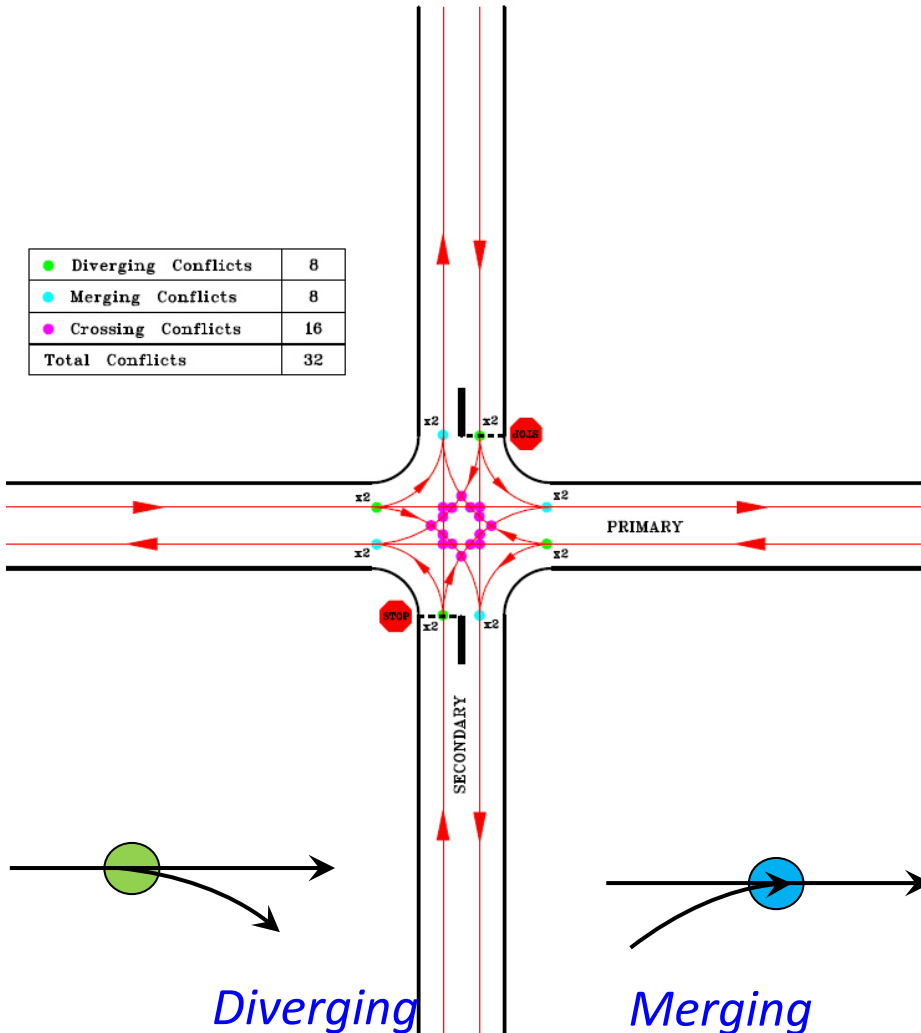


Reducing CONFLICT points

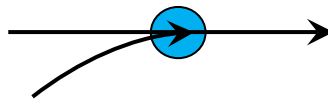


Australian Mining

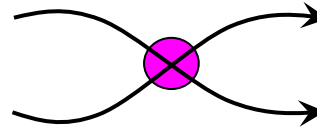
● Diverging Conflicts	8
● Merging Conflicts	8
● Crossing Conflicts	16
Total Conflicts	32



Diverging Conflict

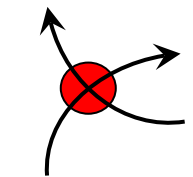
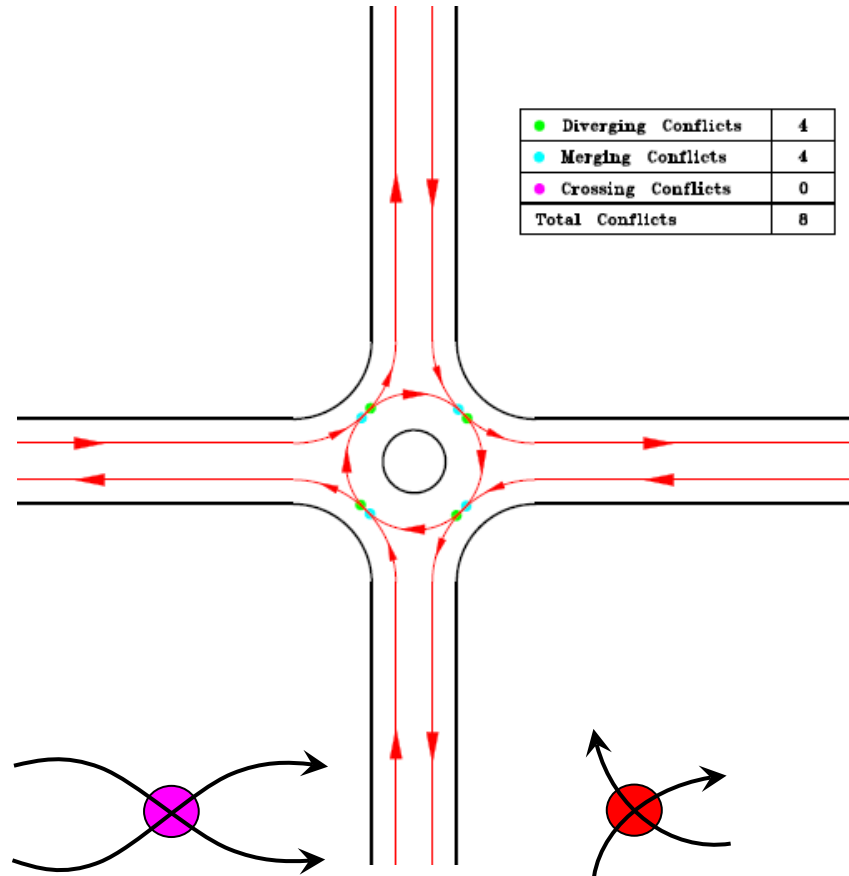


Merging Conflict



Weaving Conflict

● Diverging Conflicts	4
● Merging Conflicts	4
● Crossing Conflicts	0
Total Conflicts	8

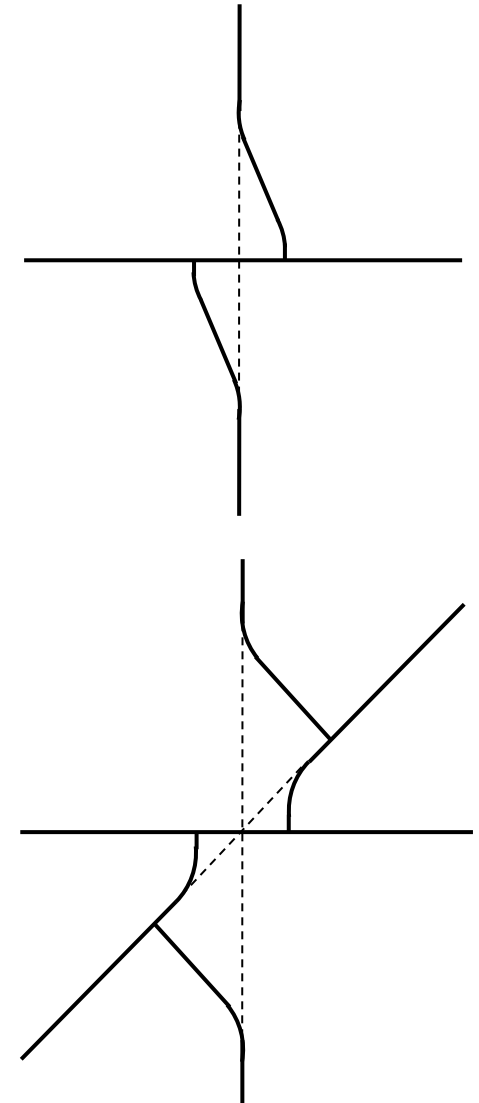
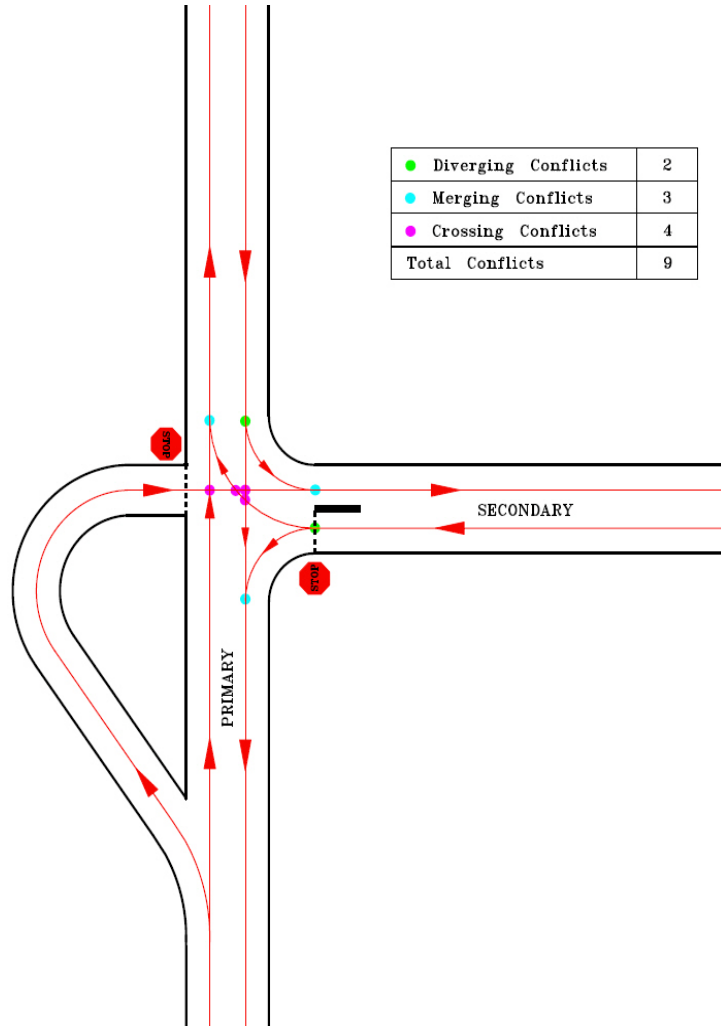
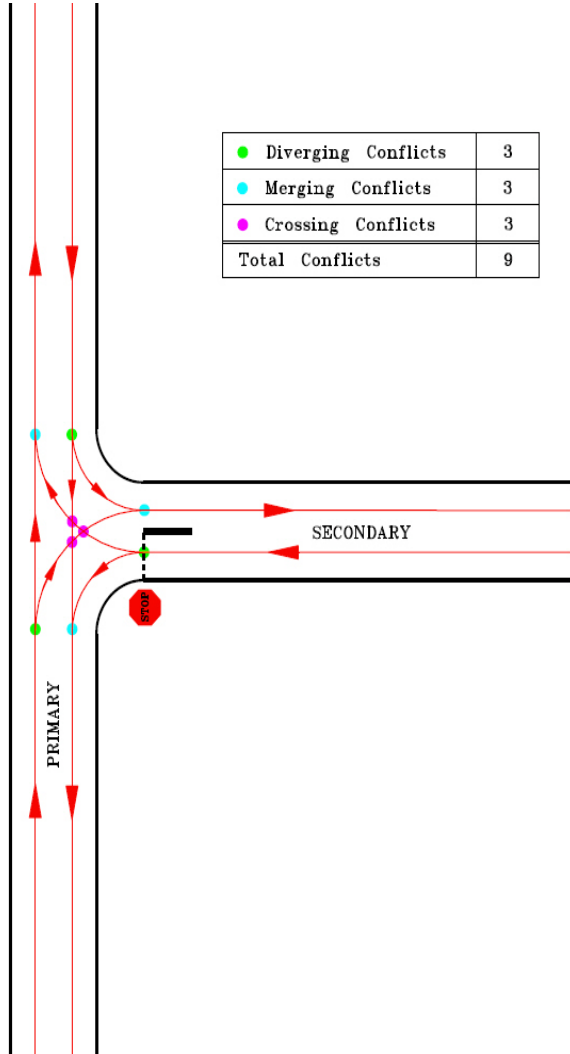


Crossing Conflict

Example Treatments



Australian Mining



Intersections



Australian Mining



**There are
challenging
intersections
everywhere!**

Opportunity NOT obstacle



Australian Mining

- »If this was easy why have we not already done it?
- »It is a **STEP CHANGE** – necessary to be provocative, challenging and organic
- »This is not **GOING AWAY** – here for the long haul
- »Find a way to ‘**Make it Work**’ on your Job

Tarong Meandu Mine - Location



Australian Mining



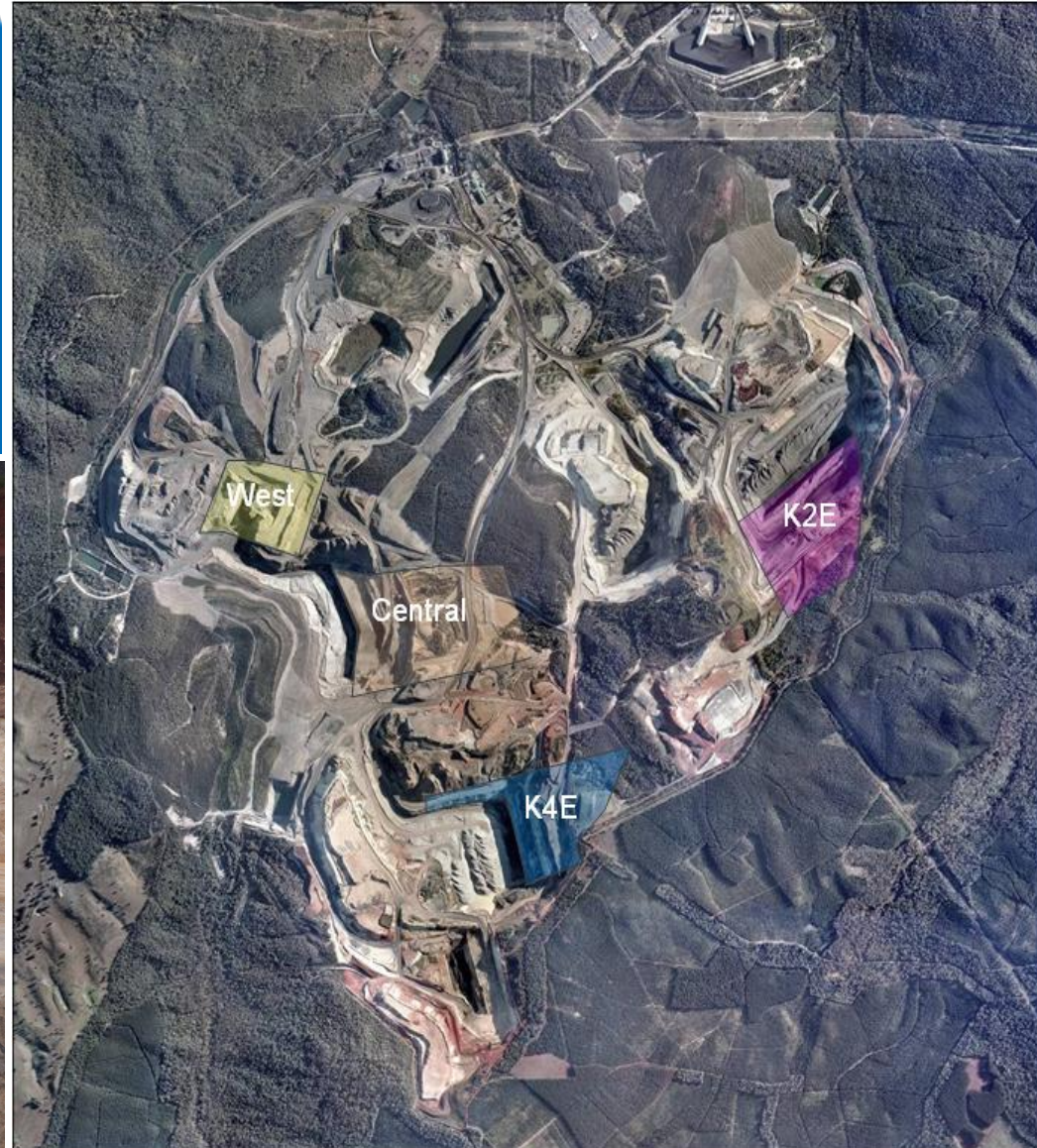
The Journey



Australian Mining



Tarong Coal Project – Meandu Mine



Product



Australian Mining

- » Produces a single domestic thermal coal product
- » 5 Mtpa for 2008/2009
- » 100% of product to Tarong Power Station





Australian Mining



Separation



Australian Mining

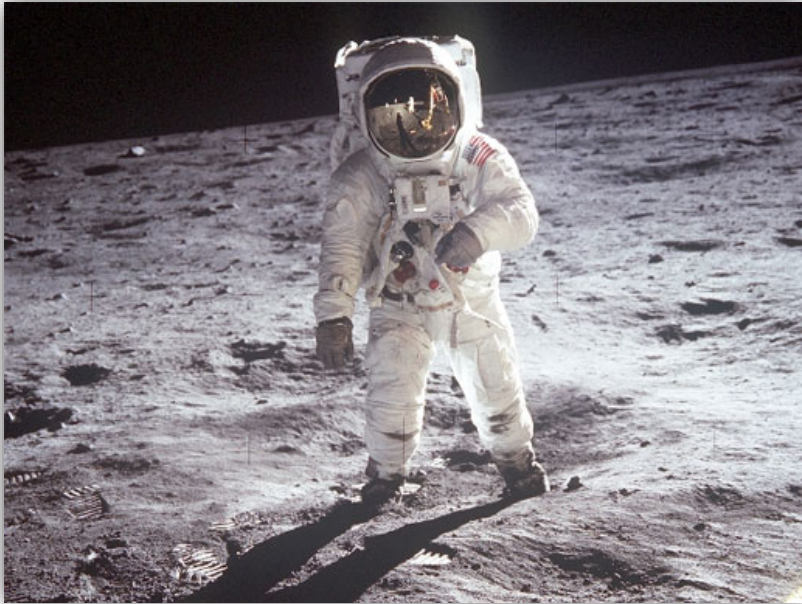
⌘



Elimination



Australian Mining



**Man on the moon
type targets**

