PROTECTED LEVEL CROSSING RISK ASSESSMENT

1. LEVEL CROSSING OVERVIEW AND ENVIRONMENT

1.1 LEVEL CROSSING OVERVIEW

This is a risk assessment for Croxton AHB level crossing.

Crossing Details	
Name	Croxton AHB
Type	AHB
Crossing status	Public Highway
Overall crossing status	Open
Route name	ANGLIA
Engineers Line Reference	ETN – 96m 46ch
OS grid reference	TL902868
Number of lines crossed	2
Line speed (mph)	40 (TSR)
Electrification	No electrification present
Signal box	Cambridge PSB – Thetford workstation

Risk Assessment Details	
Name of assessor	Darren Lincoln
Post	LCM
Date completed	25-10-2021
Next due date	24-01-2023
Email address	darren.lincoln@networkrail.co.uk
Phone number	07824411923

ALCRM Risk Score	
Risk per traverse risk	G
Collective risk	3
FWI	0.006874084

1.2 INFORMATION SOURCES

The reference sources used during the risk assessment included:

- Census Counter
- SMIS

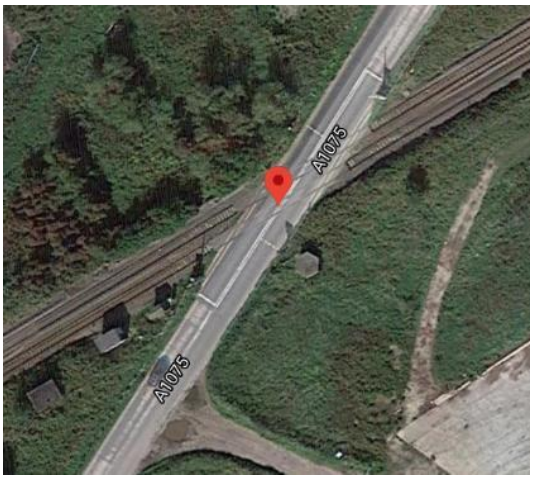
1.3 ENVIRONMENT

Approach Photos

Up side crossing approach

Down side crossing approach

The level crossing is located on A1075. The road approach speed is estimated to be Greater than 50mph.It is a Public Highway level crossing.



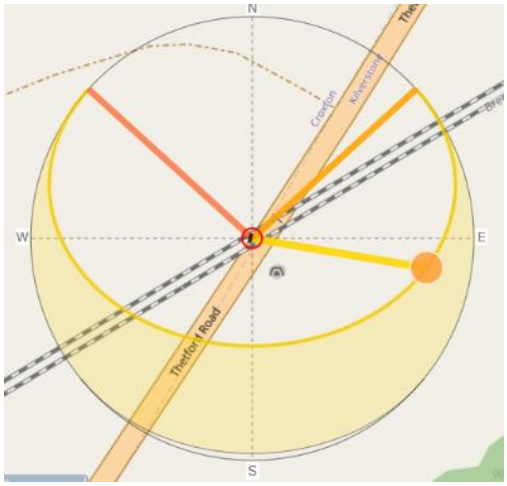
At Croxton AHB level crossing the orientation of the road/path from the north is 205°; the orientation of the railway from the north to the up line in the up direction is 260°. Crossing is in the top 100 of crossings at risk of sun glare list.

Impact of low sun on the crossing

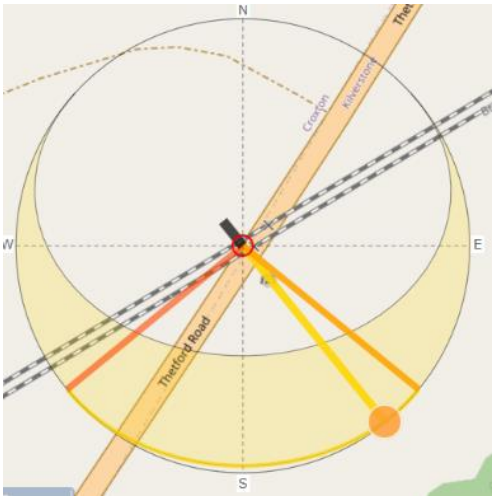
Below is the output from the Sun Calc application, which shows the lines of sunrise and sunset angles at two times of year (longest day June 21st & shortest day December 21st) when low sun would align with the rail approaches and might impact on the sighting.

The thin orange curve is the current sun trajectory, and the yellow area around is the variation of sun trajectories during the year. The closer a point is to the centre, the higher is the sun above the horizon.

The yellow line shows the direction of sunrise; the dark orange line the direction of sunset and the mid orange line the direction at a selected time of day (shown by the orange circle above the satellite image).



Longest day



Shortest day

There are planned or apparent developments near the crossing which may lead to a change or increase in use or risk.

Site Visit General Observations:

Kingfleet Thetford Full scheme consists of comprehensive mixed use urban extension (up to 5000 dwellings, 22.5ha of employment land, local centres, 3 primary schools, green infrastructure, playing fields, other amenity areas & means of access) Breckland Council – application No 3PL/2011/0805/O https://www.kingsfleet-thetford.co.uk/

2. LEVEL CROSSING USAGE

2.1 RAIL

The train service over Croxton AHB level crossing consists of Passenger and Freight trains. There are 66 trains per day. The highest permissible line speed of trains is 40 mph. Trains are timetabled to run for 17.5 hours per day.

Assessor's notes:

Trains are timetabled to run for 17.5 hours per day, but lines are open 24 hours a day and may receive additional freight, passenger, or engineering trains

2.2 USER CENSUS DATA

A 24-hour census was carried out on 27-05-2015 by Intelligent Data Collection Limited. The census applies to 100% of the year.

The census taken on the day is as follows:

Cars / car-based vans / quad bikes	4616
Large vans / small lorries / large 4x4s	996
Buses / coaches	45
HGVs	218
Tractors / large farm vehicles	6
Pedal / motor cyclists	79
Pedestrians	0
Horse riders	0
Animal herders	0

Assessor's general census notes:

Census data taken from a daily average of a 14-day census carried out by Intelligent Data Collection Limited between 27/07/2015 to 11/08/2015

Available information indicates that the crossing does not have a high proportion of vulnerable users.

Vulnerable user observations:

No evidence of a higher than usual number of vulnerable people using the crossing

Available information indicates that the crossing does not have a high number of irregular users.

Irregular user observations:

No evidence of a high number of irregular users

2.3 USER CENSUS RESULTS

ALCRM calculates the usage of the crossing to be 5881 road vehicles and 79 pedestrians and cyclists per day.

3. RISK OF USE

3.1 CROSSING APPROACHES

The road approach speed for vehicles on the up side of the crossing is Greater than 50mph and the approach speed on the down side of the crossing is Greater than 50mph.

One of the approach roads to Croxton AHB level crossing is assessed as being long and straight. There are prominent features on the approach to the level crossing that could distract drivers.

Up side crossing approach (reverse view)

Down side crossing approach (reverse view)

The road surface, including gradient if present, is unlikely to impact on the ability of a vehicle to stop behind the stop line.

There are known issues with ice, mud, loose material, or flood water. In addition, there are known issues with foliage or fog.

Assessor's notes:

Mud from field entrances/exits at certain times of year

At the estimated road speed, the visibility of level crossing signage and equipment on the up side is easily sufficient on the down side approach and is adequate on the up side approach a vehicle would have surplus time to react if the crossing is activated.

At the estimated road speed, the visibility of level crossing signage and equipment on the down side is adequate, the visibility should be sufficient for a vehicle to be able to react in time if the crossing is activated

3.2 AT THE CROSSING – GROUNDING RISK

The visual evaluation of the vertical profile of the road indicates that it does not create a risk of vehicles grounding on the crossing.

3.3 AT THE CROSSING – BLOCKING BACK

The road layout at or close to the crossing does not result in identified incidents of traffic queuing over the crossing. Blocking back risk is known to occur Never known to occur.

No incidents of blocking back are recorded.

There are identified issues with the road layout, parked cars or other features that could stop traffic. In addition, the road is a known diversionary route.

Assessor's notes:

There is a number of accesses to fields on approach to this level crossing, but no evidence of blocking back during visits or census carried out by Intelligent Data Collection Limited

3.4 AT THE CROSSING – ANOTHER TRAIN COMING RISK

Trains are known to occasionally pass each other at this crossing.

3.5 INCIDENT HISTORY

A level crossing safety event has been known to occur at Croxton AHB level crossing in the last twelve months.

Assessor's incident history notes:

Within the last 12 months

28/09/2021 - Barrier rested on top of a car at Croxton AHB LC. No barrier damage.
15/08/2021 - Car weaved around lowered barriers
17/11/2020 - Flat bed lorry clipped the barrier

Historic data

26/08/2020 - Articulated lorry smashed through YN (Up side) barrier
13/07/2020 - RV user struck and removed barrier
26/09/2019 - 1K77 reported a van inside the barriers at Croxton AHB level crossing facing towards the train. No near miss or EBA**.**
24/06/2017 - At 11:38 hours the Cambridge Thetford signaller reported Croxton AHB's level crossing had failed, barriers went down on own accord and remained down. The Signaller received calls from member of the public calling in and reporting traffic swerving the barriers. Trains were placed at caution. British Transport Police advised - Ref: 229
30/12/2016 -Trespass- 1K83 (Greater Anglia 1540 Norwich – Cambridge) reported a youth trespasser on the line near Croxton Level Crossing.
03/12/2015 - 1L08 09:52 Liverpool Lime Street - Norwich; Foreign lorry cab/trailer stuck under lowered barriers at Croxton LC.
30/10/2015 - Lorry struck barriers after ignoring the warning lights at Croxton AHB LC. No barrier damage.
06/12/2014 - Barriers failed down at Croxton AHB LC and users had been weaving around the barriers.
29/07/2014 - Barriers lowered on tanker lorry at Croxton AHB LC
18/03/2014– Military slow moving road vehicle failed to report Croxton Level Crossing clear after use.
25/11/2013 - 1L05 (EMT 0647 Liverpool Lime St – Norwich) reported tractor used Croxton LC with the barriers lowering. Not a near miss.
20/09/2013 - 1K60 (GA 0812 Cambridge – Norwich) reported that an HGV was stuck under the upside barrier.
03/08/2013 - Car on the crossing at Croxton AHB LC as 1K55 05:37 Norwich - Cambridge passed over. NOT a near miss
27/07/2013 - Car very close to running line at Croxton AHB Level Crossing.
02/07/2013 - 2K85 (GA 1638 Norwich – Cambridge) reported HGV obstructing Croxton Level Crossing with lowered barrier between cab and trailer.
18/03/2013 - Car zig zagged barriers at Croxton AHB LC in front of 1K78 16:12 Cambridge - Norwich. Not a near miss.
29/08/2012 - Cable theft at Croxton Level Crossing
25/08/2012 - Barriers at Croxton LC came down on car bonnet. There was no damage to the barrier booms.

Under the 14-day census carried out by Intelligent Data Collection Limited between 27/07/2015 to 11/08/2015 the following incidents occurred

Red light running - Cars = 147, Vans/Small Lorries = 32, HGVs = 9, Buses = 1 & Motor Cyclist = 3.

Under the 28-day census carried out by Intelligent Data Collection Limited the following incidents happened for zigzagging - Cars = 1.

Red light violations / barrier weaving

The chance of a vehicle user deliberately misusing the crossing is estimated as Significantly higher than average.

3.6 THE CROSSING – STRIKE IN TIMES

Strike in times

	Designed strike in time	Does the observed strike in time conform to the designed strike in time?	Is the observed barrier down time excessive?
Up line	47	Yes	No
Down line	46	Yes	No

4. ALCRM CALCULATED RISK

Croxton AHB level crossing ALCRM results.

Key risk drivers: ALCRM calculates that the following key risk drivers influence the risk at this crossing:

- Road traffic accident
- Second train coming
- Railway cause: slow moving / short warning
- Blocking back
- Late braking
- Incorrect use (eg. non-adherence with level crossing road traffic light signals)
- Fails to observe level crossing
- Parked on level crossing
- Stranded / failed on crossing
- Sunlight obscures crossing/lights or view up / down track
- Turns onto the railway
- Poor crossing visibility

The calculated safety risk for this crossing is:	**Risk per Traverse (Letter)**	**Collective Risk (Number)**
	G	**3**
	Risk per Traverse (FWI)	**Collective Risk (FWI)**
Cars / car-based vans / quad bikes	0.000000003	0.004431514
Large vans / small lorries / large 4x4s		0.000956193
Buses / Coaches	0.000000001	0.000009021
HGVs		0.000043701
Tractors / large farm vehicles		0.000001203
Pedal / motor cyclists	0.000000041	0.001182059
Pedestrians		0
Horse Riders		0
Animal Herders		0
Vehicles user in pedestrian mode		0
Train Passengers	0.000000001	0.00002791
Train Staff	0.000000006	0.000134299
Derailment Risk		0.000088185
Weighted Average (Users)	**0.000000003**	
Total Risk		**0.006874084**
	Average Consequence	0.318846687
	Collision Frequency	0.021559215

5. OPTION ASSESSMENT AND CONCLUSIONS

5.1 OPTIONS EVALUATED

The options evaluated to mitigate the risks at Croxton AHB crossing include:

Option	Term	Risk per Traverse	Collective Risk	FWI	FWI Difference	Cost	Benefit Cost Ratio	Status	Comments
Upgrade to MCBOD	Long Term	K	6	0.000369833	0.006504251	£3,500,000	0.08	Option accepted by optioneering panel on 11.02.22 - C3R Project	Current planned option Previously accepted by optioneering panel 18.11.20 – Planned 2023
Red Light Safety Enforcement Camera (RLSE)	Long Term	G	3	0.006670507	0.000203577	£136,000	0.21	Option accepted by optioneering panel on 11.02.22 - C3R Project	Provision of RLSE would help reduce the high amount of red violations – Previously accepted by optioneering panel 18.11.20 - Complete as part of the MCBOD upgrade
Vehicle activated signage (VAS)	Long Term	G	3	0.006670507	0.000203577	£12,000	0.24	Option accepted by optioneering panel on 11.02.22 - C3R Project	Provision of VAS that flashes up level crossing ahead warning would provide approaching road vehicles enhanced visual warning of approaching crossing. This may help decrease barrier strikes – Previously accepted by

									optioneering panel 18.11.20
Option	**Term**	**Risk per Traverse**	**Collective Risk**	**FWI**	**FWI Difference**	**Cost**	**Benefit Cost Ratio**	**Status**	**Comments**
Long sun hoods -	Long Term	G	3	0.006534789	0.000339295	£2400	2.27	Option rejected by optioneering panel on 11.02.22 - LED's considered suitable Sun Glare Mitigation	Given the heavy sun glare on approaches, long sun hoods fitted alongside the previously installed LED wig wags would aid visibility of road traffic signal lights (wig wags).
Renew high friction anti-skid road surface	Long Term	G	3	0.006670507	0.000203577	£25,000	0.54	As per optioneering panes comments l on 11.02.22 – Consider - liaise with HA and if no buy in then consider NWR stand alone proposal	High friction surface previously provided at this location. Given high approach speeds renewal of this surface would provide additional traction for vehicles breaking late at speed upon crossing activation - Previously accepted by optioneering panel 18.11.20
9-day traffic survey	Short term	N/A				£5000	N/A	Option accepted by optioneering panel on 11.02.22	Current survey conducted on 27-05-2015

NOTES

Network Rail always evaluates the need for short and long-term risk control solutions. An example of level crossing risk management might be a short-term risk control of a temporary speed restriction, with the long-term solution being closure of the level crossing and its replacement with a bridge.

5.2 CONCLUSIONS

Assessor's notes:

Croxton AHBC is on the Ely to Norwich line at 96m 45ch, there are two railway tracks at the crossing, usual train service consists of 2 trains per hour on either track and 6 freight trains per day

The crossing located on the A1075 which is a heavily used road.
From the North West direction (down side) the road is straight until you pass over the crossing and its bends towards the right, from this direction heavy sun glare can be an issue at certain times of year.
From the South West direction (up side) the road curves approximately 200meters before crossing, given road speed and curvature vehicles approaching from this direction would have little time to react upon crossing activation this may account for the high barrier strike incident rate. Heavy sun glare can be an issue at certain times of year

Given high incident rates of barrier strikes, vehicles Zig zagging barriers and running red lights this level crossing is deemed to be high risk and a TSR (temporary speed restriction) reducing line speed from 90mph to 40mph was enforced by the ORR in 2012 to reduce the risk of a catastrophic accident.

Network Rail have has worked with the local highways department to explore possibilities of reducing the road speed, this was unsuccessful as local highways department was unwilling to reduce road speed.

An upgrade to An MCBOD crossing is planned in 2023, this will improve safety at the crossing but will not remove all issues relating to fast road approaches leading to minimal reaction times on crossing activation. Consideration should be given to vehicle activated signage and high friction road surface in order to help mitigate these issues

Current AHB Crossing Operation

The crossing is fitted with two sets of road signals, one on either side of the road just in front of the barrier. Both the road signals and the boom lights are fitted with modern high intensity LED lamps.

When a train strikes in at the treadle or electronic switch, the yodel alarm will begin to sound along with the solid amber road signals illuminating for approximately 3 seconds, they then switch to the alternately flashing road signals (which continue flashing until a train has passed clear). After the red signals have been flashing for approximately 7 seconds, the boom lights will illuminate, and the barriers will begin to lower, taking around 7 seconds to reach a horizontal position. The road is then partially blocked with only the near side of the carriageway closed off.
This allows a free exit to a vehicle if travelling slowly or one that the driver has ignored the warning lights
.
Between 15 to 20 seconds after the crossing barriers are fully lowered the train will pass over the crossing.
Once the train has passed the strike out treadle, the crossing barriers will begin to rise with the road and boom lights turning off when the barrier reaches around 60degrees from horizontal.
The yodel alarms will have sounded continually from the initial amber light illuminating to the switching off the road signals. If a second train strikes in on the other line during any part of the activation, the yodel alarm with change frequency, alerting pedestrians or cyclists that another train is approaching.
Being a half barrier automatic there are risks of a drivers zigzagging around the barriers this type of misuse has been documented at this location.
Given traverse length there is a risk that pedestrians may be within stop lights when crossing activates, they also be walking along the unprotected (no barrier) side of the road which would allow free and unrestricted access to the railway line. This type of risk is reduced given the crossing location being on a country road with no pavements and very low recorded numbers of pedestrians.

Options to reduce or remove the above considered risks are: -

Upgrade to MCBOD – This option would take the crossing to the current highest level of protection and remove the possibility of a road users weaving the barriers with a train approaching. Given that barrier down times will be longer this option may promote additional red-light violations and barrier strikes
Option accepted by optioneering panel on 11.02.22 - C3R Project

Red Light Safety Enforcement Camera (RLSE) – Provision of RLSE will help reduce red light violations and barrier strikes, this option is being included as part of the MCBOD upgrade.
Option accepted by optioneering panel on 11.02.22 - C3R Project

Vehicle activated signage (VAS) - Provision of VAS that flashes up level crossing ahead warning would provide approaching road vehicles enhanced visual warning of approaching crossing. This may help decrease barrier strikes.
Option accepted by optioneering panel on 11.02.22 - C3R Project

Long sun hoods - Given the heavy sun glare on approaches, long sun hoods fitted alongside the previously installed LED wig wags would aid visibility of road traffic signal lights (wig wags). This option should be considered as part of the MCBOD upgrade.
Option rejected by optioneering panel on 11.02.22 - LED's considered suitable Sun Glare Mitigation

Renew high friction anti-skid road surface - High friction surface previously provided at this location. Given high approach speeds renewal of this surface would provide additional traction for vehicles breaking late at speed upon crossing activation.
As per optioneering panes comments l on 11.02.22 –
Consider - liaise with HA and if no buy in then consider NWR standalone proposal

9-day traffic survey
Current traffic survey conducted on 27-05-2015, a new traffic survey would offer up to date usage figures.
Option accepted by optioneering panel on 11.02.22

ANNEX B – HAZARD IDENTIFICATION AND RISK CONTROLS

The table below is intended for use by risk assessors when identifying hazards and risk control solutions. It is not an exhaustive list or presented in a hierarchical order.

	Hazard	Control
Road vehicle and train collision risk	Examples at the crossing include: • insufficient sighting and / or train warning for all vehicle types; known to be exacerbated by the driving position, e.g. tractor • level crossing equipment and signage is not conspicuous or optimally positioned • instructions for safe use might be misunderstood e.g. signage clutter detracts from key messages, conflicting information given • high volume of unfamiliar users, e.g. irregular visitors, migrant workers • known user complacency leading to high levels of indiscipline, e.g. failure to use telephone, gates left open • type of vehicle unsuitable for crossing; - large, low, slow making access or egress difficult and / or vehicle is too heavy for crossing surface - risk of grounding and / or the severity of the gradient adversely affects ability to traverse • poor decking panel alignment / position on skewed crossing • where telephones are provided, users experience a long waiting time due to:	Controls can include: • optimising the position of equipment and / or signs • removing redundant and / conflicting signs • engaging with signalling engineers to optimise strike in times • upgrading of asset to a higher form of protection • downgrading of crossing by removing vehicle access rights • optimising sighting lines and / or providing enhanced user-based warning system, e.g. MSL • re-profiling of crossing surface • engaging with stakeholders / authorised users to reinforce safe crossing protocol, legal responsibilities and promote collaborative working • widening access gates and / or improving the crossing surface construction material • realigning or installing additional decking panels to accommodate all vehicle types • implementing train speed restriction or providing crossing attendant

	Hazard	Control
	- long signal section (Signaller unaware of exact train location) - high train frequency • insufficient or excessive strike in times at MSL crossings • high chance of a second train coming • high line speed and / or high frequency of trains • unsuitable crossing type for location, train service, line speed and vehicle types	
Pedestrian and train collision risk	Examples include: • insufficient sighting and / or train warning • ineffective whistle boards; warning inaudible, insufficient warning time provided, known high usage between 23:00 and 07:00 • high chance of a second train coming • high line speed and / or high frequency of trains • level crossing equipment and signage is not conspicuous or optimally positioned • location and position of level crossing gates mean that users have their backs to approaching trains when they access the level crossing, i.e. users are initially unsighted to trains approaching from their side of the crossing • instructions for safe use might be misunderstood e.g. signage clutter detracts from key messages, conflicting information given • surface condition or lack of decking contribute to slip trip risk	Controls can include: • optimising the position of equipment and / or signs • removing redundant and / conflicting signs • upgrading of asset to a higher form of protection • optimising sighting lines, e.g. de-vegetation programme, repositioning of equipment or removal of redundant railway assets • implementing train speed restriction or providing crossing attendant • providing enhanced user-based warning system, e.g. MSL • engaging with stakeholders / authorised users to reinforce safe crossing protocol, legal responsibilities and promote collaborative working • installing guide fencing and / or handrails to encourage users to look for approaching trains, read signage or cross at the designed decision point

	Hazard	Control
	• known high level of use during darkness • increased likelihood of misuse, e.g. crossing is at station • free wicket gates might result in user error • high volume of unfamiliar users, e.g. irregular visitors / ramblers, equestrians • complacency leading to high levels of indiscipline, e.g. users are known to rely on knowledge of timetable • high level of use by vulnerable people • where telephones are provided i.e. bridleways, users experience a long waiting time due to: - long signal section (Signaller unaware of exact train location) - high train frequency • insufficient or excessive strike in times at MSL crossings • unsuitable crossing type for location, train service, line speed and user groups • high usage by cyclists • degree of skew over crossing increases traverse time and users' exposure to trains • crossing layout encourages users not to cross at the designed decision point; egress route unclear especially during darkness schools, local amenities, or other attractions are known to contribute towards user error	• re-design of crossing approach so that users arrive at the crossing as close to a 90° angle as possible • installing lighting sources • engaging with signalling engineers to optimise strike in times • providing decking or improving crossing surface, e.g. holdfast, strail, non-slip surface • providing cyclist dismount signs and / or chicanes • straightening of crossing deck

	Hazard	Control
Pedestrian and road vehicle collision risk	Examples include: • a single gate is provided for pedestrian and vehicle users where there is a high likelihood that both user groups will traverse at the same time • the position of pedestrian gate forces / encourages pedestrian users to traverse diagonally across the roadway • road / footpath inadequately separated; footpath not clearly defined • condition of footpath surface increases the likelihood of users slipping / tripping into the path of vehicles	Controls can include: • providing separate pedestrian gates • clearly defining the footpath; renew markings • positioning pedestrian gates on the same side of the crossing • improving footpath crossing surface so it is devoid of potholes, excessive flangeway gaps and is evenly laid • improving crossing surface, e.g. holdfast, strail, non-slip surface
Personal injury	Examples include: • skewed crossing with large flangeway gaps results in cyclist, mobility scooter, pushchair or wheelchair user being unseated • condition of footpath surface increases the likelihood of users slipping / tripping • degraded gate mechanism or level crossing equipment • barrier mechanism unguarded / inadequately protected	Controls can include: • improving fence lines • reducing flangeway gaps and straightening where possible • providing decking or improving crossing surface, e.g. holdfast, strail, non-slip surface • straighten / realign gate posts • fully guarding barrier mechanisms

ANNEX C – ALCRM RISK SCORE EXPLANATION

ALCRM calculates the level of risk to individual users (per traverse) and the combined risks for all users, train staff and passengers at level crossings. It provides a consistent and robust quantitative methodology that is supplemented by the local knowledge and professional judgement of risk assessors.

Risk is expressed in fatalities and weighted injuries (FWI). The following values help to explain what this means:

- 1 = 1 fatality per year or 10 major injuries or 200 minor RIDDOR events or 1000 minor non-RIDDOR events
- 0.1 = 20 minor RIDDOR events or 100 minor non-RIDDOR events
- 0.005 = 5 minor non-RIDDOR events

RISK PER TRAVERSE

This is the level of calculated risk to an individual crossing user. It applies to a single traverse of the level crossing or each time the crossing is used by an individual.

Risk per traverse:

- Can be calculated for crossing users, train staff and passengers. Ranking is based on the risk to users only.
- Does not increase with the number of users.
- Is presented as a simplified ranking A to M. A is highest, L is lowest, and M is 'zero risk' e.g. temporary closed, dormant or crossings on mothballed lines.
- Allows risks to individuals on a per traverse basis to be assessed even if usage and Collective Risk is low.
- Can help in the prioritisation of risk mitigation and investment in safety.

Risk Per Traverse Ranking	Probability		FWI/traverse	
	Upper	Lower	Upper	Lower
A	1 in 1	1 in 500000	1	0.000002
B	1 in 500000	1 in 2500000	0.000002	0.0000004
C	1 in 2500000	1 in 12500000	0.0000004	0.00000008
D	1 in 12500000	1 in 62500000	0.00000008	0.000000016
E	1 in 62500000	1 in 125000000	0.000000016	0.000000008
F	1 in 125000000	1 in 250000000	0.000000008	0.000000004
G	1 in 250000000	1 in 500000000	0.000000004	0.000000002
H	1 in 500000000	1 in 1000000000	0.000000002	0.000000001
I	1 in 1000000000	1 in 2000000000	0.000000001	0.0000000005
J	1 in 2000000000	1 in 5000000000	0.0000000005	0.0000000002
K	1 in 5000000000	1 in 10000000000	0.0000000002	0.0000000001
L	1 in 10000000000	Greater than 0	0.0000000001	Greater than 0
M	0	0	0	0

COLLECTIVE RISK

This is the total calculated risk for the crossing and includes the risk to users (pedestrian and vehicle), train staff and passengers.

Collective risk:

- Is presented as a simplified ranking 1 to 13. 1 is highest, 12 is lowest, and 13 is 'zero risk' e.g. temporary closed, dormant or crossings on mothballed lines.
- Can help in the prioritisation of risk mitigation and investment in safety.

Collective Risk Ranking	Upper Value (FWI)	Lower Value (FW)
1	Theoretically infinite	Greater than 5.00E-02
2	0.050000000	0.010000000
3	0.010000000	0.005000000
4	0.005000000	0.001000000
5	0.001000000	0.000500000
6	0.000500000	0.000100000
7	0.000100000	0.000050000
8	0.000050000	0.000010000
9	0.000010000	0.000005000
10	0.000005000	0.000001000
11	0.000001000	0.000000500
12	0.0000005	0
13	0.00E+00	0.00E+00