RAILWAY LEVEL CROSSING CHECKLIST

Road Safety Review of Railway Crossings

Location: _____ **Crossing No.** _____

Date of On-Site Inspection: (Day) / / (Night) / / Weather: _____

CHECKLIST 5.1 - GENERAL TOPICS

ITEM	*ISSUES TO BE CONSIDERED*	*COMMENTS*
1 ***Level of control***	Is the level of control (eg Give Way Signs, Stop Signs, Flashing Lights, Boom Barriers) in accordance with guidelines?	
2 ***Sight distances***	Are required sight distances likely to be restricted by future vegetation growth? Is it possible for sight distances to be obstructed by temporary events such as parked wagons and vehicles, stockpiles, etc?	
3 ***Variations in Train Activity***	Has the railway operator been contacted to check for any changes or seasonal variation in train activity? Is the railway still in use?	
4 ***Railway Operations***	Has the railway operator/s been contacted to determine whether any special operational conditions apply to the train (e.g. sound horn, display headlights, reduce speed, flag person control, etc.)?	
5 ***Emergency Access***	Is there adequate provision for emergency vehicle access to the crossing?	
6 ***Temporary Works***	Are all locations free of construction or maintenance equipment, and any signing or temporary traffic control devices that are no longer required?	

CHECKLIST 5.2 - ALIGNMENT AND CROSS SECTION

ITEM	ISSUES TO BE CONSIDERED	COMMENTS
1 ***Visibility, Sight Distances***	Is sight distance to other vehicles adequate for the speed of traffic approaching the crossing? Is adequate sight distance provided for intersections, driveways, pedestrian crossings etc?	
2 ***Design Speed***	Is the horizontal and vertical geometry (including the longitudinal profile of the road over the rails) suitable for the (85th %ile) traffic speed? Does the road superelevation conflict with the rail profile, or vice versa?	
3 ***Readability by Drivers***	Are there any sections of roadway or railway which may cause confusion, eg: (a) Have disused pavement or rail tracks been removed? (b) Have disused signs, pavement markings or signalling equipment been removed properly? (c) Do streetlight and tree lines conform with the road and/or rail alignment? (d) Are all railway tracks in use clearly obvious?	
4 ***Widths***	Are all traffic lane and carriageway widths, adequate? Are shoulder or verge widths appropriate (eg for broken down or emergency vehicles)?	
5 ***Drainage Structures***	Are drainage structures in the vicinity of the crossing safe for run off vehicles to traverse?	

CHECKLIST 5.3 - LAYOUT AND CONTROLS

ITEM	ISSUES TO BE CONSIDERED	COMMENTS
1 ***Location***	Is the crossing located safely with respect to horizontal and vertical alignment?	
2 ***Warning***	Where the crossing is located near the end of high-speed road sections (eg on the terminating approach to a T-junction), are there traffic control devices to alert drivers?	
3 ***Controls***	Do signs and/or pavement markings conform with actual vehicle movements at the crossing satisfactorily?	
4 ***Layout***	Is the alignment of kerbs, traffic islands and medians satisfactory? Is the crossing layout obvious to all users? Are turning radii and tapers at nearby intersections and driveways appropriate? Are adequate approach and departure stacking distances available for long vehicles? Can queuing over the rails suddenly occur due to unexpected downstream events (eg right turn vehicle giving way to opposing traffic, pedestrian crosswalk, guard crossing, etc)? Do pedestrian mazes, fences or other structures restrict visibility from side roads or driveways?	
5 ***Access Tracks***	If provided, can vehicles safely enter and leave nearby railway maintenance track/s?	

CHECKLIST 5.4 NON-MOTORISED TRAFFIC

ITEM	*ISSUES TO BE CONSIDERED*	*COMMENTS*
1 ***Paths***	Are there appropriate travel paths and crossing points for pedestrians, cyclists and the disabled (wheel chairs/'gophers')?	
2 ***Barriers and Fencing***	Where necessary, are pedestrian maze treatments and/or gates installed for pedestrians and cyclists? Is the pedestrian maze in accordance with AS1772-7, 1993? are associated signing and/or warning lights and audible warning devices installed? Is fencing installed to guide pedestrian movements and is fencing of appropriate design (eg avoids solid horizontal rails)? Where necessary, is crash barrier installed to controll pedestrian and cyclist flows?	
3 ***Surface***	Are rail tracks flush with the road and/or path surface to avoid tripping by pedestrians and dislodgement of cyclists?	
4 ***Elderly and Disabled***	Are there adequate provisions for the elderly, the disabled, children, wheelchairs and baby carriages (eg holding rails, kerb and median crossings, ramps)? Where necessary, are handrails provided and are they adequate?	
5 ***Cyclists***	Is the pavement width adequate for the number of cyclists using the crossing? Where designated dual-use-paths adjoin pedestrian mazes, are 'END' DUP signs installed? Are bicycle safe grates provided at drainage pits where necessary?	

CHECKLIST 5.5 SIGNS AND LIGHTING

ITEM	ISSUES TO BE CONSIDERED	COMMENTS
1 ***Street Lighting***	Is appropriate lighting installed? Is all lighting operating satisfactorily? Are the appropriate types of poles used for all locations and correctly installed (eg slip-base at correct height, rigid poles controlled if within clear zone)?	
2 ***Conflicting Signals***	Are all locations free of any lighting or other signalling which may conflict visually with railway crossing signals or railway train signals?	
3 ***Signs***	Are all necessary signs in place? Are they conspicuous and in accordance with AS1742-7, 1993? Are there any redundant signs? Are traffic signs in their correct locations, and properly positioned with respect to lateral clearance and height? Are signs placed so as not to restrict sight distance, particularly for turning vehicles? Are all signs effective for all likely conditions (eg day, night, rain, fog, rising or setting sun, oncoming headlights, poor lighting)? Do sign supports conform to guidelines? Where applicable, are overhead electric warning signs installed? Where appropriate, are the numbers of tracks signed?	

CHECKLIST 5.6 PAVEMENT MARKING AND DELINEATION

ITEM	ISSUES TO BE CONSIDERED	COMMENTS
1 ***Pavement Marking***	Is all necessary pavement marking installed? Are pavement markings (centre lines, edge lines, transverse lines, cross hatching) clearly visible and effective for all likely conditions (eg day, night, rain, fog, rising or setting sun, oncoming headlights, light coloured pavement surface, poor lighting)? Particularly at skewed crossings, does longitudinal pavement marking provide adequate guidance through the crossing? Are stop or holding lines positioned correctly?	
2 ***Delineation***	Have delineation devices (eg width markers, RAILWAY CROSSING boards, guide posts, chevron alignment markers, etc) been installed where required? Are they correctly placed? Is delineation effective for all likely conditions (eg day, night, rain, fog, rising or setting sun, oncoming headlights)? Can dust from unsealed surfaces adversely effect delineation? On truck routes, are reflective devices appropriate to driver's eye height?	
3 ***Raised Pavement Markers***	Where coloured raised pavement markers are used, have they been installed correctly? On light coloured pavement surfaces (eg concrete) are RPMs used to simulate traffic lanes? Are RPMs in good order?	

CHECKLIST 5.7 - SIGNALS AND BOOM BARRIERS

ITEM	ISSUES TO BE CONSIDERED	COMMENTS
1 ***Operation***	Are signals, boom barriers and bells operating correctly? Are pre-warning times and sequences prior to the arrival of the train in accordance with appropriate codes of practice? Is the number and location of signal displays appropriate? Where appropriate, are the railway crossing signals co-ordinated with nearby traffic control signals? Are the delays to vehicles due to train activity excessive, (ie > 50% of cycle time)? Where appropriate, are the railway crossing signals co-ordinated with the train signalling system?	
2 ***Visibility***	Are signals clearly visible to approaching motorists, (as per guidelines)? Have correct focal alignments (for both cars and trucks) been used? Can visibility to signals be obscured by temporary events such as high vehicles stopped in side roads? Is the end of likely vehicle queues visible to motorists so that they may stop safely? Have any visibility problems caused by the rising or setting sun been addressed (eg target boards)? Are signal displays focused and aligned so that they can be seen only by the motorists for whom they are intended? Where signal displays are not visible from an adequate distance, are supplementary signals or advance flashing warning signs installed? Is appropriate warning provided to vehicles entering from side roads and driveways? Is there possible driver distraction from roadside advertising signs and hoardings?	

CHECKLIST 5.8 - PAVEMENT

ITEM	ISSUES TO BE CONSIDERED	COMMENTS
1 ***Pavement Defects***	Is the pavement free of defects (eg excessive roughness or rutting, corrugations, potholes etc), which could result in safety problems (eg loss of steering control)?	
2 ***Skid Resistance***	Does the pavement appear to have adequate skid resistance? Has skid resistance testing been carried out where necessary? Are the rail tracks located on vehicle turning paths and when wet, pose potential skidding hazards to turning vehicles, particularly motorcycles?	
3 ***Ponding***	Is the pavement free of areas where ponding or sheet flow of water may occur, with resultant safety problems?	
4 ***Loose Screenings***	Is the pavement free of loose screenings?	