Responses to consultation on new ORR guidance on Principles of Level Crossing Safety – Published June 2021

Aberdeen City Council

Amey Rail Ltd

ASLEF

Association of Directors of Environment, Economy, Planning and Transport (ADEPT)

Atkins

British Horse Society (The)

Central Bedfordshire Council

Costain

Dartford Borough Council

Denbighshire County Council

Dumfries and Galloway Council

Ed Rollings Associates Ltd

Essex County Council

Friends of the Far North Line

Furrer+Frey Overhead Contact Lines

Gloucestershire County Council

Individual number 1

Individual number 2

Individual number 3

Individual number 4

Individual number 5

Individual number 6

Individual number 7

Individual number 8

IOHS

Kilnside Farm

Network Rail

North Yorkshire Moors Railway

Parliamentary Advisory Council for Transport Safety (PACTS)

Peak and Northern Footpaths Society

Rail Crossing Safety Consultants Limited

Rail Delivery Group

Ricardo Rail Limited

RSSB

Shropshire County Council

Sotera Risk Solutions

South Lanarkshire Council

Suffolk County Council

Surrey County Council

Systra

The Ramblers

The Ramblers – Dorset Area

The Ramblers – Swindon and North East Wiltshire Group

Transport for London (TfL)

UKTram

Victa Railfreight

Warwickshire County Council

West Somerset Railway PLC

From: Graeme McKenzie (Aberdeen City Council)
Sent: 26 February 2021 18:15
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: ORR Consultation - "Principles for managing level crossing safety"

Please find a response on behalf of Aberdeen City Council with respect to the ORR consultation on the proposed guidance "PRINCIPLES FOR MANAGING LEVEL CROSSING SAFETY".

1. Who are you responding as (an individual/for an organisation) and what is your role?

Operations and Protective Services, Aberdeen City Council – Technical Officer, Traffic Management and Road Safety

2. Who would use this guidance in your organisation? When and how would it be used?

This guidance would have potential to be used by a multitude of teams in terms of the Local Roads Authority function; Traffic Management & Road Safety, Roads Design, Roads Construction Consent, Roads Development, Structures, Roadworks Coordination and Roads Services (maintenance). It would also be of possible interest to environmental planning colleagues when considering core paths, rights of way etc.

The document would be a valuable point of initial reference when considering the possibility of any new level crossing, while it would be equally applicable in terms of monitoring existing crossings, or where circumstances could warrant a review of a crossing so that it continues to operate safely and efficiently in terms of the surrounding road network.

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

As a document that acts as a base reference it does appear to provide very good coverage of the potential risks and identify the multitude of user types. In terms of the Local Roads Authority function, it is specifying the many factors that have to be taken into account, thus road layout, surface, visibility, the use of signs, traffic movement in the vicinity, environmental factors etc.

I do not consider there to be any gaps from a roads perspective, as it is a prompt to ensure design guidance / regulations from other documents, legislation, Statutory Instruments etc. is used appropriately to deal with the risk factors highlighted. Albeit, while I note the guidance states, *“You will also need to take account of other health and safety guidance and legislation relevant to the railways and public highways. Equally, you will need to comply with relevant equality legislation and consider other relevant standards and guidance. Further information is available on our website.”*, I did ponder whether it would be worthwhile including specific references to relevant information such as DfT Traffic Signs Manuals, legislation etc. At the same time I

appreciate those reading this document should be practitioners that are alert to the relevant guidance and there is also the issue of specific references being superseded over time.

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

Within the Aberdeen City Council area, I believe the last level crossing was removed circa 2018/19. Nonetheless, this guidance would be of help should any new level crossing be established in the future.

5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

N/A

6. What other information from ORR on level crossings would you find helpful?

As indicated in the text accompanying the draft document, the possible website publication of case studies could be of value.

7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?

N/A

Thanks for providing us with the opportunity to review the proposed guidance, and should you have any questions over our responses, please do not hesitate to get in touch.

Kind regards

Graeme McKenzie | Technical Officer
Aberdeen City Council | Traffic Management and Road Safety | Operations and Protective Services | Operations
Marischal College | 2nd Floor West | Broad Street | Aberdeen | AB10 1AB

www.aberdeencity.gov.uk | Twitter: @AberdeenCC | Facebook.com/AberdeenCC

From: Bolt, Ben (Amey Rail Ltd)
Sent: 24 February 2021 12:58
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Consultation on ‘Principles for managing level crossing safety’ guidance

Hello,

Thank you for the opportunity to respond to the ORR’s consultation on ‘Principles for managing level crossing safety’ guidance.

Please see input below, on behalf of Amey Rail Ltd.

If you have any queries on the content of this email, please get back to me.

Kind regards,

Ben

Ben Bolt
Deputy Professional Head of Design Management | Rail | Transport Infrastructure

From: Una Byrne (ASLEF)
Sent: 26 February 2021 11:54
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: ORR Level Crossings Principles consultation

I am emailing on behalf of ASLEF in relation to the Consultation on the draft 'Principles for managing level crossing safety' guidance.

ASLEFs submission to the consultation is: ASLEF reserve comment until final draft is available.

Please note this submission has been sent by email only.
Kind regards,
Una Byrne

Una Byrne
Health and Safety Advisor
ASLEF

ADEPT
Association of Directors of
Environment, Economy, Planning & Transport

Formal response to the Office of Road and Rail consultation on 'Principles for managing level crossing safety' guidance

PART A: RESPONSES TO QUESTIONS RAISED

1. Who are you responding as (an individual/for an organisation) and what is your role?

The Association of Directors of Environment, Economy, Planning and Transport (ADEPT) is responsible for providing day-to-day services including local highways, recycling, waste and planning. ADEPT members are at the very heart of delivering clean sustainable growth, tackling climate change at a local level. We manage the projects that are fundamental to creating more resilient, inclusive and safe communities, economies and infrastructure.

ADEPT represents place directors from county, unitary and combined authorities, along with Local Enterprise Partnerships (LEPs), sub-national transport boards and corporate partners drawn from key service sectors throughout England.

ADEPT is a membership based, voluntary organisation with:

- 85+ county, unitary and combined authority members,
- 3 sub-national transport bodies,
- 12 local enterprise partnerships (LEPs) and
- 20 Corporate Partner members across England.

This response to the consultation draws together the views of ADEPT members on its Engineering Board and its Transport and Connectivity Board, including the Rights of Way Managers Group. For clarity on any issues, please contact Mark Stevens, Chair of the ADEPT Engineering Board, at mark.stevens@haringey.gov.uk or call 07971 837620.

2. Who would use this guidance in your organisation? When and how would it be used?

Not all ADEPT members have level crossings within their administrative areas but, for those that do, it would be an important reference document. The guidance document would be used in the day-to-day management of the local highway network (for road level crossings) and the local public rights of way network (especially where there is engagement over restrictive structures and barriers that need improving). This would be in respect of both maintenance and in consideration of any planned improvements to either the highway or rights of way network for which there is a level crossing interface.

Consideration by ADEPT members with level crossings in their administrative areas would be given to including the guidance and the expectation that its principles are followed in any contract documents that it issues for the maintenance and improvement of highway or rights of way assets.

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

The Equality Act 2010 is mentioned in User Principles no1. BS5709 could also be mentioned in that paragraph as an example of increasing equality and a least restrictive option. However, there is also the dilemma of how to address when a Network Rail risk assessment differs from the local highway authority risk assessment. The Memorandum of Understanding referenced in Part B provides a communications example that should be referred to and refreshed to all parties.

Other comments on the contents of the guidance that potentially relate to this question have been drawn together from the two Boards and Group referenced in response to question 1 above. Those comments are summarised in Part B of this formal response.

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

For public rights of way level crossings, the guidance will be invaluable and will be used in liaison on individual cases and issues.

Other comments on the contents of the guidance that potentially relate to this question have been drawn together from the two Boards and Group referenced in response to question 1 above. Those comments are summarised in Part B of this formal response.

5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

Comments on the contents of the guidance that potentially relate to this question have been drawn together from the two Boards and Group referenced in response to question 1 above. Those comments are summarised in Part B of this formal response.

6. What other information from ORR on level crossings would you find helpful?

The proposed supplementary documents, guidance, case studies and specifications will be welcomed, along with information on road/rail partnerships, for continued good communication between organisations.

Comments on the contents of the guidance that potentially relate to this question have been drawn together from the two Boards and Group referenced in response to question 1 above. Those comments are summarised in Part B of this formal response.

PART B: DETAILED COMMENTS ON THE CONTENT OF THE GUIDANCE DOCUMENT

Generally, those expressing comments on the contents of the guidance are very supportive of the principle-based approach and are pleased to see reference to non-vehicular highways and users of level crossings. They are in full agreement that further and greater levels of collaboration between the two disciplines will help in embedding these principles when in discussion about individual level crossing risks and designs across the country's railway network – a better approach than a prescriptive 'one size fits all'. The fact that the guidance relates to all types of level crossings – including those for public rights of way – is welcomed.

The guidance could, however, be extended to applicability to local planning authorities where decisions to allow the construction of dwellings or amenities near to a level crossing may see a marked increase in potential usage. Embedding principles for planners to engage with those managing level crossings will ensure that there is adequate consideration of the impacts of development on level crossings. This is relevant whilst two-tier administrative arrangement for local government persist, with differing opinions existing between local highway authorities and local planning authorities.

In the comments that follow, the identity of individual local authorities is anonymised to more generally illustrate examples of where issues exist or particular views are held.

<u>Comments On Principles For Managing Level Crossing Safety</u>

Page 4. The Foreword states the document will be supplemented with case studies but doesn't ask for examples. The ORR should seek case studies from highway authorities where level crossings have not met the needs of users, including on public rights of way (PROW), or clash with the policies of the authority. One ADEPT member reports a particular situation with Network Rail unlawfully closing a PROW across a railway line without notice under a Transport and Works Act. Although Network Rail accepts that it was unlawful, it still refuses to open it and are compelling the local highway authority to move to an injunction. This has forced all pedestrians to use an inadequate and unsafe alternative route. Sometimes, more can be learnt from a case study showcasing a real example of poor practice.

Page 5 Para 1.1: The reference to following a user-centred approach is encouraging.

Para 1.2. The introduction states the document does not place additional burdens on duty holders or prescribe how a level crossing should be designed, operated or maintained. It is considered reasonable to introduce new responsibilities on designers, planners and engineers where improvements can be designed into level crossings.

Page 7 Paras 13 to 16 and elsewhere. The acknowledgement of the importance of parties working together in the process of level crossing risk assessment is

welcomed. This is consistent with the **Memorandum of Understanding between Network Rail, ADEPT, LGA & IPROW** published in 2019. PROW crossings that could pose particular risk are those that are affected by new development in a rural setting, where the crossing was once upon an infrequently used rural route with limited foot traffic but may now be in the proximity of a new estate receiving daily and significantly increased usage. This emphasises the importance of the involvement of both local planning authorities and local highway authorities.

Page 9 Para 22. It is agreed that it is essential that decisions and options for level crossing control measures are informed by a suitable and sufficient risk assessment. This should include where level crossing entry and exit points are being installed or renewed. In the case of stiles on a PROW, it is contended that these are no longer suitable for inclusion as furniture and only gates should be provided. One county council reports that it has had defect reports about the design of stiles and dog flaps being installed by Network Rail, including an injury resulting from poor design. Under 'Record your findings', these findings should always be shared with eth local highway authority to ensure that there is a collaborative understanding of the various risks, be it from a highway or rail perspective

Pg10-11 Principles of Prevention: There is agreement that the application of a prevention hierarchy of elimination (by whatever appropriate and available means should apply), engineering control and then administrative control is the best methodology for the management of risk at level crossings.

Page 10 Para 25. If an existing PROW crossing is upon a route that currently keeps users away from roads, then safety improvements to that existing route should first be evaluated, e.g. by offering access via bridge or underpass in line with the Equality Act 2010, before considering an alternative along a highway. If the diversion of a route is necessary, maintaining the most direct line where possible should be considered to avoid inconvenience to users. Highway safety and least restrictive access options regarding stiles and gates should also be considered. Consideration should be given to balancing the risk on both networks and the difficulty of assessing risks when they are measured in different ways on the different networks.

Para 27. Can it be reiterated that this consideration needs to be carried out in collaboration with the local highway authority and not in isolation?

Para 28. Risk might be transferred to another level crossing and/or the adjacent highway network, not solely to just another level crossing. The same observation applies to paras 31 to 35.

Page 11 Para 29. The use of new technology on level crossings is fully supported, but one county council has come up against resistance to warning lights, for example, on the grounds of cost and/or technical reasons.

Page 12 Paras 33 and 34. Details would be welcomed on how cost-benefit analysis is used to assess the benefits of using PROW crossing level crossings, where the reason for a journey may be recreational as well as to access services.

Page 13 User Principle 1. There is agreement on the importance of understanding who uses level crossings and an emphasis on the importance of (f) assessing users with protected characteristics under the Equality Act 2010, e.g. age, disability, pregnancy, maternity, and race. The guidance should acknowledge that a disability can be hidden, and that a person who can navigate most terrains might still struggle to negotiate a stile. User Principle 1(f) could be strengthened by an endeavour to seek the removal of unacceptable encumbrances on the PROW network and specifically the use of stiles to control access at the line side.

There is the potential for a further factor - User Principle 1(h) - to include the possibility of unexpected use such as cyclist or equestrians on public footpaths and also the potential for the under-recording of legal rights on the Definitive Map and Statement (e.g. showing a footpath when evidence is available but remaining un-assessed that the route is actually a bridleway).

Page 15 User Principle 4(c). Any fencing, structures etc must not have a negative impact on the accessibility of a route for users. For example, a bridleway will generally require wider access than a footpath. Consideration should be given 'how' users will be waiting to cross - whether a horse rider is either mounted or leading their horse or whether a cyclist is upon or pushing their bike.

User Principle 5. Consideration should be given to standard signage such as minimum letter heights. This is unregulated.

Page 16 User Principle 6 (a). The use of active warning systems in preference to relying on the user to determine whether or not a train is approaching the level crossing is supported, and this principle should be applied at PROW level crossings.

User Principle 7 could include a further consideration of line-side access controls to ensure they are of the least restrictive form

Page 17 User Principle 7 (e). Hazards created by the level crossing surface should be extended to include the crossing in entry and exit points. Whilst these points do not directly impact on crossing the railway line themselves, any impediment of the user (e.g. the need to negotiate stiles) will slow the overall crossing time.

Page 18 Railway Principle 1. The heading of this principle is **Ensure the entry and exit to a level crossing and any closure sequence does not create a risk of injury to users.** As noted above, stiles being maintained and replaced by Network Rail do create a risk to users, and ADEPT members have received defect reports to this effect. The policy of most highway authorities in the country will be to remove barriers to access, including always seeking or requiring the replacement of stiles with a gap or gate. Whilst it is accepted that gaps at level crossings are not appropriate, there is no reason the principle cannot be extended to this guidance. In respect of (a), stiles should not be considered an acceptable barrier to prevent access to the railway ("by provision of barriers or gates activated or locked by the approach of a train").

Page 19 Railway Principle 3(b) could also include issues concerning PROW crossings over sidings or "holding" lines of long-term stationery rolling stock meaning users have further hazards to navigate or are obstructed - meaning a need to trespass away from the legal line of the PROW

Page 23 Safe highway principles. It is disappointing that the draft for consultation does not include entry and exit furniture for PROW. For example, Highway Principle 2 (Ensure that highway approach surfaces enable users to cross the level crossing safely) should be extended to include approaches and entry and exit points.

Page 24 Highway Principle 5 should also make reference to ensuring the adequacy of the area for those waiting to cross a level crossing, be this kerb protection or effective drainage.

<u>Further generic observations:</u>

- Reference to liaison with stakeholders being "vital" should be amended to "must" and include local representatives and elective bodies, such as district and parish councils.
- Infrastructure installed on land not owned by Network Rail results in future responsibilities for maintenance not being addressed.
- Consideration needs to be given to the Impact of adjacent infrastructure that is provided for and maintained by the local highway authority. If changes are required in respect of materials/alignment/road markings/linking with traffic signals, immediate and future costs need to be accounted for and responsibility fully assigned for their condition/operation
- There appears to be no detail on how local highway activities will be managed in the proximity of railway crossings. Network Rail require BAPA agreements and site visits to observe works but, in all but a handful of cases, the road was there before the railway, so the financial burden is inappropriately distorted for routine and reactive maintenance for which separate statutory requirements exist.

From: Askey, Phil (Atkins)
Sent: 26 February 2021 19:50
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Consultation on new ORR guidance on Principles of Level Crossing Safety

1. Who are you responding as (an individual/for an organisation) and what is your role?

This document is a response to the consultation on new Office of Road and Rail (ORR) guidance on Principles of Level Crossing Safety from Atkins. Comments have been collated from the organisation's engineers responsible for design, installation, and commissioning of level crossings. The author is a Principal Civil Engineer and the Atkins Technical Authority for Railway Level Crossings Ground Plan design with over 20 years' experience in management, multi-disciplinary design and installation in the rail industry.

2. Who would use this guidance in your organisation? When and how would it be used?

The current guidance is used by Atkins engineers responsible for design (risk assessment through to detailed Ground Plan design and drafting of the Level Crossing Order), installation, testing and commissioning of level crossings. The current guidance is highly regarded in the industry as providing best practice direction across the multi-discipline standards.

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

The current Rail Safety Publication 7 (RSP7) is chiefly focused on public highways which provided both risk identification and effective detail for the application of mitigations based on extensive experience. The new guidance gives sound focus to identifying the risks however fails to provide guidance on the application of suitable mitigation.

We would like to see the current approach retained to avoid the loss of knowledge, best practise, and know-how. We also would like to see a similar methodology produced for other crossing types (private, bridleway, footpath etc).

We note that level crossing order process will be part of new guidance, we assume that the new guidance will be published in a timely manner to avoid a period of time with no suitable guidance.

We would like to know if a gap analysis has been undertaken to identify requirements in the current guidance that is not captured elsewhere e.g. in Railway Standards or Highway Standards.

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

The new guidance gives sound focus to identifying the risks to be considered and in particular the Human Factors to be evaluated. There are other tools available such as Level Crossing Risk Management Toolkit (LXRMTK) which drills down into greater detail and so may be regarded as more helpful.

5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

The new principles-based guidance do define what is important, which may permit new ideas to be used to satisfy them but there is a risk that this will also lose good practice in the process. With less prescriptive guidance, risks at similar level crossings may be mitigated in different ways (on public and heritage railways for example), leading to less consistency and increased user confusion. Additionally, current guidance provides clear responsibilities to the highways and rail authorities, the new principles-based guidance may lead to authorities hiding behind risk assessments to avoid contributing to safety improvements.

6. What other information from ORR on level crossings would you find helpful?

Please refer to answer 3 above.

7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?

The removal of prescriptive guidance places more reliance on Railway Standards, Highway Standards and Local Authorities to define or at least agree the safety requirements. Currently where there is ambiguity between stakeholder requirements, the current guidance provides crucial direction. The vacuum left by the change to principles-based guidance will need to be filled, we would look to the Rail Safety and Standards Board or Network Rail in collaboration with highway authorities to lead adoption and publication of level crossing good practice, this carries the risk the highways authorities will not recognise railway guidance by other bodies than the ORR.

Less prescriptive guidance may drive a requirement to justify and evidence all risk-based decisions made, particularly given Railway Authorities current reluctance, especially at project level, to accept any risk or perceived deviation from the “normal” way of doing things. This may unintentionally lead to increased costs and longer timescales to deliver individual crossing upgrades.

The section on Cost Benefit Analysis implies if a statistical fatality can be prevented for less than £20m then the “Disproportionate Cost” argument does not apply, and so level crossings will be difficult to justify where there is suitable space to provide a bridge. Further clarification will be required.

Railway Principle 2

- This strongly implies that Obstacle Detection is the preferred method of crossing protection.

- An overlap of greater than emergency braking distance, enforced by Train Protection & Warning System (TPWS) should be provided. Network Rail standard require min 50m unless, may be reduced to 25m with mitigation- this would force signals to be potentially hundreds of meters from the crossing and / or a reduction to permissible line speed. If the signal is less than TPWS emergency braking distance from the level crossing this would require Stowmarket or SPAD Prediction controls by default or longer barrier down time.

- Implication that the provision of non-Obstacle Detection type crossings (UWC / MSL / AHB / ABCL and even MCB CCTV) will need robust justification.

The current guidance is used by Atkins engineers responsible for design (risk assessment through to detailed Ground Plan design and drafting of the Level Crossing Order), installation, testing and commissioning of level crossings. We envisage that there may be a range of impacts on the business which will be dependent upon if and by whom prescriptive guidance is published.

Section 11. ….We are also considering producing some case studies, to be made available via our website, that illustrate how the principles could be applied in a practical situation for different types of level crossings. We would like to know if this information would be useful for you.

Publishing case studies would be welcome, as well as different types of crossings, there would be benefit on presenting low, medium and high-risk locations to demonstrate how further mitigation can be applied at sites with complex issues. Care

is required when presenting the case studies as these are likely to become the de-facto ‘standard’ crossing designs.

Kind Regards

Phil Askey *Technical Authority, Railway Level Crossings*
Principal Civil Engineer, Transportation
UK & Europe
Engineering, Design and Project Management

Consultation on new draft guidance 'Principles for managing level crossing safety'.

Response of the British Horse Society

The British Horse Society represents the interests of 117,000 equestrian members, and the 3 million people in the UK who ride, or who drive horse-drawn vehicles.

The British Horse Society does not consider that closing level crossings should be a substitute for providing safe crossings for equestrians. The Society considers that certain minor works can be carried out that would significantly enhance the safety of equestrians at level crossings and consequentially the safety of people using the railways and those working on the lines. Such improvements would be the provision of mounting blocks, bridleway gates that comply with BS 5709, extended handles on such gates, high telephones, non slip surfaces on the crossings and their approaches and ramped equestrian combined footbridges.

The guidance makes very little reference to equestrians therefore specific supplementary guidance in respect of assessing risks to equestrians at level crossings should be produced and the British Horse Society would be happy to work with Network Rail and ORR to produce this.

The following more detailed comments demonstrate the need for this:-

The land on either side of a crossing needs to be carefully considered to see if it is equestrian access land that horse riders are legally entitled to access pursuant to section 193 Law of Property Act 1925, so that the appropriate assessment can be made. An example where this did not happen is the recent Staines Moor footpath closure.

P9, point 22 – "Identify the hazards – an essential part of this will be to understand how the level crossing is used, both in normal and abnormal operating conditions and who the users are" It is therefore important that all relevant user groups are consulted for the status of the crossing including equestrians, and that consideration be given to equestrian use which is suppressed because of difficulties at the crossing such as awkward gates, phone too low, requirement to dismount but not provision for doing so.

P10, point 26 – diversions must be at the same status and equally convenient for ALL user groups, including equestrians. Closure may just divert the danger away from the crossing and onto local roads where vulnerable road users are forced to

use alternative options if a level crossing is closed to them. A diversion should not be so long that it in effect causes segregation of communities on both sides

P11, point 29 – engineering controls need to be usable and suitable for vulnerable road user traffic. Ideally a “clear to go” green light system would be ideal.

P13, User Principle 1: “Understand all foreseeable crossing users”, (a) “quantitative and qualitative methods” of data collection rarely give a realistic view of equestrian traffic which is why consultation with equestrians is so important. This can be equally important where there is NO evidence of equestrian use, as there may well be factors – both at the crossing and within the nearby local equestrian network – that are currently discouraging use. Evidence of use should always be by continuous electronic counter over no less than a week, not brief surveys which commonly fail to cover times of use by equestrians.

P13, User Principle 1: “Understand all foreseeable crossing users”, (b) “nearby local facilities and their foreseeable user groups” – it needs to be understood that not all equestrians are in riding schools or livery yards, but keep their horses in private fields, and many will have travelled a considerable distance. A typical ride would cover 5 -10 miles.

P13, User Principle 1: “Understand all foreseeable crossing users”, (f) “users with protected characteristics under the Equality Act 2010” many equestrians fall into this category with non-visible impaired mobility

P13/14, User Principle 2: “Identify foreseeable user behaviours or actions at, or near, a level crossing” It is important that equestrian user behaviours are identified.

P14, User Principle 4: “Provide a safe and convenient waiting place for users on level crossing approaches” Along with driving livestock, also need to consider expecting a horse to wait alongside a crossing.

P15, User Principle 5: “Identify the information users require to safely use a level crossing” Need to ensure information and buttons, etc are visible and accessible from horseback. Where phones, etc are needed these must be capable of being operated with one hand (ideally a call button on a box with a loud speaker rather than phone handset),and at a height and location which an equestrian can reach at the same time as maintaining control of a horse.

P21, Railway Principle 7: “Prevent livestock and other large animals, such as horses, straying onto the railway, point b – cattle grids must not be used as a means of preventing access onto the railway anywhere near crossings used by equestrians.

P23 “5. Safe highway”

“Highway Principle 2: Ensure that highway approach surfaces enable users to cross the level crossing safely” For equestrians the approach and crossing must be non slip.

In the Principles For Level Crossing Safety document:

Section 6 – Known Inequalities (page 11)

Reference made to ‘poorly maintained rural footpaths’ – this should refer to ‘public rights of way’ so that bridleways, restricted byways and byways open to all traffic are encompassed, and all are equally likely to be poorly maintained.

In the Principles for managing level crossing safety document:

Collaboration – page 7

Para 13 refers to increased use of footpath crossings due to development…’which may provide an opportunity to replace the level crossing with a bridge as part of the development scheme’ - where appropriate, that provision should include equestrian use.

Level crossing risk assessment – page 8

Section takes in to account ‘human tendencies’ in overall considerations – need to include equestrian behaviour in design principles – e.g. may need to provide safe refuges for horses at level crossings. (as laid out in User Principle 4, Page 15). The Society could give appropriate sector specific advice for risk assessments.

Dated 26/2/21

Mark Weston

Director of Access

ORR Consultation on: *'Principles for Managing Level Crossing Safety'*

Response by Central Bedfordshire Council (Public Rights of Way)

Adam Maciejewski - Senior Definitive Map Officer

5 February 2021

(closing date: **26 February 2021** - submit to: LevelCrossingPrinciples@orr.gov.uk)

Consultation Questions

Question	Response
1	*Who are you responding as (an individual/for an organisation) and what is your role?* This response is by Adam Maciejewski - Senior Definitive Map Officer for Central Bedfordshire Council's Highway Assets Team who is responding from the perspective of members of the public using the authority's public rights of way network, i.e. primarily walkers, cyclists and equestrians. My highways colleagues will respond on how level crossings impact on Central Bedfordshire's road network.
2	*Who would use this guidance in your organisation? When and how would it be used?* Network Rail has rarely asked the Council about how it manages its public rights of way level crossings and previously has carried out works without prior consultation with the Council, only to then be forced to correct obvious errors. Moving forwards, if Network Rail *does* want to discuss changes to any level crossing on the public rights of way network then this document would be used by myself and the Area Rights of Way Officer when discussing with Network Rail and its contractors the needs of the users and how this would impact on level crossing geometry and signage etc.
3	*Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?* The document outlines most risks associated with public rights of way level crossings. The comments below seek to clarify or supplement the document. The document is rather "woolly" in that there is little prescriptive description of what should be done but gives Network Rail a broad brush with which to evaluate level crossing risk and safety. Any such evaluation does need to be carried out in consultation with the Council. Your document states *"We intend to supplement this document with case studies to illustrate how the principles can be applied to different types of crossings"* These case studies need to carried out in liaison with highway and public rights of way authorities to ensure that the principles they enshrine are valid.
4	*If you carry out level crossing risk assessments, would you find this guidance helpful?* Central Bedfordshire Council does not currently risk-assess public rights of way level crossings - leaving this to Network Rail to do.
5	*ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?*

	n/a
6	*What other information from ORR on level crossings would you find helpful?* The ORR, or Network Rail, could make available ALCRM scores and data relating to level crossings including: decision point to exit distances, LC crossing times, times from whistle boards to LC, times from train visible to LC, and any installed mitigation systems.
7	n/a

Comments on consultation document

Paragraph	Issue within ORR document	Comment by CBC
9	*A highway is any road, footpath or bridleway to which the public have access.*	Restricted Byways, Byways Open to All Traffic ("BOATs") and Cycle Tracks are also classes of highway which may cross a railway line at the level and should be included in the ORR document.
12	*you will need to comply with relevant equality legislation and consider other relevant standards and guidance*	Where public rights of way utilise level crossings, access furniture in railway boundary fences should comply to the least restrictive access principle of gap→gate→kissing gate→stile and comply with BS5709 to prevent access furniture being a barrier or impediment to public use.
13	*a local housing development scheme which could increase use of a footpath crossing may provide an opportunity to replace the level crossing with a bridge as part of the development scheme.*	Bridges close to settlements should be ramped where possible to permit use by mobility-impaired users and those with pushchairs etc. In such circumstances a bridge or tunnel can be part-funded by developer as part of a S.106 Agreement contribution. In such cases Network Rail should not demand a percentage of the increase in land value from the developers.
14	*local traffic considerations can be fully considered and taken into account when designing level crossing controls*	Where roads at level crossings have footways, provision should be made to ensure that full-width footways are clearly delineated and segregated from the traffic lanes.
15-16	*There should be a joined up, collaborative approach to managing and improving level crossing safety*	Network Rail staffing structure is notoriously impregnable. We would welcome greater transparency on who is responsible for what and how they can be contacted. Working groups between Network Rail, BTP, the Council and possibly user groups (Ramblers and British Horse Society etc.) and local parish councils would be appreciated.
18	*Level crossing users are individuals and differ, for example, in their mode of transport,*	Consideration should also be given to the variable/unpredictable nature of horses on equestrian crossings.

19	*a level crossing design that minimises cognitive demands and places as little onus as possible on the user to take decisions about when it is safe to use the crossing is preferable.*	Any design needs to consider all classes of legitimate user and ensure that access furniture (e.g. self-closing gate) is of the correct design for the users involved.
20	*make sure that what the user is expected to do is clear, so that they know what needs to be done and how it should be done.*	Bridleway level crossings frequently require a rider to dismount. General comments from riders and the British Horse Society are that horses can be controlled better from the saddle. If this is not possible due to overhead line (OLE) height constraints this needs to be highlighted at the crossing.
21	*they are at the interface between the railway and the highway, so require a collaborative approach between those involved*	Some degree of liaison is required between Network Rail and the Council when deciding what measures need to be adopted at particular level crossings.
25	*The first consideration should always be whether there are reasonably practicable alternatives to a level crossing.*	Where a level crossing can be replaced by a bridge or a tunnel and this can be part-funded by developer as part of a S.106 Agreement, Network Rail should not demand a percentage of the increase in land value from the developers. Reasonably practicable also includes the distance from the current crossing to any alternative bridge or tunnel and the terrain that any diversion would cross.
27	*The cost of alternatives has to be taken into account but also the feasibility of alternatives*	The Council recognises that bridges cost more than level crossings and that bridges - especially ramped bridges, are large structures that need significant space and can overlook or blight adjoining properties. However, Network Rail also needs to recognise the need of the public to use the existing highway/public right of way network for a variety of purposes.
29	*The range of technologies available for level crossings has improved considerably over recent years*	According to local Network Rail Level Crossing managers, most of the level crossing technologies don't work on 4-track lines (COVTEC and Overlay MSL) and the one that does (FI-MSL) the ORR isn't permitting new installations of. New modular (and thus relatively cheap) audible and visual systems for level crossings would be welcomed.
30	*Administrative controls such as signage and instructions for level crossing users are the last to be considered*	Signage should be considered as part of the entire package - including risk assessment rather than as a "last item".
31 -33	*The Courts have decided that risk control measures should be deemed reasonable unless the cost of the measure is*	The "cost" should also include the cost/harm to the connectivity of the local highway network due to any closure or diversion of a highway and the cost to users

	grossly disproportionate when compared to the risk.	from any additional distance/inconvenience/loss of enjoyment caused by the closure of the crossing.
34	*Use of cost benefit analysis (CBA) and applying the gross disproportion test are useful ways of deciding whether you have reduced risk so far as is reasonably practicable, but they are only part of the overall decision making process.*	Any CBA needs to be treated to a Sensitivity Analysis which deals with the highway user impact aspects of any closure.
35	*The benefits to be included in the CBA are the benefits in terms of the reduction in risk to passengers, workers and members of the public.*	Benefits related to the use of the existing level crossing to access countryside, education, employment and amenities and mental and physical wellbeing also need to be factored into any CBA.
User Principle UP-1	*A level crossing should be safe for the user*	I would add that the physical boundaries and approaches to the level crossing (e.g. slopes, gates etc.) should also be safe and appropriate for the users - including those of a protected characteristic (e.g. elderly, mobility impaired or pregnant).
UP-2	*Identify foreseeable user behaviours*	Include how equestrians and their horses behave.
UP-4 (a)	*farmers with livestock or drivers of long, large or slow vehicles who will need to communicate with the crossing controller*	Include equestrians and consider the physical location of the contact telephone for somebody holding a horse and the ease of communication with signal box staff.
UP-4 (c)	*the use of physical controls, e.g. fencing, vegetation, structures and their positive (but also negative) impact on the effectiveness of the waiting place.*	This consideration needs to include one or more horses and any interaction of these with a person or dog coming over the level crossing.
UP-5	*information users require*	On 4-track lines include information that a second overtaking train may not be visible from the Decision Point.
UP-5 (d)	*how users are made aware of specific hazards, such as the height of overhead line equipment (OLE)*	The issue of OLE and equestrians wishing to cross whilst mounted for extra control needs to be addressed.
UP-7 (a)	*actual user routes and times taken to cross the railway*	On bridleway crossings factor in the time taken to get a horse from behind a gate onto the track, across and through the opposite gate.
UP-7 (d)	*segregating users at a level crossing*	This would be welcomed at road level crossings. Space constraints at bridleway level crossings means this is unlikely.

UP-8 (d)	*users who have crossed the railway should be able to continue their journey without blocking the exit for other users*	Consider equestrian separation distance from other users (e.g. dogs) and the position of any mounting block - this should be on the *left* side of track leading away from the level crossing.
Railway Principle 1 RP-1 (c)	*prevent users being injured as a result of being struck by descending barriers or moving gates;*	Self-closing gates should also comply to BS5709 and not close too quickly thus catching horses' flanks/rears
RP-4 (c)	*avoid trains waiting on a level crossing.*	This should apply to public rights of way level crossings where at all possible.
RP-7 (b)	*measures to prevent access to the level crossing, e.g. gates, cattle grids, holding pens and fencing*	Any access control furniture must meet BS5709. Stiles should **not** be used: gates or mobility-friendly kissing gates being used instead.
RP-8 (c)	*anti-trespass guards to deter access onto the railway*	Anti-trespass guards should be set further back from the edge of the walkway deck on bridleways to ensure that a startled horse does not injure itself and become incapacitated on the tracks, thus obstructing the line.
RP-9 (c)	*where necessary, ensure that a level crossing is sufficiently lit.*	The use of solar-powered studs along the edges of crossing walkways and illuminating exit gates at isolated unlit crossings is suggested.
Highway Principle 1 HP-1 (a)	*signage and other measures should be provided on the approaches to the crossing;*	"Riders dismount" signs at entrance to horse corrals on equestrian/bridleway crossings if appropriate.
HP-2 (a)	*approach surfaces and profiles should be consistent with those at the level crossing, to achieve an even passage of users over the level crossing;*	Approaches on public rights of way should minimise slopes, side falls and acute angles in paths and avoid obscuring vegetation to facilitate a smooth and safe transition from highway onto level crossing.

Adam Maciejewski mIPROW
Senior Definitive Map Officer

Highway Assets Team
Central Bedfordshire Council
Priory House, Monks Walk, Chicksands,
SHEFFORD, SG17 5TQ

Costain Response to ORR Consultation “Principles for managing level crossing safety”
26th February 2021

1. **Who are you responding as (an individual/for an organisation) and what is your role?**

As an organisation.

Costain is an infrastructure solutions provider. This consultation response has drawn on the knowledge from the development of an enhanced level crossing warning system called Meerkat, plus our domain knowledge in rail engineering and assurance in consultancy, design, and construction of schemes. Meerkat is a prime example of where we have taken a safety system “idea” from feasibility, concept, development, and implementation, taking account of key stakeholders who are using the guidance and risk assessing crossings.

For this reason, we have focussed our review particularly on the ‘Safe for the User’ section incorporating footpath and bridleway crossings.

2. **Who would use this guidance in your organisation? When and how would it be used?**

This guidance would be used within our various business functions undertaking our core activities; consulting and advisory including behavioural safety, preparation of feasibility studies and early contractor involvement, design of rail technology and the digital railway, construction and entry into service. We would use the guidance to re-enforce our industry standing of being a leader in innovation, assurance and collaborative working.

For a specific example, as part of the Meerkat project we are looking at how to digitally and remotely assess the suitability of level crossings. We would use this guidance to build rules into any future system to help quantify the suitability of the site. We are also exploring using virtual reality (VR) to better understand user behaviour around a crossing to help us improve future safety systems, this guidance would assist in a scenario design within the VR environment.

We have taken the Meerkat development through the full design for reliability, acceptance, validation and verification, including through the AsBo and safety case route to provide surety of the system and its safety integrity level. We see a future role for our organisation, leveraging on our experience, in supporting the rail industry for similar initiatives to include forming guidance and standards. This guidance will support any subsequent initiatives or adaptations to existing technology we provide.

3. **Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?**

In general yes, however we have three suggestions:

- We would like to see the inclusion of more Responsibility and Accountability guidance (RACI) to integrate with CDM regs and where applicable, CSM-RA shall be considered.
- Re-enforce electrical hazards as part of the risk assessment where level crossings are situated adjacent to electrified areas e.g., overhead line and 3rd rail traction, electricity company overheads (over sails) as part of a systems engineering approach.
- User Principle 5 a/b: Our findings from an ergonomics trial of Meerkat showed that the language on supplementary signage and the amount of signage is important. Suggestion to include ‘clarity’ and minimal wording and number of any supplementary signage. We are happy to provide more information of the outcome of these ergonomic trials.

4. **If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer**

We would find guidance extremely helpful to ensure where level crossings are an option or applicable that they are appropriately considered and importantly as part of our engineering assurance and governance approach.

We would also use this information to feed into system requirements for new products which will allow operators to decide which was the most appropriate warning system to deploy.

5. **ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?**

We see this as a positive addition to compliment other railway safety guidance to be utilised to provide surety through any study, design and construction phase and ultimately aid our compliance with ROGS.

6. **What other information from ORR on level crossings would you find helpful?**

- Which are the priority footpath and bridleway crossings requiring enhanced safety measures? A publicly available document would allow us and the industry, to be innovative in our solutions and allow us to look at individual cases to provide the best solution or adapt current solutions to suit and provide a quicker roll out.
- A categorisation of crossings in terms of high risk/high frequency. A better understanding of the risk profile of crossings would help to create warning systems that more closely matched the risk profile of the crossing. For example, a low speed/low foot fall crossing may not have a strong enough business case to support a high integrity, high-cost system, however, would still benefit from a safety system being deployed. This guidance would help us design cost effective systems allowing more crossings to be protected.
- What is the current status of any virtual/digital risk assessment platform and process to potentially facilitate desk top exercises for the initial evaluation of risk? e.g., user density and flow, road and pedestrian traffic type. Is there an appetite for using digital tools for risk assessment to feed into feasibility, design, and construction?

7. **(For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?**

We would accommodate changes through our “Standards Review” process whereby there would be a review undertaken by our in-house strategic Rail Engineering Services and Assurance (RESA) function that has a core team of subject matter expert discipline Professional Heads.

The review would consider business sector and project by project impact and who should be briefed, the level of the briefing, how these briefings are recorded and would include guidance on what actions we would need to take to ensure we manage compliance.

Where necessary we would also undertake a Safety Validation of Organisational Change assessment to underpin how we mitigate risk, manage compliance and road map the risk mitigation steps and identify those responsible and accountable.

From: Lukman Agboola (Dartford Borough Council)
Sent: 23 February 2021 17:04
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: FW: Consultation on new draft guidance "PRINCIPLES FOR MANAGING LEVEL CROSSING SAFETY"

Good afternoon,

Please find below responses to your consultation on new draft guidance “Principles for managing level crossing safety” on behalf of Dartford Borough Council. Responses are in red and are as per your consultation questions below.

1. Who are you responding as (an individual/for an organisation) and what is your role? – **Organisation, Dartford Borough Council.**

2. Who would use this guidance in your organisation? When and how would it be used? – **Transport Planner / Engineer / Planners. For review and assessment of highway, transport and development infrastructure projects.**

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed? **Yes but in terms of Principles 9 - Would be useful to provide additional information for users in order to ensure that resource is readily accessible for users when they need to use the Guidance as they may not be as familiar with the process compared to practitioners in the railway industries and local highway / planning authorities.**

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer – **Yes as there is information provided on approach and collaborative working between railway operations and others with a connection to level crossing safety.**

5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use? **Provides a wide coverage of all aspects of risk assessment.**

6. What other information from ORR on level crossings would you find helpful? **See comments under 3 above.**

7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes? **N/A**

Regards,

Lukman Agboola
Principal Transport Planner
MSc MCIHT MTPS

From: Adrian Walls (Denbighshire County Council)
Sent: 29 January 2021 16:10
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Response to consultation from Denbighshire CC Rights of Way team

Thank you for taking the opportunity to respond to this consultation on principles of safely managing rail crossings.

Having read Consultation on 'Principles for managing level crossing safety' guidance and these are our comments on 'Principles for managing level crossing safety'

Denbighshire has two railtracks one being the main North Wales line and the other being the heritage Llangollen Railway. Whilst most rail crossings are facilitated by road or footbridges we have a number of at grade pedestrian crossings providing access on public foopaths we have no (4) two of these are rural in nature and two are urban all being footpaths.

On the heritage line we have a number of grade separated crossings of under or over bridges along with at grade crossings 2 public road, 2 bridleway and one footpath. By the nature of the railway the vehicle crossings are popular for public wishing to see the heritage engines in use on the line.

I agree with the principles you have set out but at page 17 'user principle 8 c' I would illustrate how ineffective the present provisions are to achieve this based on an experience we faced this last year in trying to inform Network Rail of a defective stile.

Members of the Public contacted our service to report a defective stile that was in their view dangerous. We were not provided with any description of the defect, we were unable to locate or contact the appointed Rail Crossing safety manager which may have been a situation worsened by the CoVid emergency. Instead we had to reply on the online reporting tool on the web site using the chat service. We provided the information we were able. The crossing, a public footpath was not listed on your online reference map and so we provided the chat person with an OS NGR for the crossing, we had not been told on what side of the track the defective stile was. We also gave the name of the streets immediately adjacent to the crossing and provided with incident number 200629-000093.

We were subsequently emailed by another member of staff at Network rail seeking to know why the stile was considered dangerous, this email was not noticed for a while and when it was we did not hold the information provided by the original complaint we were unable to respond whilst we tried to contact them until we then had a further email from Network Rail 5 days after the initial report to say because of no response, the incident would be closed suggesting the reported failure of the stile would not be dealt with. The further information they sought was a description of the failure, the complainant had simply indicate the location of an undescribed failure stating it was dangerous, and without making a visit ourselves to site which was complicated further by CoVid restrictions it would appear the matter was never resolved.

The original complaint came into us almost certainly because they did not know how to report the problem directly to Network Rail and was probably simpler to contact ourselves. It's is not readily apparent to many members of the public using these crossings there is a 24/7 helpline by phone or web and so they transfer the obligation to ourselves to do so. In order then to reduce delay in rectification or failures and encourage users to adopt User Principle 8c. At every crossing the furniture should be clearly marked with its appropriate unique reference number and a notice indicating how to report that number to Network Rail by phone email or web would enable the public to directly inform you immediately of problems rather than the present situation which means problems possibly go un-reported or significant delays in being notified and efforts to do so failing due to administration errors. In the past we have had difficulty reporting failures at rail crossings because Network Rail staff appear to rely on chainages of furniture to know their position. We have no way to identify the chainage of shared interest infrastructure.

This would thereby ensure you user principle 8c was enabled and acted on to improve safety at these crossings

User Principle 7 Railway Principle 1

In the interest of both equality legislation and reduction of potential injury to persons trying to cross on public footpaths even at rural crossings that all stiles especially ladder stiles should be removed and where they cannot be replaced by hand gates then kissing gates fitted with latches should provide a means for people to step onto and off the track avoiding the need to cross stepped structures with the possible risk of failing structures collapsing.

At crossings used by equestrians consideration should be given to provision of mounting blocks on either side along with a place to safely and securely tether a horse off the track whilst waiting to walk the horse across a track after waiting for the arrival of a train.

Yours faithfully

Adrian Walls MIPROW

1. Dumfries and Galloway Council Local Authority -Roads Service Manager

2. Roads Service would use document. The document would be used as part of routine road safety inspections and related road network improvements.

3. Yes risks sufficiently covered . No obvious gaps in information.

4. We do carry out risk assessments and we do not have many level crossings within our area. Guidance will be helpful as it is more user friendly than previous guidance.

5. We currently do not use any other railway guidance documents.

6. None

7. N/A

From: Edward Rollings (Ed Rollings Associates Ltd)
Sent: 19 February 2021 13:59
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: ORR Level Crossing Principles Consultation

HM Chief Inspecting Officer of Railways

I am responding to your consultation as an independent consultant engineer, providing railway signalling and level crossing systems engineering consultancy services through my company Ed Rollings Associates Ltd.

I will personally be the user of your guidance in my capacity as a specialist sub-contractor to larger consultancy companies, local authorities and the heritage railway sector.

You are to be congratulated on a well written draft of the principles that articulates the thinking and strategy of ORR now and for the future.

I would make the following observations concerning the document:

1. The principles appear to be comprehensive, though the loss of detail could lead to some hazards and their associated risks not being captured if the practitioner doesn't have a significant experience base or suitable training.
2. The document refers briefly at paragraph 22 to using competent people though it doesn't go on to say what confers competence. Contrast with guidance from the Highways side on carrying out Road Safety Audits which sets criteria, including a specified period of experience or formal training.
3. The guidance will be helpful as a checklist of the broad range of issues to cover.
4. The document refers at paragraph 35 to the value of preventing a statistical fatality (VPF) as used in the rail sector. It would appear that a lower value is used for the road sector as there is a larger number of fatalities than on the railways. It is often difficult to persuade highway authorities to prioritise funds for road improvements at or near level crossings when they have greater numbers of injury and fatality losses at road junctions.
5. Use of the VPF factor and Gross Disproportion factors may result in different results when considering the financial situation of the level crossing operator. For example, Network Rail is in a different place financially to the heritage sector operators who largely rely on discretionary leisure travel for their income but who may contribute indirectly to the wider economy in which they are located.Has this disparity been properly explored and taken into account?
5. Quantification of risk is a difficult area for non-mainline railways such as the heritage sector who don't have the substantial data pool to draw on that Network Rail has access to.
6. It would be helpful if the All Level Crossings Risk Model (ALCRM) owned and used by Network Rail could be made more widely available, especially for the benefit of heritage railways to support quantified risk assessments.
7. While there is encouragement of Highway Authorities to adopt this guidance, for there to be innovation regarding the interface with the road user it will require the co-

operation and collaboration of Department for Transport. Could this be included in respect of authorisation of improved signs, road traffic light signals and potentially other emerging technologies to assist the road user experience and improve safety?

Other principles based guidance from ORR is helpful, however it is well supported in the mainline sector by extensive company standards. This is a problem for smaller organisations who don't have such ready access to or the resources to generate such standards and codes of practice.

The impact of this change on my business will be minimal, being limited to reading, understanding and preparing for implementation of the proposed guidance. As an experienced practitioner I don't see much, if any, content that is 'new'. As a small enterprise I don't have to carry out extensive briefing of others except as billable work.

Thank you for the opportunity to comment.

Ed Rollings
Director | Engineer

Ed Rollings Associates Ltd.

Essex County Council repose to the ORR consultation on 'Principles for managing level crossing safety' guidance

26th February 2021.

1. **Who are you responding as (an individual/for an organisation) and what is your role**

This response is being submitted on behalf of Essex County Council the Local Transport Authority and Highways Authority for the administrative county of Essex.

Essex County Council welcomes this opportunity to comment on the proposed 2021 'Principles for managing level crossing safety' guidance. The response below has been compiled following discussions with relevant officers at Essex County Council and Essex Highways and has been approved by Cllr Kevin Bentley, Deputy Leader and Cabinet Member for Infrastructure.

Essex County Council would be happy to discuss our comments in more detail. Enquiries to;

Alastair Southgate
Transport Strategy Lead
Highways and Transportation
Essex County Council
County Hall, Market Road,
Chelmsford, CM1 1QH

2. **Who would use this guidance in your organisation? When and how would it be used?**

Essex County Council (ECC) is the local Transport Authority and Highways Authority for Essex and is therefore responsible for;

- Transport strategy and policy for the promotion and encouragement of safe, integrated, efficient and economic transport facilities and services to, from and within Essex that are required to meet the needs of persons living or working in Essex, or visiting or travelling through Essex, including those required for the transportation of freight. (Local Transport Act 2008)
- Managing, maintaining and protecting the local highway network of over 5,000 miles of roads, 4000 miles of footways (including cycleways), and 4,000 miles of public rights of way (Highways Act 1980), and to ensure the safe and expeditious movement of goods and people (Traffic Management Act 2004),
- The Council is also responsible for the operation of supported bus services, community transport and home to school travel.

Level Crossings, by their very definition, cross and interact with parts of the highway network whether that is a road, footway, cycle track, byway, bridleway, or footpath.

The new Guidance on *Principles for managing level crossing safety* would therefore help to underpin discussions with Network Rail when considering any rail or highway works that could impact on the operation of a level crossing and the adjacent highway network.

It is our view that solutions at level crossings are best developed through local collaboration on a case by case basis so that all relevant parties are fully engaged and the best solution developed in the interests of all users of the crossing. It is therefore essential that the Guidance allows the flexibility necessary to develop the most appropriate local solution at each level crossing.

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

ECC would like to see the following additional elements addressed within the guidance for the consideration of Level Crossing Managers and anyone else with involvement at these highway interfaces.

Definition of the highway

- The definition of the highway in Annex B is not as accurate as it could be and should be amended to include cycle tracks and byways. The definition of a level crossing in Annex B also requires amendment to bring it into alignment with the correct definition of a Highway.

Highway rights

- It is essential that the rail industry properly identifies highways within the new guidance and reflects legislation in place governing the management, operation and maintenance of the highway. For example, it is our understanding that certain level crossing control systems cannot legally be used on the highway e.g. Miniature Stop Lights, unless appropriate changes are made to Traffic Signs Regulations and General Directions (TSRGD) and other legislation.
- It is important that the rail industry understands the roles and responsibilities of the local Highway Authority. While we attempt to work collaboratively, situations have arisen where Network Rail have changed a level crossing on the assumption highway rights would be removed without first seeking authorisation from ECC as the Highway Authority Similarly, Network Rail has on occasion obstructed public rights of way level crossings without first seeking permission to do so.

Assessment of risk

- Based upon our experience with the Essex and others Level Crossing Reduction Order, Transport and Works Act application and subsequent Public Inquiry, ECC

believes that there is a need for a system-based assessment of level crossings that assesses and considers all risks associated with each level crossing, its operation and use and, where alternative solutions are being considered, all risks associated with the potential alternate options. The aim should be to accurately assess and minimise risk within the system rather than focus on level crossing risk in isolation.

Safety Audits

- Whenever there are changes to the road network that may materially affect the safety of the road user, any proposed design should be passed through all the relevant stages of 'Road Safety Audit', from preliminary design, to detailed design to immediate post construction audits and if required further monitoring audits at 12 months after scheme implementation. In Essex, *"the Road Safety Audit Procedure shall apply to all measures proposed on the ERN (Essex Road Network) that involve permanent changes to the highway. This includes work carried out under agreement with ECC resulting from developments alongside or affecting the ERN".* It is likely that each Highway Authority will have similar police and procedures in place.
- This approach would enable ECC as the relevant Highway Authority to provide safety input early on in a scheme's initiation. This would also allow ECC to review the collision history in proximity to the scheme proposal; for example, a level crossing proposal may be being proposed adjacent to a section of carriageway where we have recorded a history of loss of control collisions and appropriate mitigation would be required.
- Past experience suggest that early Highway Authority input would be particularly useful where a level crossing performs several different functions, for example where a private vehicular access is coexistent with a public right of way.
- Reference to a need to work with the local Highway Authority and follow local highway related processes should be included in the Guidance.

Current best practise - Public Rights of Way

- In 2019 a memorandum of understanding was agreed between Network Rail, the Association of Directors of Environment, Economy, Planning & Transport (APEPT), the Institute of Public Rights of Way and Access Management (IPROW) and the Local Government Association (LGA).
- The intension of this document is to guide how the parties would engage on all matters relating to highway and railway interfaces and other matters. We believe that this document has relevance in terms of best practice and reference to this MoU would be appropriate within the new Guidance

The use of stiles and gates

- Currently there is little or no consideration by Network Rail of the need to engage with the local Highways Authority when replacing or adding limitations such as stiles and gates. Legally, pursuant to the Railway Clauses Consolidation Act 1845, Network Rail has a duty to put in such furniture; however. this would presumably now be subject to the Equality Act 2010. Defra has issued guidance in this regard, to which ECC as a Highway Authority would adhere (BS5709, 2018).

- There have been cases in Essex where furniture has installed at crossings without ECC's knowledge, or consultation with ECC in our Highway Authority role. This furniture has been of a type or design that we would not choose to use on our network. Network Rail is not obliged to consult the Highway Authority when putting in stiles and gates, but we are concerned as to how much heed Network Rail is paying to the Equality Act. It has been verbally suggested to our officers that Network Rail is not required to adhere in the same way as would be required of ECC.
- It is our view that the role of the Equalities Act should be set out in the refreshed Guidance, including any exemptions specific to Network Rail and the operation of level crossings. Relevant considerations set out in the Equalities Act should be referred in the new Guidance, perhaps including case studies reflecting best practice.

Consideration of wider Government policy and strategic aims

- The Government sees the delivery of new homes, decarbonisation, and the promotion of active and sustainable transport as important. When assessing the impacts of any level crossing proposals, the business case should consider impacts upon the delivery of these wider aims within the strategic case.
- Active travel also contributes to wider health outcomes that should also be considered as part of the strategic case, with solutions developed that provide appropriate support for active and sustainable travel.
- Development often leads to increased use of level crossings. It is our view that this is best considered at the local level with appropriate solutions developed on a case by case basis. Locally, we have a fairly good relationship with Network Rail where consultation between ECC, the local Planning Authority, the local developer and Network Rail has resulted in appropriate solutions such as the provision of a footbridge or ramped structure to maintain connectivity across the railway. This approach also has the potential to maximise development funding for the benefit of both ECC and Network Rail.
- The railway has the potential to cause severance especially for non-motorised users (peds / cyclists / mobility impaired), We know from experience on the trunk road network of the application of GG 142 Walking, cycling and horse-riding assessment and review, while this document wouldn't necessarily be applicable to all level crossing schemes, a similar approach could be adopted to ensure that the needs of all users are considered at the earliest stage.

Potential further development of the guidance

- Whilst the guidance document is focussed on principles it will rely on other updated documents, e.g. the case studies mentioned to direct designers to the appropriate control mechanism in each scenario. It could be appropriate to periodically update and augment the guidance with further examples based upon successful and collaborative application in practice.

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

Essex County Council does not carry out specific risk assessment of level crossings.

5. **ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?**

Essex County Council does not routinely consider railway safety guidance. We have, however, commented on how this Guidance should fit with relevant highway guidance within other sections of our response, particularly within section 3 above.

6. **What other information from ORR on level crossings would you find helpful?**

Any encouragement from the ORR that improves liaison and engagement with Highway Authorities would be supported. Locally, ECC and Network Rail have made attempts to work together in a more collaborative fashion, however this is often dependent upon the induvial actions of officers on both sides. Clear examples of best practice covering local collaboration would be welcome.

7. **(For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?**

Essex County Council is responsible for the financial support of essential bus services where these cannot be provided commercially. Consideration should be given to impacts on bus operators to ensure that changes to level crossing do not impact upon the commercial viability of bus services, and where possible level crossings should be improved or replaced to improve the effective operation of bus services.

From: Neil Wallace (Friends of the Far North Line)
Sent: 26 February 2021 14:27
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Consultation on ‘Principles for managing level crossing safety’ guidance

On behalf of the 'Friends of the Far North Line' (FoFNL) - '*Cairdean Na Loine Tuath',* I wish to offer some comments for the current consultation.

'Friends of the Far North Line' is the campaign group for rail north of Inverness - lobbying for improved services for the local user, tourist and freight operator.

As a Health and Safety Professional, I support the risk based approach promoting collaborative solutions appropriate to each individual level crossing.

As an example, I recently provided a 'FoFNL' letter of support for Network Rail's current planning application to replace a FNL level crossing with a bridge.

This follows a double fatality a number of years ago which was caused by a car driver ignoring the flashing red lights and colliding with a train.

The consultation presentation mentioned that some case studies would be forthcoming, perhaps you could look at the following scenarios:

There are a number of level crossings in the Highlands where the main road crosses the tracks at an angle, creating a skew crossing.

This creates a particular difficulty for cycle wheels to cross - a mixture of warning signs have recently been added at similar crossings:

- 'Cyclists Dismount' presumably advisory - but is this wording enough to be understood by visitors from abroad
- 'No Cycling' standard pictogram - presumably mandatory but often no indication if this is just for the crossing or the road ahead.
- Cyclists are sometimes expected to dismount beyond the barrier and also take note of a supplementary stop sign if a train is coming.

The are extra hazards associated with touring cyclists having to dismount on high speed A class roads and then pushing bikes with their backs to the traffic.

Possible low cost solutions could include ensuring space on road verge for cyclists to push clear of traffic, or where practical a 90 degree crossing pathway added.

Cycling on rural roads is understandably gaining in popularity and the rural train service is offering cyclists the means to extend the range of their cycle touring.

The overall health and wellbeing benefits for the community by using sustainable transport options should be promoted and encouraged.

Hope these comments are of assistance - happy to input further as appropriate,

Neil Wallace BSc, CEng, MICE, FCIHT, CFIOSH

Secretary,

'Friends of the Far North Line'

From: Daffern Rob (Furrer+Frey Overhead Contact Lines)
Sent: 22 February 2021 19:50
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: level crossing consultation

Hi
I have read the consultation document from last month. I would be interested to offer myself to volunteer to be involved.
My experience is only in high voltage overhead line, but comes from maintenance, construction and design. Level crossings are often contentious.

I answer to your consultation questions:

1. I am engineering director with Furrer+Frey. I deal with technical issues around design and installation of railway overhead line. I have approx. 20 yrs experience.
2. My OLE design team would use this, and hopefully we might be able to influence Network Rail too. This would be during the design of new or renewed OLE.
3. We “mindlessly” implement the group standard and Network Rail standards, These are not always appropriate or good value, especially for renewal projects. Clients often do not understand them too. We also position new OLE strs so have an effect on the sighting of strains for level crossing users. Again the standards and practice are very ambiguous.
4. From an OLE perspective, better guidance would be very useful. We often have to compromise, so understanding how/why the rules are as they are would be very useful.
5. I must admit, I was not aware of these previously I note now, they do not align with railway group standards. Interesting!
6. Clearer guidelines on electrification! Mainly to reduce risks but still maximise value.
7. We would support this change. I would cascade to my teams. Negligible cost.

Regards
rob

Rob Daffern
Principal Engineer
Director
Furrer+Frey GB

From: CAMERON, Philip (Gloucestershire County Council)
Sent: 25 February 2021 08:56
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Consultation

Good Morning
Thank you for giving us the opportunity to comment on this guidance.

1: Phil Cameron, Network and Traffic Manager, Gloucestershire County Council.

2: This would be used by our Highways Team / Public Rights Of Way Teams when wishing to work near level crossings.

3: I think the risks are clearly covered, this is helpful when trying to make contact with a large organisation, as that initial contact and knowing who to speak to can sometimes lead to no contact at all. It is also good to be able to chat works through with a person, should help be required.

4: This guidance is helpful, we carry out site specific risk assessment for individual sets of works. You guidance will help when carrying these out.

5: Any guidance is useful, sometimes it is having the understanding as to how the works you are proposing will potentially affect the operation of the level crossing.

6: Nothing else to add. This reinforces what people need to do which is positive.

7: N/A

Kind regards.
Phil Cameron
Network and Traffic Manager
Network and Traffic Management

From: Individual number 1
Sent: 31 January 2021 21:37
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Consultation on new ORR guidance on Principles of Level Crossing Safety

I write to respond on your consultation on principles of level crossing safety.

1. Who are you responding as (an individual/for an organisation) and what is your role?

I am responding as an individual. Following 34 years with BR, Railtrack and Network Rail I retired in 2016. In order to continue to contribute to the mainline railway I set up a service company when I retired and through that I now take on engagements relevant to my skills and availability. Relevant to this submission I am currently the chair of the Scotland's Railway System Review Panel and I have recently been asked to provide advice in connection with a development consent order which includes changes to volumes of traffic over level crossings.

2. Who would use this guidance in your organisation? When and how would it be used?

I would use this guidance. It is unlikely that I would apply it directly. In my role as an SRP chair as part of the panel I consider Safety Assessment Reports for proposals and the proposed disposition of recommendations made by the Assessment Body in the application of CSM-RA to help the panel reach a conclusion on whether to endorse a Declaration of Control of Risk or not under NR's NRAP standard suite. For example the Aberdeen to Inverness enhancement project considered by the SRP in 2019 included changes to level crossing protection arrangements.

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

No.

A fundamental omission from this document is to set out what the types of level crossing are so that the user can associated the guidance relevant to the types. Given that there a closed set of level crossing types it would be helpful to set these out and their legal status, form of authorisation, process to be applied insofar as the ORR and statutory bodies with duties in relation level crossing users e.g. Highways England, Local Authorities, land owners for private level crossings. The guidance is a helpful set of prompts and this could be set out in a matrix identifying against the set of types with the prompts of say Relevant, Possibly Relevant and Not Relevant.

I suspect without this provided from the outset NR and consultants who carry out risk assessments will conduct a similar high level first cut to help individuals and groups considering changes in level crossing to do so efficiently. It would be better for the ORR to accept to provide this guidance from the outset removing an unnecessary burden to start from square one on each occasion or for different organisations to potentially take different views – although I would hope that they would all generate a

consistent set of guidance for each level crossing type. Alternatively such guidance could be produced by RSSB as an adjunct to the principles ORR have set out. Ideally such additional guidance should be published contemporaneously with the new principles from ORR.

A standardised set of arrangements to protect use of level crossings means that users approaching different crossings can read, interpret and respond to the information provided through signs and indicators and the physical barriers can do so consistently. By moving away from explicitly supporting a standardised approach ORR are potentially creating an unnecessary risk arising from users encountering different ways of presenting the same information at different level crossings owned and operated by different mainline railway infrastructure managers.

In my opinion the advice on how to consider human factors is very helpful and is a useful compendium of factors identified by the RAIB in their investigations into accidents at level crossings.

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

I would, however I think in its complete back to basics approach it is missing an opportunity to be far more helpful and avoid inefficiencies for duty-holders and their advisors, as described above.

5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

The other ORR guidance I principally use relates to the application of CSM-RA and RIR. These principles are consistent with that guidance, however it is independent of it. There is an opportunity in these principles to note that their use can contribute to the risk management process in CSM-RA.

6. What other information from ORR on level crossings would you find helpful?

RSP7 is an excellent explanation of level crossing types and a standardised set of protection arrangements. This provides a consistent approach to forms of protection which allows users who use many different crossings and are familiar with the arrangements to read the information provided. It is useful to developers, designers, managers and maintainers of level crossings. I recognise that it has not kept pace with a number of changes over the past ten years but the benefits that can be taken from a consistent application of good practise. It is also an excellent learning aid. In my opinion there is a good case for this guidance to be updated and to continue to be published for use in the industry. As a set of guidance which can support duty-holders control the risks they identify I think it worthwhile and worthwhile maintaining for use across the industry.

I recognise that the level of detail in RSP7 may be beyond the level ORR wishes to maintain. The maintenance of this document through its standards committees and operational, human factors and technical expertise would be consistent with the

guidance published by RSSB. I would recommend an agreed transfer of the document to RSSB who can then run a standards review and update project to serve the duty-holders and their suppliers.

7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?

The publication of the new guidance will have minimal impact on my business. I will familiarise myself to awareness level and reference the document if occasion arises to make use of it. My processes are sufficiently generic to be unaffected by the change.

Kind regards

			Responses to the consultation exercise questions
1. Who are you responding as (an individual/for an organisation) and what is your role?			**I am the Director of a transport safety consultancy company & consulting engineer**
2. Who would use this guidance in your organisation? When and how would it be used?			**I would use it plus other consultants that I use periodically**
3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?			**Generally I think that some reference has been made to all the risks, I have some detailed comments below on specific matters**
4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer			**I do offer and carry out level crossing risk assessments, this guidance would be useful in that I would incorporate it into the much more detailed risk assessment process. This proposed guidance does not imply that specific equipment and arrangements would have to be installed in any given design and in that respect it is a move forward from the prescriptive RSPG7 although guidance notes on specific issues would be very beneficial to support this guidance. It would be even better if train control principles were not linked to historic concepts of protecting signals and overlaps.**
5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?			**I have no real opinion on this, level crossings are a unique subject in many ways.**
6. What other information from ORR on level crossings would you find helpful?			**Short guidance notes similar to HSE Construction Information Sheets on specific issues and principles, these would expand on the guidance and could be rapidly updated if they were a suite of individual documents. The pressing need is to set some guidance and minimum standards for level crossing designers particularly in the train control, prevention of trains arriving at crossings that aren't closed, equipment to close crossings effectively, designing to manage foreseeable abnormal situations and decluttering / simplifying infrastructure and legacy equipment and routes at the design stage of level crossings. Technology is so versatile and so reliable these days that level crossing design concepts have not caught up with what equipment is capable of, particularly for train protection and for train detection. A guidance note that set some improved minimum standards for the heritage sector would also be beneficial in the aspiration to manage the significant safety risk profile that level crossings have in the sector.**
7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?			**The impact would be very low since the principles do not affect our established processes for level crossing risk assessment**
			Specific comments on the guidance
Number	**Page**	**paragraph**	**comment**
SDLS 001	general	general	There's not enough emphasis on risk elimination and residual risk reduction being within the gift of design engineers, it would be much better from the outset to provide engineering controls that run the crossing and control the trains, as opposed to trying to train, and then rely upon, the general public's behaviour. My view is that human factors input should be mandated at the design stage for projects in order to enhance hazard elimination / risk reduction through engineering provisions. To place too much emphasis on human factors as a means of controlling users risks limiting design solutions by presenting level crossings as an operational and public management challenge, instead of a careful and strategic risk reduction by design exercise
SDLS002	general	general	There's a failure to promote the exciting potential of train control systems regarding train protection on conventionally signalled routes and in cab signalling which is just around the corner, the frequent references linking level crossing risk controls with signals and overlaps risks perpetuating the existing standard designs and solutions that are of doubtful value in terms of risk control compared to what is technically possible, and often low in cost, with existing train protection and in cab signalling systems.
SDLS003	general	general	In relation to the heritage sector there is no real scope for train protection to be fitted, and neither can it be safe for heritage trains to be permitted to approach crossings, stop boards notwithstanding with relatively poor braking (both when coupled to coaching stock, and certainly when light engine or pulling wagons). In order to achieve tolerable levels of risk crossings which (a) are activated before (or by) the approaching train and (b) fully close the crossing to road users of all types, should be the standard for heritage crossings. If the measure of level crossing risk at heritage crossings is based on the percentage of RAIB reports from the sector that address incidents at level crossings, the level crossing risk profile is much higher than on the mainline and deserves more attention and better design to prevent trains arriving at crossings that are not properly closed.
SDLS004	6	5	Railway duty holders should have their own bullet point, TOCs and FOCs carry significant risk and are statutory consultees on railway standards etc that private landowners / neighbours of the railway do not have a real voice on. The guidance should also include infrastructure maintenance companies and other contractors on the railway network who can particularly affect safety at private crossings during their activities but often have little or no understanding of these, nor do they plan for them.
SDLS005	6	5	It would be useful to include utilities, land based organisations and government agencies in this bullet point
SDLS006	6	9	It would be worth adding a comment that the consequences of catastrophic risk are as serious at private crossings as they are at public ones
SDLS007	7	15	It would be good to mention stations run by TOCs next to level crossings, the TOC can have significant influence over safety issues at these crossings
SDLS008	9	21	where the workplace regulations apply the duty is absolute to ensure pedestrians and vehicle to circulate in a safe manner
SLDS009	10	27	An additional paragraph stating that any vehicle or bridleway crossing represents a residual risk with catastrophic consequences, no matter how sophisticated the risk controls are would be beneficial, there is no crossing that is 100% safe no matter how sophisticated.

SLDS010	11	29	Available train protection that is cheap and very effective could be deployed immediately and be more effective than existing systems that only warn - TPWS, specifically an overlay OSS armed when the crossing is not closed to the road, would be hugely beneficial and much better than Stowmarket or SPAD prediction, there is no excuse for not designing in such arrangements, and in cab signalling creates even more potential. Current railway standard risk assessment tools don't even consider these.
SDLS011	14	(a)	Why make an issue of fare evasion? Having a single ticket machine on one platform at a station with a level crossing is a far more significant risk for which the train operating company is directly responsible, the entire design of the station arrangements at such crossings leads to pressure to behave in an unsafe way, including crossing between the platforms and it is a very easy thing to rectify.
SDLS012	14	(f)	Non standard RTL sequences are giving rise to confusion and unintentional risky behaviour at Stowmarket and SPAD predictor fitted crossings, level crossings should display standard sequences on every occasion if possible and train protection should be provided to catch over speeding trains on the approach to crossing that aren't closed so that they are brought to a halt, or near halt, at the crossing.
SDLS013	16	(a)	Active warning to users ought to be prioritised above other risk controls, I realise it is first in the bullet points but it could usefully be explicit given the high percentage of all train collisions that occur at passive crossings.
SDLS014	16	(c)	suggested text - 'how to prevent injury to users / how to keep users a safe distance away' because the latter half of the phrase seems to put the duty on the user instead of the EAWR duty on the designer to be Reg 7 compliant. Also suggest some reference to horse riders here since they have direct and presumably legally binding instructions to dismount at all crossings with OLE - it would be much safer to design a safe height for conductors to the national standards in ESQCR, in which case it is not clear what the safety benefit of dismounting is.
SDLS015	17	Principle 9	Suggest that the issue of managing maintenance activities is not just confined to maintenance of the level crossing - there are many assets the maintenance of which will impact on level crossings but the rule book does not require any action to be taken for example with private crossings (they could be locked out of use by agreement or manned for example). A system approach to level crossing safety design needs to address maintenance of the infrastructure for all disciplines.
SDLS016	18	(a)	suggest adding an additional bullet point - controlling the approaching train to prevent it arriving at a crossing that has not been physically and legally closed
SDLS017	18	(b)	Suggest adding an additional bullet point - providing dedicated exit barriers for users, there is not enough recognition among designers of the significant safety risks that are present at two barrier full barrier crossings.
SDLS018	18	(b)	the bullet point on load gauges could include ' a suitable distance from the running rails' current standards may not reflect the length and design of modern vehicles
SDLS019	19	(d)	wouldn't 'no one is able to' be better than users, the legal duty in PUWER includes workers - I realise it is at Principle 5 as well
SDLS020	19	Principle 2 (b)	There is much more scope for effective design and deployment of train protection than simply linking it to signals and overlaps, in fact signals and overlaps could become less important in terms of their positioning if train protection is used as an overlay in an intelligent manner, this bullet point as it is will tend to limit the potential uses of train protection and neither is it future proof in terms of in cab signalling systems because they could be controlling the approach speed of the train in the relation to the crossing itself (and not other fixed points on the infrastructure) for maximum freedom in operations
SDLS021	19	Principle 2 (c)	Again it would be better to dispense with the association with signal and overlap, it is too simplistic, it would be better to talk in terms of a train arriving at a crossing in an unplanned manner because this covers protecting signal, train protection (overlay) and in cab signalling systems, it helps to recognise that all other things being equal there remains the residual risk of a train sliding even when ATP or TP has been fitted and operated, it isn't simply a SPAD situation and the bullet point is not covering the system risk properly, it is too closely related to historic (and out of date) train control thinking and standards.
SDLS022	19	Principle 3	Add a bullet point 'designing routes and train control equipment in the vicinity of the crossing to be as simple as possible and where necessary TOC and FOC (other railway duty holders) cooperation should facilitate the necessary route changes to improve safety
SDLS023	20	Principle 4	Waiting or standing' - the use of waiting alone implies an intentional operation where the train is planned or permitted to wait. There could equally be a breakdown or other foreseeable abnormal situation where a train could wait or stand over a crossing
SDLS024	20	Principle 4	The crossing design itself needs to ensure that this does not happen - in addition to design of controls to avoid this there is also no need given the reliability of train detection equipment etc for dark mode or its equivalent to be part of crossing design, and it ties in with not showing the crossing user the wrong messages / indications. Re-opening crossings with a train on them or approaching them (including extinguishing a red light and not showing a green at MSLs with the railway still live and trains running) should be eliminated as a risk by design
SDLS025	24	Principle 4	Suggest the bullet point should read 'clearly visible mandatory instructions that require actions to discharge vehicle drivers' legal duties at the crossing must be provided along with the equipment necessary to communicate and safe stopping places provided and clearly marked', at automatic crossings it is the case that no vehicle that is at risk of being grounded on a crossing or traversing it excessively slowly can be legally driven over the crossing unless the crossing controller has been contacted?
SDLS026	28	OLE	There are shared infrastructure level crossings with DC OLE -it may be worth noting in the glossary although trams are excluded on p6

Response to ORR consultation on 'Principles for managing level crossing safety' guidance

1a As whom are you responding?

As [redacted], an individual.

1b What is your role?

Road user / retired civil engineer specialist in road safety

2a Who would use this guidance in your organisation?

Not applicable

2b When and how would it be used?

Not applicable

3a Are the risks associated with all types of level crossings sufficiently and clearly covered?

Having watched in horror while a wheelchair user attempted to cross the line somewhere near Aviemore, I would have to say that the risk of some narrow wheeled vehicles becoming trapped in a level crossing does not appear to have been addressed.

I am not convinced that the risks associated with road vehicles being diverted from a level crossing where lengthy delays have been introduced by the installation of full barrier systems has been fully addressed.

For reasons referred to below, it may no longer be sufficient to consult a local traffic authority.

3b Are there gaps in the document that you think need to be addressed?

There is nothing in the document to suggest that it is unacceptable to “control” risk by subjecting road users to prosecution in circumstances where the road user has no control over his or her action, and where those managing the crossing have made not the slightest effort to understand what is going wrong. The points at paragraph 20 require some expansion.

Specific mention should be made of the difficulties which will occasionally be experienced by road users on poorly aligned, vertically and/or horizontally approaches to a level crossing. As experience at Cornton Level Crossing no. 1, has shown, these can create conditions in which road users may fail to see the traffic signal or signals at the appropriate time. The phenomena in question have been understood for decades, but Network Rail's “solution” continues to be the installation of red light cameras and the prosecution of drivers.

The rather large gap that needs to be addressed is that of the various forms of blindness that affect human beings, e.g. “inattentional

blindness" and "change blindness". Fortunately, these have not led to accidents at the above crossing, although it is suspected that "incidents" have been recorded. Unfortunately, collaboration is not something Network Rail seems fully to understand, and the former HSE/HMRI was singularly unhelpful.

Collaboration, of course, has to be with persons who are aware of the psychology of driving. It is rather naïve to suggest that this can be achieved simply by approaching local traffic authorities. In a letter to New Civil Engineer of February 2021, a Fellow of the Institution of Civil Engineers noted that, "The days when one could have a professional engineering career in local government are long gone. The usefulness of the professional has been dumbed down by our parliamentarians." This is certainly true in Scotland, where the Regions, with sufficient resources and able to employ staff of the required calibre, could address the matter of road construction and maintenance properly, were reduced to small inadequate "unitary authorities" in 1996. I would be very surprised if any of them now employ anyone who can advise on the aspects referred to above.

4 If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

Not applicable

5 ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

Not applicable

6 What other information from ORR on level crossings would you find helpful?

Not applicable

7 (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?

Not applicable

How to respond to this consultation

Responses to this consultation are invited by the closure date of 26 February 2021 and should be sent by
email to: LevelCrossingPrinciples@orr.gov.uk

Dear ORR, 18th Feb '21

level-crossing safety principles document consultation.

I am a regular user of public right of way footpath level-crossings and would classify myself as having some mobility issues.

Please find my observations on the draft document below :~

i) The consultation document is so general in tone that its contents could be interpreted in a dozen different ways, which is not helpful.

ii) It appears to have been written from a

railway perspective and implies that the railway has seniority of movement at level-crossings, which I do not believe to be legally the case for non-railway users? Institutional rail bias in such documents, whether conscious or not, just antagonises the many users of highways crossed by railways.

ii) I am glad that the Equality Act is covered in some detail, as footpath level-crossings have (to date) been shockingly un-accessible to many disabled users.

Clearly if a public level-crossing can be used by an able-bodied person, it would be discriminatory for it not to be so used by a disabled person.

It might be useful for the ORR, if it has not already done so, to contact and take advice from the ESSA as regards the free movement rights across level-crossings for disabled people. They appear to be comprehensive and do not allow for any reduction in full access rights via the use of cost-benefit processes, such as user censuses, to deny access for potential future users. This is a fundamental point.

iii) My final comment is that I have always found the current RSP7 document to be a well-designed, clear and informative publication - as a general reader, wishing to be enlightened.

I fear that the shattering of level-crossing information and guidance into various departmental technical papers - including the present consultation document - represents an erosion of access to factual information for the general user. RSP7 does serve a purpose beyond the technical bodies it is principally aimed at, and an updated version would still have a general user base, for those without ready access to more obscure unified literature, be it in paper or on-line form.

Yours sincerely,

Consultation questions

We are particularly interested in receiving feedback from those in your organisation who will be using the principles guidance in the future.

1. Who are you responding as (an individual/for an organisation) and what is your role?

I am responding as an individual who:

- Has risk assessed many level crossings in the UK, a few in Australia, and over a hundred in Canada, with the vast majority being assessed 'from scratch'
- Is a safety engineering expert and manager with 30+ years cross-sector experience, including c.15 years in railways
- Has worked for a number of large engineering/design consultancies plus a signalling manufacturer (at a time when object detectors on LCs were first being tested)
- Is someone who was a contributing editor of Yellow Book 4 Engineering Safety Management
- For a couple of years until recently, was a visiting university lecturer in engineering safety management for railways for MEng/MSc students
- Is a Fellow of the Safety & Reliability Society
- Left the rail sector entirely last month but, having invested a noticeable portion of my career within it assessing level crossings both in the UK and overseas, very much wanted to have a say in this particular consultation – regard this feedback as my parting gift?!

2. Who would use this guidance in your organisation? When and how would it be used?

In my former companies/projects, this would have been used

- By myself (in role of ESM or CSM manager), members of my (ESM/CSM) team, human factors representatives and other members of a project, in particular design teams for signalling, civils, track and power/OLE.
- To support a LCRA and associated safety case in its own right, or as part of a wider route risk assessment, or risk profiling of a route.
- For new projects and updates of existing routes/LCs.

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

Various gaps in coverage noted as follows:

- Requires mention up front that LCRA may be carried out as a stand-alone assessment or may form part of a wider route risk assessment or profiling exercise.
- The acronym LCRA isn't actually used but needs to be.
- I didn't notice any mention of the existence of LCRA tools (although this may be intentional)
- There is a lack of commentary on what type of engineers are involved in LCRAs. In particular, it would be useful to request that the LCRA be managed by a SQEP safety engineer (one with functional safety experience), with a HF engineer also heavily involved.
- HF is covered fairly well, but there is a lack of mention of EMC/EMI. This requires coverage with increasing technology by both the railway and the public.
- There is talk about object detection but there is a general lack of discussion about the LC control system – this relevant to both upgrades and new systems. The control system also needs assessing (to greater/lesser extent, depending), as well as what is actually physically

situated at or near the crossing. It (or its algorithms) is often an important contributor to the LC risk.

- UP4/RP1 – need to mention lighting
- RP3 – needs to mention freight trains. These can really affect LX design.
- RP4 is about barriers re-opening - you also need a specific RP about ensuring that barriers get closed. This isn't really covered in RP1 but 'barriers closing safely' is very important in its own right – when they close, how they close, how their status is monitored.
- RP2/RP4 – need to mention concepts of minimum dwell time and SIPs, without going into any details, and this should appear before the other items as it is the first line of protection/ defence.
- UP1 – would expect to see mention of TPV.

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

Yes, in my view it forms a good basis for carrying out LCRAs without being too prescriptive. It helps that the principles are very clear and have been set out rather like requirements (helps with perceptions of design teams as to what is needs to be covered).

It would be useful to consider presentation of the principles either in Goal Structuring Notation (this being current best practice for safety cases) or in a Requirements Engineering format (such as MBSE).

5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

In my view it supports ROGS guidance and other RSPs etc. More generally it would be good if the RSPs had a consistent approach and format.

6. What other information from ORR on level crossings would you find helpful?

In some ways this new doc is over-simplified. The current RSP7 does fulfil a useful role and is more comprehensive in some ways e.g. it is more 'designer friendly', and also gives good appreciation of the different types of LXs that existed at time of publication. I would prefer to see RSP7 updated - alongside the appearance of this overview guidance document, which I still believe is of benefit/needed - to include examples of newer crossing types that don't fit into the existing fold e.g. Meerkat. This depth of information is needed by assessors to gain understanding. It is arguable this should come from the project or standards, but from experience the Crossing Type is key to identification of the hazard suite and the associate risks from crossing operation.

7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?

n/a

How to respond to this consultation

Responses to this consultation are invited by the closure date of 26 February 2021 and should be sent by email to: LevelCrossingPrinciples@orr.gov.uk

post to: ORR Level Crossings Principles consultation Office of Rail and Road 25 Cabot Square London E14 4QZ

Principles for the management of level crossings

I am a retired railway signal engineer but maintain an interest in railway operations and in particular the safety aspects. In this context there is a particular interest in level crossings as potentially the most significant risk to safe railway operation. I am therefore responding as an individual with no association to any organisation other than through my historic professional relationships.

I have a few comments on the draft Principles for the management of level crossings which I detail below, some of which I raised during your webinar on the 23 February.

My comments are listed below:

1. Firstly, I like the revised presentation outlining many of the risks that need to be considered as part of a level crossing risk assessment. The new style avoids being constrained by historic types of crossing compared to RSP7 which focussed the risks by type of crossing. The new style being generic allows new alternatives to be considered more easily.
2. Secondly, I endorse the concept of greater consultation between the various organisations and people involved however the document reads as railway related (not surprisingly) and I suspect many others will assume it is for the railway to lead on any such consultation. There is certainly a need for others, when developing surrounding areas, to initiate such discussion. That may well need a wider public awareness plan.
3. I endorse the concept that wherever possible level crossings should be eliminated. Whilst the document is intended to cover assessment of risk because a level crossing exists it is in my opinion lacking sufficient guidance on how to determine and manage the risks arising from closure, e.g. diversion of foot or bridle traffic on to unsuitable roads. By inclusion of such detail the aim of enhancing consultation should be improved
4. The section on Highway risk assessment reads as very focussed on public highways. It would seem appropriate for this section to include risks associated with footpath and bridleway approaches and those on private and unmade roads. This may be a difficult challenge as the approach routes to these crossings are of very variable quality. Again, inclusion of such detail should encourage landowners and others responsible for such access paths to be more involved and consultative.
5. A minor point is in Railway Principle 2 which refers to passing a signal (at danger). Modern signalling systems are increasingly dispensing with signals so a more generic term such as “beyond the limit of authority” or “without movement authority” may be better to future proof the document but may make the document less understandable by non-railway personell.

Response to the 'Principles for Managing Level Crossing Safety Guidance

I am a retired Safety and Environment Engineer who was employed by the British Coal Corporation. My response is my personal view on the proposed Guidance.

My main concern is with respect to **Section 5 Safe Highway**.

I am unsure whether my comments are within the intended scope of the Guidance but I submit them for consideration.

In recent times the use of satellite navigation has become almost universal in road traffic vehicles with its many advantages. However, a down side has been that vehicles have been routed along routes which are unsuitable for many larger vehicles which has resulted in overbridge strikes and damage to narrow road bridges over waterways. There is little doubt that there have and continue to be problems with vehicles being guided by satnavs to user operated and some remotely monitored level crossings where a suitable alternative route is available.

I suggest that consideration be given to highway signage at appropriate locations which would indicate that a road is unsuitable for specified vehicles except for local access. It is appreciated that signage already exists on some routes because of restricted width and/or weight limits.

[redacted]

26 February 2021

From: Individual number 8
Sent: 26 February 2021 12:33
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Level Crossing Principles Consultation

Dear ORR

I am writing on a personal basis having been interested in Level Crossings and especially Footpath Level Crossings for many years and in the period probably from 2005 for a few years being the Ramblers Association's representative at regular meetings arranged by Network Rail on Level Crossing Safety. I am also a former British Rail and South West Trains employee being employed in the Operations Department both as a Supervisor and Manager for over 30 years prior to my retirement in 1998.

I wrote at length to Network Rail in about 2007 concerning Footpath Level Crossing safety and although I received a phone acknowledgment of my letter, no written reply has ever been received. Sadly I cannot, now, find a copy of that letter to help me respond to this consultation.

My main concern at the time and still is, the varying condition of footpath level crossings, especially the signage, entrance/exit gates and stiles and the actual condition of the footpath surface both approaching and crossing the railway lines. No doubt, over the years improvements have been made and some or many footpath level crossings have been upgraded but I would suggest that a principle, indeed a priority, should be that the entrance and exit stiles to footpath level crossings should be consistent across Britain's railways and regularly checked, as should the surfaces approaching the railway lines and crossing them to ensure user safety.

The other point that concerns me is the signage . The Stop, Look and Listen Boards have not changed in style, probably since the nationalization of Britain's railways in 1948. In that time the population of Britain has changed with many now not having English as their first language. I suggested in my letter to Network Rail back in 2007 that the signing should change, still having the Stop, Look and Listen message but also including pictograms for those not readily understanding English. Please can this be considered to add to footpath level crossing safety.

In conclusion, I would ask that vegetation impeding the view of users of footpath level crossing is cut back on a scheduled and regular basis to enable users of footpath level crossings the best possible view of oncoming trains.

Thank you for the opportunity to add my views to this consultation, whilst my comments may seem fundamental it is important to users that all footpath level crossings are as safe to use as possible.

'Principles for Managing Level Crossing Safety' guidance

Institution of Occupational Safety and Health (IOSH) Response

Introduction

The Institution for Occupational Safety and Health (IOSH), the chartered body for Occupational Safety and Health (OSH) professionals, is pleased to have an opportunity to comment.

The content for our submission has been provided by members from the IOSH Railway Group Committee. We provide a summary position, answers to a selection of consultation questions, additional comments and further information about IOSH and the Railway Group and the Committee as part of this paper.

Executive Summary

We welcome this document as a positive contribution to improving the control of significant risk(s) of level crossings on the railway.

We recognise the experience and expertise which has been applied to creating some high level principles to inform the level crossing (LX) risk assessment process.

We have taken a first principles approach to evaluating the document acknowledging that this is a specialist area.

Our aim is to enhance the document with the aim of improving its effectiveness and impact.

In summary our key points are:

1. We welcome the guidance as a positive contribution to railway safety.
2. We are concerned that the timing may not be the best as several other changes to LX guidance are in progress which does not facilitate taking a rounded view.
3. We have reservations about the clarity of the context, purpose, and scope of the draft.
4. The high level nature of the principles may not be appropriate for some of the target audience.
5. Alternative approaches to presenting the guidance may assist both understanding and application.

The detail associated with these key points is within the next section 'our response to the consultation' as below.

Our response to the consultation questions and comments on the guidance

General note: The guidance is a positive step to encourage a more risk-based approach to LX risk assessments. The online webinar was very valuable in helping to understand the background, objects and purpose of the guidance. We offer the following feedback to further enhance the document.

Question 1 - Who are you responding as (an individual/for an organisation) and what is your role?
As detailed at the end of this document, the submission is provided by the IOSH Railway Group Committee (refer below).
Question 2 - Who would use this guidance in your organisation? When and how would it be used?
Please review our 'additional comment' section below on 'target audience'.
Question 3 - Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?
Please review our 'additional comment' section below on 'purpose', 'scope', and 'risk assessment principles'.
Questions 4 - If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer
Please review our 'additional comment' section below on 'risk assessment principles'.
Question 5 - ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?
Please review our 'additional comment' section below on 'timing', 'context', 'scope' and 'risk assessment principles'.
Question 6 – What other information from ORR on level crossings would you find helpful?
Refer to 'summary' above and 'additional comments' below.
Additional Comments / or comments linked to above questions
Timing 1. We are not sure that the timing of this consultation is appropriate to achieve the best outcome. Response is sought when other significant relevant

information is inaccessible to provide the opportunity to make an overall judgement and meaningful comment. For example: the case studies proposed are critical to the application of the guidance but are not yet complete; the ORR level crossing web-pages are under review; Network Rail tools for level crossing safety are inaccessible to many of the target audience and the relevance and continued accessibility of the Level Crossing Risk Management Toolkit, is not addressed.

Purpose

2. It would assist if the need for the document was more fully explained. For example; what is the size and scale of the problem which is being addressed? What is the ORR perception of what is holding back progress? What is the rationale for the new approach? Is the intention to initiate a widespread review of LX risk assessments?

Context

3. It would help if the context of the guidance was explained in the light of ORR roles, responsibilities, policy and guidance. For example, it is not clear how the level crossing principles relate to other related documents such as:

    a. The ORR level crossing policy and its implementation e.g. RIG-2014-06 and the other ORR related guidance;
    b. Chapters 4 of the ORR Strategic Risk Chapters;
    c. The Goal Setting Principles for Railway Health and Safety, (GSPRHS) and in particular Principle 2.9 Level Crossings.

4. GSPRHS Principle 2.9 is one principle supported by 11 factors which should be considered as part of a LX risk assessment. There is some overlap between these factors and the principles in the LX guidance. Is it the intention that the LX principles amplify the GSPRHS factors or replace them? The use of the word 'principles' for what are 'factors' in GSPRHS and at a different level in a hierarchy of documents has the potential for misinterpretation.

5. There may also be value in explaining how the guidance fits with other industry guidance such as the RSSB:

    d. All Level Crossing Risk Model,(ALCRM);
    e. Safety Risk Model (SRM);

6. References and links to HSE Guidance on risk assessment, ALARP and Cost Benefit Analysis would also help.

Scope

7. We agree that there is a need for guidance on the 'Principles of Managing Level Crossing Safety' though the document does not address the totality of

the issue. The emphasis is on the risk assessment process, which is only part of the process of managing risk.

8. We think the scope should include how LX management is set within the whole system of an organisation's Safety Management System, (SMS). Issues which could be addressed in this broader approach would include:

    a. Assessing and maintaining the competence of assessors within the competence management system. Competence is referred to in the text but is this not a key issue? Is this not particularly relevant to the private and heritage sector.
    b. The monitoring and maintenance of level crossings and associated equipment. How does the assessment inform monitoring, (active and reactive) and maintenance of equipment and behaviour?
    c. The need for information, instruction, training and supervision for those workers, (employed or subcontracted) who operate level crossings; perhaps particularly where there are UWCs on private agricultural land.

Target Audience

9. We do not consider the guidance is pitched at the appropriate level for all the potential audience. It is too high level to add much to those experts dealing with LXs on the main line and lacks sufficient detail for those on the other sectors.

Risk Assessment Principles

10. There is no single, clear, comprehensive summary statement of the nature, scope and scale of the hazards, or a principle related to identifying who and how people may be harmed. Also, is it not necessary, in line with Management of Health and Safety at Work Regulations 1999 (MHSW Regs) to emphasise that the risk assessment process needs to be proportionate to the hazards/risks.

11. Is it not necessary for an assessment to be informed by the history of events at a crossing, and at crossings in general similar to that being assessed? How is that information accessed? Where is information about the history of extreme/unusual behaviour and trespass to be found? Where is current 'good practice' on LX risk assessments accessed?

12. The emphasis is on the analysis in the risk assessment process and less on synthesis and decision making, e.g.

    f. Is it not appropriate for assessments to be subject to challenge as part of the process?
    g. How does the reliability of equipment inform the choices of precautionary approaches and equipment?

13. For the assessor the process of deciding on appropriate precautions is critical in reaching a proportionate precautionary solution. Providing some

advice on scaling the risk and the thinking steps and boundaries within which to exercise discretion seems appropriate for those who do not have access to the algorithms and assessment tool kits.

14. For example, a thorough analysis of the users and the volume and speed of train traffic would give an indication of the scale of the hazard and risk. However, rail principle 3 is silent on the relevance of the speed and volume of train traffic to the risk assessment process. Clear assessment of the scale of risk may rule out some LX precautionary options. Making such decision criteria visible to all would aid those with no access to computer-based tools. In the absence of some criteria or guide to match risk to precautions it is not clear how the guidance will necessarily lead to improvements in LX design and improved control of risk.

15. We believe the use of 'principles' is not helpful, see paragraph 4 above. Also, we believe the split into user, railway and highway principles does not add great value, e.g.

    h. The user principles start by focusing on who users are and their needs, though user principles, 4, 6, 7, 8 & 9 are essentially about precautionary measures.
    i. There is overlap between the sections. Railway principle 9 is relevant to user behaviour.
    j. The railway and highway principles are separate though the primary safety consideration in each case is the same, 'to prevent a collision between a train and crossing user'

16. We acknowledge the complexities of the subject and that there is no single ideal way of structuring the guidance, however we suggest that alternative approaches are considered, e.g.

    k. an approach could aim to illustrate how the general process of risk assessment is applied to the unique challenge of level crossings by presenting the key information, factors and criteria necessary at each of the assessment process for a good LX assessment, i.e., in identifying hazards, assess risks, controlling risks, record findings, and reviewing controls.

17. We hope these comments are helpful. We would be happy to discuss further if that would help.

About IOSH

Founded in 1945, the Institution of Occupational Safety and Health (IOSH) is the largest body for health and safety professionals in the world, with around 48,000 members in over 130 countries, including over 13,000 Chartered Safety and Health

Practitioners. Incorporated by Royal Charter, IOSH is a registered charity, and an ILO international NGO. The IOSH vision is

"A safe and healthy world of work"

The Institution steers the profession, providing impartial, authoritative, free guidance. Regularly consulted by Government and other bodies, IOSH is the founding member to UK, European and International professional body networks. IOSH has an active research and development fund and programme, helping develop the evidence-base for health and safety policy and practice. Summary and full reports are freely accessible from our website.

We have also developed a unique UK resource providing free access to a health and safety research database, as well other free on-line tools and guides, including resources for business start-ups; an occupational health toolkit; and a risk management tool for small firms.

IOSH has Branches worldwide and special interest groups covering aviation and aerospace; broadcasting and telecommunications; construction; consultancy; education; environment and waste management; financial services; fire risk management; food and drink industries; hazardous industries; health and social care; logistics and retail; offshore; public services; railway; rural industries; sports grounds and events; and theatre.

IOSH members work at both strategic and operational levels across all employment sectors.

For more about IOSH, our members and our work please visit our website at www.iosh.com. Our five-year strategy WORK 2022 can be viewed at www.ioshwork2022.com and our resources specifically tailored for business can be found here www.iosh.co.uk/ioshmeansbusiness

About IOSH Railway Group Committee

The IOSH Railway Group is made up of over 2,700 members and brings together IOSH members with a shared interest of rail as a specialist area. Through the Railway Group, members can network and exchange information related to the rail industry sector, as well as helping IOSH to meet its wider aims.

In brief, The Railway Group strategy supports the IOSH WORK 2022 vision of a safe and healthy world of work. The Railway Group Plan aims to support delivery of the industry strategy in, 'Leading Health and Safety on Britain's Railway and the priorities highlighted by the ORR'.

The Group:

- aims to facilitate networking, learning and the development of group members
- will draw from members' expertise, experience, skills and networks to develop and implement initiatives for how we work with organisations and businesses to move forward together

- will engage with organisations to understand their own, local challenges in protecting people from work-related injury and illness.

Examples of activities include:

- continue to support the EBRD (European Bank for Reconstruction and Development)
- continue to contribute to ORR (Office of Road and Rail) and RIHSAC (Railway Industry Health and Safety Advisory Committee)
- continue to monitor ORR developments for PR18 inputting into consultations as required
- strengthen our links with other rail transport systems and the heritage sector

For more information, see www.iosh.co.uk/railwaygroup

Please direct enquiries about this response to:

Ruth Wilkinson, Head of Health and Safety

From: Bob Milton (Kilnside Farm)
Sent: 26 January 2021 17:55
To: CCT Contact <contact.cct@orr.gov.uk>; Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Sirs

I am at present involved with an extinguishment order on a level crossing -FP18 Staines moor. As a result of evidence I have the following issues with your proposed guidance

1. Appendix A No mention of meeting with the local access Equality group or meeting the need for an Access Impact Assessment on any alternative proposed by NR or the public.

2. Your guidance does not impose a duty on the Network operator to give all alternatives whether they agree with the cost burden or not

3. Accessibility of the Rights of Way network is a major consideration and Rights of Way improvement plans are just that and there needs to be direct benefit and no disbenefit of any proposals. An example would be that an extinguishment order would result in a major increase in distance to return to the other side of the track and with greater difficulty to those with protected characteristics. In the present case this is the outcome as NR infrastructure deemed a footbridge too expensive.

4. Again in the present case and in another recent one the status of the land either side of the footpath crossing was ignored through ignorance. The two case the land either side are s193 Law of Property Act 1925 equestrian access registered common land. At no time in either case was this acknowledged. This is especially relevant in that 80% of equestrians are women and over 40% are known to have protected characteristics. This aspect of the considerations in the document is missing completely.

5. I have attached the Network Rail /IPROW/ Adept memorandum of understanding that does not seem to appear in any of your supporting documents or appendices

Yours faithfully

Bob Milton

Abbeylands

Independent Consultants on Rights of Way and Common Land

From: Jerry Greenwood (Network Rail)
Sent: 25 February 2021 16:08
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: ORR Consultation: Principles for Managing Level Crossing Safety

OFFICIAL

Thank you for inviting me to consult on the Draft Guidance, a document which I consider is a positive move forward. In reviewing the Guidance I have outlined my thoughts, below, which I hope will be given consideration in the finalising of the Guidance. I have addressed this mainly at the pedestrian and bridle interface at passive level crossings.

First, in addressing higher level principal points:

1. Bearing in mind that this Guidance is not specifically aimed at Network Rail operatives, but is also giving practical guidance to land owners, local authorities and Users of level crossings (Para 5.), the Guidance (rightly) strongly promotes the assessment and management of risk – but it does not actually identify the majority of the differing types of risk that do occur at any one crossing. Against the Introduction at Para 1., how can the Guidance inform on the assessment and control of risk whereby it does not define and categorise all risk types within it's 'key factors'?
2. As reinforced in the Forward *"it sets out principles and factors which should be considered in a level crossing risk assessment"* and at Para. 7. *"to inform the assessment and control of risks at a level crossing"* it then notably does not identify these significant areas of risk. As all individual risks do need to be considered when undertaking level crossing safety assessments I'd expect at least, for the benefit of those not within the rail industry, being presented with an awareness and understanding of all risks, that the Guidance says does need to be assessed.
3. Further borne out against its statement *"and the importance of considering how level crossings are actually used"* the Guidance only slightly touches on, though does not really give consideration on, *how* our crossings are *actually* used – i.e. use by a vulnerable person, human behaviours, leading to accidental human error occurring. Surely this is significant consideration when viewed against the text in Para. 8., which reinforces *"a level crossing is an interface between the highway and the railway and involves a wide range of users and different parties who each have an impact on safety."*
4. A lack of understanding by non-railway stakeholders (including Local Authorities Highway and Rights of Way Officers and the various User Groups; e.g. Ramblers; Local Access Forums, Open Spaces, Sustrans, British Horse Society and others) is borne out under strong criticism at Public Inquiries and Court over Network Rail's perception of risk when promoted in the public arena. These Groups are generally critical that we do not present an accurate assessment of risk on the interface between rail traffic and pedestrians, and it's a hard task to educate them. This Guidance should also provide a basis for them understanding all risk.

5. Para 22. Supports this, in highlighting *"It is essential that decisions and options for level crossing control measures are informed by a suitable and sufficient risk assessment. This should be completed by competent people who have a proper knowledge of the risks and of the application of controls associated with level crossings, as well as a good understanding of user behaviour and their perception of risk."*

Examples of risk types not addressed:

6. Vulnerability of a pedestrian user is an exceptionally high risk category; but the Guidance makes *no mention* of vulnerability in itself, until the Annex B "Glossary" briefly defines a vulnerable user. *Age, sensory and mobility capabilities* are briefly mentioned at Para 18 but certainly does not give an appreciation of the high risk vulnerability raises.
7. Conversely, lower risk attributes are repeatedly highlighted in the text (i.e. sun-glare) suggesting this is a much higher risk consideration and needs more focus.

Suggested inclusions and amendments:

8. In the table under para 22, 'Assess the risks' neds to be clearer in stating *"by each and all of the hazards…"*. This is about deciding how likely it is that someone could be harmed by each of the hazards identified and how serious it could be; but other key risk factors are not included or discussed within the Guidance, such as:
    - No consideration is given for any speed boards or speed restrictions on the approach to a Crossing that will have an effect on train approaches (both in speed and time)?
    - Variation of approaching train speeds – gives different perspective on users, from first sighting of a train.
    - Trains approaching crossings whist accelerating – also gives different perspective on users, from first sighting of a train.
    - Trains approaching crossings whilst decelerating – again, gives different perspective on users, from first sighting of a train.
    - Hidden trains (2 or more lines of rails) – a risk recognized by Planning Inspectors but seldomly referenced in NRAs and certainly not to fully quantify the risk
9. I suggest (if not least as a prompt) a full bulleted list of all potential risk is identified and included into the table, especially where it is not covered elsewhere in the Guidance.
10. Additionally, there is no consideration given to the following issues:
    - Providing Census Details and (meaningful) reporting – recommending more accurate breakdown of user types including the foregoing, and also better breakdown of human behaviours and misuse promoting dangerous activities. Video imagery goes much further than photo stills can, in demonstrating the way level crossings are used, but this is often overlooked. Clear Guidance would help.

- Guidance on calculating sighting distances accurately – especially where short distance sighting is a key risk area. A key component for compounding error when calculating safe crossing times.

11. If not itemised within the table after Para 22., or as a means of reinforcing a listing of all risk, it would help if a new paragraph could be inserted between paras 27. & 28. which specifically states that all risks applicable to the level crossing need to be identified and assessed, to include all applicable factors relating to the physicality of the crossing, train movements and user impact.
12. On paragraph 26., it refers to the transference of risk to another crossing where one is closed. The Guidance should give more consideration to imported risk on the user where the proposal is to close a level crossing and to divert the user onto existing highways. These highway risks are wholly different in comparison to level crossing risk.
13. At Para. 29. it needs to be clear that *"the use of obstacle detection systems on automated carriageway crossings, which check that a level crossing is clear…"* as there are repeated calls at Inquiries to use OD at FP and Bridle crossings. It would be preferable if the text could go further in stating OD systems are not appropriate at FP and Bridle crossings.
14. On CBA, Para 33., it suggests how a disproportionate factor can be calculated – but it does not suggest how the 'benefit' which it is compared against can be calculated.
15. Para 34 talks about *"your knowledge"* which is an arbitrary statement pointing at the reader. I'd suggest as it's not part of the listed principles, *"your"* is deleted.

Suggested amendments to the Principles:

Principle 1. Include in (a) *"…to get a good understanding of who uses the level crossing, and how, and the frequency and pattern of use…"*

(c) *"…e.g. Vulnerable Users and encumbered users, including old and infirm, children alone, groups of users, children in groups, dog-walkers(on or off the lead or more than 1 dog), horse-riders leading or riding a horse, cyclists pushing or riding a bike, motorcyclists, people carrying heavy bags or large objects."*

(g) *"…authorised users of private crossings who ~~operate crossing controls and need~~ have a requirement to brief others on how to use the crossing ~~do so~~ safely…"*

Principle 2. Include in (b) *"…the distraction of mobile phones or headphones, and/or wearing head-obscuring clothing which may affect users' awareness or concentration."*

Principle 3. Include in (b) *"…where the approach routes offer limited visibility of approaching trains."*

Principle 4. Include in (b) further explanatory text of the relative position of the User in relation to the decision point, and what the User can see (i.e. when sat in a car or sat on a wheelchair, against the sighting distances an assessor may assess.

(c) *"… use of physical controls, e.g. fencing and chicanes, vegetation,…"*

Principle 6. Include in (c) *"…the foreseeable actions of different users in a 'second train coming' scenario including where the passing of a first train can wholly obscure or 'hide' the approach and sound of a second approaching train; ensuring adequate visibility along the railway where sighting distances are part of the intended control measures;…"*

(e) *"…e.g. impatience and risk taking behaviour such as attempting to beat/weave-around a closing level crossing barrier or to run out in front of an approaching train especially at MSL controlled crossings with additional warning time added for vulnerable users."*

Principle 7. Include new (b) *"consideration given whether to increase the warning time to give additional time for vulnerable or encumbered users to reach a point of safety after crossing."*

(c) *"consideration given whether to install motion activated cameras to record gate usage where there is a known history of gates being left open after a user has crossed."*

Railway Principle 1. As a matter of fact, (a) bullet point 1 and 3 is not suitable at FP and Bridle crossings. Yet at Inquiry, objectors repeatedly ask for interlocking gates. Can the text be suitably edited?

Railway Principle 2. None of this is suitable consideration for Footpath and bridle crossings, so it should be made clear this is only applicable to controlled crossings.

Railway Principle 6. I'd suggest including text that consirms the gates or barriers at either side of the crossing at User Worked crossings are of the same dimension, and the level crossing deck is at least 6 inches wider at either end (12" in total) than the width of the gates.

Railway Principle 9. Include at (a) *"…or wind noise, and the impact these may have on use of the level crossing especially where there are no protective measures or only whistle board protection."*

(c) is not suitable at the majority of Footpath and Bridle crossings, which are not illuminated. The Guidance should reinforce this, as objectors at Inquiry frequently argue FP and Bridle crossings should be illuminated.

I hope you find the foregoing useful.

Kind regards

Jerry Greenwood
Head of Liability Negotiation

From: Ronnie Gallagher (Network Rail)
Sent: 26 February 2021 16:03
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: PRINCIPLES FOR MANAGING LEVEL CROSSING SAFETY

To whom it may concern:

Thank you for sharing the draft version of the above document. I have not had time to look at the document in detail, however, I feel the new format will be very useful to the level crossing risk and asset management team.

Kind regards

Ronnie Gallagher
Route Level Crossing Manager (South Wales)

ORR Level Crossing Principles Consultation Comments					
No.	**Commenter Name**	**Job Title**	**Page**	**Clause**	**Comment**
1	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	4	Foreword	Question if it is appropriate to detail the crossing numbers as this will date the document over time, asset closures will continue and new assets might be added if mothballed lines are reintroduced for example. Another option is to add, 'at time of publication'.
2	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	4	Foreword	Last sentence can be removed for publication… 'We aim to withdraw RSP7'…
3	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	5	2	Will NB comment be removed prior to final publication?
4	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	7	13	Can we add a comment to reinforce internal collaboration? Whilst it is critical to have effective collaboration across multiple organisations the same approach is also vital within each organisation.
5	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	7	14	Can we add a comment to reinforce highways engagement with the infrastructure owner in cases of road layout changes or changes to traffic control measures?
6	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	8	19	Could simplify the narrative slightly to make it easier on the reader to digest.
7	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	8	20	Bullet point one: could consider replacing 'reluctance to wait for too long' with the industry recognised 'willingness to wait'.
8	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	8	20	Bullet point two is not as clear as it could be and is ambiguous to the reader.
9	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	8/9	20	Bullet point four: 'Where possible, this should be reinforced…' requires greater clarification as to how and when this should be applied.
10	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	9	20	Bullet point five, can you consider rewording to: 'consider whether natural and/or artificial constraints, e.g. fencing on the approach to a crossing, can be used to guide the user to the next action or appropriate decision point'.
11	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	9	22	Can we consider changing the opening sentence to: 'It is essential that decisions and options for level crossing control measures are informed by risk assessments which are suitable and sufficient'.
12	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	10	23	Is there any merit to including a reference to 'tolerable risk' in addition to the good points raised, noting this principle is indicated in the last sentence?
13	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	10	25	The first consideration should always be whether there are reasonably practicable alternatives to a level crossing. This is best considered at the design stage of a new railway…' This is correct but it somewhat dilutes the message of the first sentence for existing crossings, noting this is picked up further in clause 27. Can this be broadened further to include existing crossings in this point too?
14	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	10	26	Spurious comma after the word 'tunnels' which changes the way the sentence is read, can this be removed… 'and we encourage alternatives such as diversions, bridges or tunnels,'.
15	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	11	28	Consider changing first sentence to: 'Using a system risk based approach enables the safety, costs and benefits associated with the level crossing to be compared with the safety, costs and benefits of alternative closure options'.
16	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	11	29	Can we be minded that there remains some limitations with technology for use in the railway environment, costs and safety integrity levels remain challenging, obstacle detection equipment is also a costly option and site suitability needs to be assessed. The important point here is that there is the appropriate balance between the positives of what you have written and the fact it is not as easy as you have written it in practice for wholesale deployment. Not convinced that we have '**significantly** increased the options available'. We are also concerned that local authorities may see this as a means to reject closures when in fact it remains the right thing to do.
17	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	11	30	We are not convinced with this clause and it might require fleshing out. It is correct in terms of control hierarchy but offers limited consideration to design, enhancements and steady state risk management where technical solutions are not provided.

18	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	11	31	We feel that consideration needs be given to reasonable practicability to introduce measures were competing priorities exist. E.g. from our level crossing safety strategy... *'Investment in level crossing safety must also be balanced against other safety risks. Competing priorities may, for example, occur with embankments, structures, track, signalling, through trespass and at stations. Thus, it may not be possible and within funding to immediately implement long-term safety improvements at all level crossings. Where such prioritisation is needed, interim controls will be applied to mitigate risk'.*
19	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	12	33	Further discussion is required before this makes the final cut. Whilst the text does not mandate a GDF to be applied it is suggestive and NR are still working through, in collaboration with ORR, the factors that will be applied to level crossing risk management. At this time we suggest no mention of a GDF of 10 as that really linked to the nuclear industry where there is a catastrophic nuclear incident Second sentence has become too prescriptive, suggest sentence one is retained and the following replaces the HSE criteria: 'This may provide a useful basis for applying gross disproportion factors within level crossing risk assessments'.
20	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	12	35	Suggest net cost is replaced with whole-life cost. Third sentence to be reworded: 'The costs to be included in the CBA should be the whole-life costs to the duty holder of implementing the safety measure'. Forth sentence, consider inclusion of the impact on operational costs within consideration factors.
21	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	12	35	VPF value has been rounded down, suggest the actual figure is quoted.
22	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	13	3 - Heading	Suggest changing the heading to: 'Think like a user'.
23	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	13	3	A level crossing should be safe for the user' - suggest this is removed as the only safe level crossing is a closed one. Even if technology is provided residual risk remains.
24	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	13	User Principle 1 (f)	Unclear about the term race in this context, consider 'cultural experience in regard to railway safety'.
25	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	14	User Principle 2 (c)	Is this a closed asset or a situation where the barriers are lowered? Unclear.
26	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	14	User Principle 2 (f)	Add an example for failures, e.g. barriers fail in the lowered position.
27	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	14	User Principle 2 - general	Could include vulnerable users, carrying objects, dog walkers, elderly, young children, cognitive ability, sensory degradation etc.
28	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	14	User Principle 3 (c)	Suggest changing opening sentence to: 'how, when and where'.
29	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	15	User Principle 4 (a)	Suggest reordering opening sentence to: 'drivers of long, large or slow vehicles or farmers with livestock' to account for the more common use.
30	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	15	User Principle 4 - general comment for section	This reads as though the responsibility solely resides with the infrastructure owner, highways and other stakeholders have a part to play to.
31	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	15	User Principle 5 (c)	Consider moving and including the detail within Railway Principle 9 (b) - page 22.
32	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	16	User Principle 6 (c)	Retain the point about second train coming risk. Insert a new point which considers 'adequate visibility along the railway where distances are part of the intended control measures' as a separate point.

33	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	16	User Principle 6 (d)	Include at the end 'or a train arriving when a user is on the crossing'.
34	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	16	User Principle 6 (e)	Include at the end 'or disregard miniature stop lights and audible warnings'.
35	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	16	User Principle 6 (e)	Consider moving and including the detail within Railway Principle 2 - page 13.
36	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	17	User Principle 7 (e)	Clarity around 'profile' does this include width, hog etc?
37	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	17	User Principle 8 - title & general observation	Applies to this and other titles with 'Ensure' reference. Common understanding is that the term should not be used if it is impracticable to do. There are elements in this principle and others that are within our gift to manage, but others that are not. User behaviour is not something we can 'ensure'.
38	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	17	User Principle 8 - title	Title is unclear as to the content of the bullets below. Can this be simplified, 'Safe crossing operation' for example.
39	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	17	User Principle 9 (b)	Consider including reference to perturbed working.
40	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	18	4 - Opening paragraph	Should the derailment sentence also include reference to large boned livestock?
41	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	18	Railway Principle 1 (a)	Unsure if this section sits here, please elaborate on the meaning.
42	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	18	Railway Principle 1 (b)	Should risk of grounding not feature here?
43	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	19	Railway Principle 3 (a)	Does this need to be more specific to include reference to stopping and non-stopping controls, speed differentials etc?
44	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	20	Railway Principle 4 - heading	This is too long and loses the reader.
45	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	20	Railway Principle 5 (b), (d), & (e)	Suggest consistent language is used throughout, Operator replaces Controller.
46	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	21	Railway Principle 6	Consider including reference to dedicated stopping points (laybys) for large slow moving vehicles and telephone operation. This includes responsibilities on highways to work with the rail industry to facilitate stopping point provision.

47	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	21	Railway Principle 7 (d)	This point does not sit with the title of the principle.
48	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	22	Railway Principle 9 (a)	Suggest change foreseeable weather conditions to 'foreseeable environmental conditions', change fog to 'adverse weather that affects visibility' and change wind noise to 'ambient noise around the level crossing' as per recent research for NR on train horn audibility.
49	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	23	Highway Principle 2 (a)	Approach surface being consistent with level crossing surface, this does not work at user worked field to field crossings for example. Could change to 'approach profiles should be consistent…'
50	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	23	Highway Principle 2 (b)	Impact of construction material on elements such as sun glare - Beech Hill tragedy (a compounding factor - rain then sun). Consider expanding point.
51	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	24	Highway Principle 3 (c)	Ways to change the road layout and features…' suggested change.
52	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	24	Highway Principle 4 (d)	How an at risk vehicle will be managed to prevent an accident, e.g. suitable stopping points/laybys etc'. - suggested change vice grounded vehicle.
53	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	25	Highway Principle 5 (d)	Maintain visibility of the crossing, crossing equipment and signage, e.g.…' - suggested change.
54	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	28	Annex B - Glossary	Suggest crossing controller is changed to crossing operator.
55	Rob Wainwright, Darren Cottrell, Libby Gallacher	Level crossing safety team, Technical Authority, NR	28 / 29	Annex B - Glossary	In some crossing contexts, it may also be appropriate to consider all pedestrians as vulnerable crossing users'. Is this a required statement? Risk assessment should deduce user demographics, risks and hazards based upon individual requirements.
56	Mike Carey	Head of Ergonomics	5	1	The term "user-centred" can be misunderstood, though the intention of having principles that focus of those that use a level crossing is welcomed. "User-centred design" is more than a focus on users, but a process that intrinsically involves analysis and iterative evaluation of designs in use. Whilst we strive to apply these principles in Network Rail, I am not sure that is what you meant to imply. Could I suggest you replace "a user-centred approach" with "an approach which focuses on those who use a level crossing".
57	Mike Carey	Head of Ergonomics	6	8	It would be helpful to mention the crossing controller (signaller in UK mainline rail operations) in this explanation of "whole-system". The focus on the specific user group is very useful, but we are all aware that providing the user with more technology that has then to be managed by a crossing controller may shift risks and hence it is imperative that this is part of the whole system view of those manage level crossing risks. The same comment would also apply, of course, to the maintainer.
58	Mike Carey	Head of Ergonomics	8	17	Whilst it is accepted that design, operational supervision and asset management should detect and design out the opportunity as far as is reasonably practicable "unitended methods of use", it is not clear what is expected in factoring such acts into design risk assessments?

59	Mike Carey	Head of Ergonomics	8	19	The paragraph usefully discusses the importance of a user of a level crossing have a clear and accurate understanding of the crossing state. There are some key aspects of this, that need to be considered, which are not covered elsewhere in the principles. These include: - How the displays, controls and mechanical components of a crossing system contribute to providing the user with clear information on level crossing status, the approach of trains and whether they are able to cross safely - How the crossing equipment operates when in degraded modes of the railway or under failure conditions, such that users do not isunderstand the cues provided and enter the crossing when unsafe to do so - The overall reliability of powered and automated systems, avoiding frequent (right side) failures that can generate lack of trust in routine users, resulting in thenm making dangerous and unsafe assumptions - Minimising routine extended barrier down times prior to a train arriving or after a train has left, that can generate dangerous risk taking behaviours in routine users
60	Mike Carey	Head of Ergonomics	11	30	I assume admistrative controls includes those carried out by crossing controllers when checking a crossing is clear before clearng protection signals or in giving users verbal permission to cross at user-worked level crossings? Similarly, the checks carried at open crossings by tran drivers. Whilst considerable effort is put into the engineering systems and the competence frameworks that support such staff, I would assume you would view within this bracket. Perhaps the content of this section should be expanded to make reference to such "user" groups?
61	Mike Carey	Head of Ergonomics	13	UP1	It would be worth also highlighting routine users of a level crossing, who may have developed assumptions and practices that can underestimate risk, especially when the system is operated in a degraded mode?
62	Mike Carey	Head of Ergonomics	13	UP1 (f)	You mention age, disability, pregnancy and maternity and race as "examples" from the Equality Act, yet the consultation document makes clear that these are the characteristics you are specifically focusing on. There is a danger that this clause could confuse or distract those using the principles as there it is not at all clear how some of the other proected characteristics have any bearing at all on use of level crossing. So could you state "all relevant" protected characteritics and give a further set of examples, including those with restricted vision, impaired hearing, those where English is not their first language etc?
63	Mike Carey	Head of Ergonomics	14	UP3 (c)	It is unclear what you mean by this clause? I assume that is where a user is approaching a crossing and they need to see whether the crossing is open to road traffc or they need to stop? What level crossing controls are you meaning?
64	Mike Carey	Head of Ergonomics	15	UP4 (b)	Understand the attempt to define something generic in terms of "waiting place", but this is unclear. I can see that it might cover where the driver of a long, low or slow vehicle has to stop to call the signaller and the position in front of the gates where others wait or check before crossing. Yet this perhaps needs to be made clearer as this has been interpreted differently by various individuals reading the same clauses.
65	Mike Carey	Head of Ergonomics	15	UP5	This needs to say something about "where" as well as "how and when". It is important that the sequence of warning signs, instructional signs, controls and displays is correctly sequenced on the approach to a level crossing. Otherwise, we have found in design that the user cannot corretly understand what they need to do, when the information they have already passed the instructional sign they are meant to use, or the sign is on the other side of the carriageway. Also, all relevant information, displays and controls must be accessible at each potential "waiting place" to be able to interpret the state of the crossing.
66	Mike Carey	Head of Ergonomics	15	UP5	Should this also consider the information that users need in a degraded state of a crossing, or on what they can do if trapped or stuck on a crossing deck?
67	Mike Carey	Head of Ergonomics	16	UP6	There is no mention in this principle of how decisions are made and conveyed on time to cross on user worked crossings?
68	Mike Carey	Head of Ergonomics	16	UP6 (d)	This principle is about the users being able to clear the crossing area and reach a place of safety prior to the approach of a train. Whilst recognising the need to avoid barriers striking a user, is this is a different kind of hazard (which you have covered elsewhere)? Is it about the avoidance of being struck (that might cause a user to stay on a crossing when they could have exited) rather than being struck that is the point of this principle? If so, this could perhaps be made clearer in the text.
69	Mike Carey	Head of Ergonomics	16	UP7	In new level crossing signage, we no longer talk about "crossing quickly", but "crossing without stopping", given the connotations of the risk of tripping from crossing quickly.
70	Mike Carey	Head of Ergonomics	17	UP (d)	I assume the last paragraph of user principle 9 was intended to be labelled as clause (d). Suggest the word "operator" is replaced by "crossing controller" given that this the term in the glossary you are using to refer to what is normally a signaller or crosssing keeper on GB mainline railways.
71	Mike Carey	Head of Ergonomics	17	UP9 (c)	Was it intentional to limit this principle to just the impact on staff workload and fatigue generated by a level crossing or was this intended to include the potential to include the general level of workload/fatigue of a crossing controller impacting on the safe operation of a crossing?
72	Mike Carey	Head of Ergonomics	18	ction 4 intro pa	Last sentence, suggest adding in reference to livestock, such as "Where this involves a vehicle or livestock there is also the potential for a train to be derailed".

73	Mike Carey	Head of Ergonomics	19	RP2	Should this not also include the use of a visual check by a crossing control prior to providing a movement authority over a level crossing? Whilst automatic detection systems may reduce the risk fo human error, they are not always possible to apply or make a case in terms of cost benefot.
74	Mike Carey	Head of Ergonomics	19	RP2 (a)	Why does this state "high-integrity". The level of integrity of such a system is part of the safety argument and safety case. For example, systems that may aid or supplement a crossing controller in carrying out a visual check may not need the same level of integrity as long as they do not replace the human checking process. It is essential that this wording does not imply or drive expensive engineering that increases the costs of delivery and destroys the business case for widespread deployment. Suggest this is reworded "Automatic system, of sufficiently high integrity, that detects people...".
75	Mike Carey	Head of Ergonomics	19	RP7 (b)	Might be worth adding "lick guards" to the list of measures - which are being added to prevent cattle operating controls that can operate powered gates!
76	Mike Carey	Head of Ergonomics	General		Is there something to be added related to the reslience of the level crossing equuipment to damage or deliberate vandalism?
77	Mike Carey	Head of Ergonomics	General		There is nothimg related to the active monitoring of the state of level crossing asset, especially those elements that are critical for its safe operation, such as lights, barriers and emergency telephones? This is critical, for example, for automatic vehicular crossings that are not directly supervised. For user worked crossings, asset failures may not need a direct alarm presented to the crossing controller, but is essential that any approach to inspecting/detecting/repairing falures on such crossings is appropriate and prevents unsafe conditions for the users.
78	Mike Carey	Head of Ergonomics	General		Is there more to be added on the safe maintenance of level crossing assets, including design to minimise the risks from maintenance on wrong side failures?

From: Liz Parkes (North Yorkshire Moors Railway)
Sent: 23 January 2021 15:42
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Response to consultation on level crossing principles and guidance

Dear Colleague,

Please find below NYMR's response to the consultation on level crossing principles and guidance.

1. Who are you responding as (an individual/for an organisation) and what is your role?

I'm responding for NYMR in my capacity as Head of Operations & Safety

2. Who would use this guidance in your organisation? When and how would it be used?

The guidance will be used by our S&T and Operations personnel when designing, constructing, maintaining, operating and risk assessing level crossings

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

Yes, the risks are covered and there are no obvious gaps. The guidance is sufficiently high level to enable innovative ways of controlling risk

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer.

The guidance will be helpful in ensuring that we have considered all factors, particularly the use of crossings by all sectors of society and the need to ensure equality in accessibility.

5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

We use ORR guidance on competence management and protecting people from trains There isn't an obvious fit with other railway guidance apart from the fact it forms part of the suite of RSP documents.

6. What other information from ORR on level crossings would you find helpful?

We liaise very closely with the Railway Inspectorate on more detailed matters.

7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How

would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?

There won't be any significant impact on our business. We're fully supportive of the guidance and foresee no problems with following it. While not directly relevant, we remain disappointed that the Law Commissions' recommendations to replace the level crossing order process with a risk assessed, collaborative approach have not been adopted, as this would have made it quicker and simpler to make changes.

I hope the above is useful, but please don't hesitate to contact me should you require additional information.

Regards,

Liz Parkes
Head of Operations & Safety
North Yorkshire Moors Railway

PACTS Response to the ORR Consultation on Level Crossing Guidance
February 2021

Introduction

1. The Parliamentary Advisory Council for Transport Safety (PACTS) is a registered charity. It supports the All-Party Parliamentary Group for Transport Safety. Its charitable objective is "To protect human life through the promotion of transport safety for the public benefit". Its aim is to advise and inform members of the House of Commons and of the House of Lords on air, rail and road safety issues. It brings together safety professionals and legislators to identify research-based solutions to transport safety problems having regard to cost, effectiveness, practicability and acceptability.

2. PACTS welcomes this consultation by ORR Level Crossings. The following comments, whilst incorporating comments made by members of PACTS' rail and road safety working parties, should not be read as representing the views of all the organisations that support PACTS.

Over-arching comments

3. In general PACTS supports the proposed document. PACTS is concerned about safety across all transport modes and as such welcomes the collaborative approach to level crossing safety which takes into account the knowledge, experience and needs of all users.

4. Whilst welcoming the principles espoused by this document and accepting the proposed document reflects current legislation, we believe that there are wider issues that nevertheless still need to be addressed through the long overdue modernisation of railway and highway level crossing legislation and regulation; noting the problems identified in the Law Commission's Report are to a significant extent still at large. This would benefit the public and rail users by providing more flexibility for changing and closing level crossings where possible. We urge the ORR to pursue this. Can the ORR confirm what their intention and plan is to progress this?

5. In our opinion it is no longer tenable that safety of users of private crossings depends so much on the primary user instructing all other users and who may; individuals who may not be known to the primary user. This document makes no comments on this fundamental issue and we cannot agree with what might be seen as an implicit acceptance of this situation.

6. We support a more holistic evaluation of risk and this should include for example if it is or becomes difficult to use a crossing (or impossible due to closure) the risks of alternative routes must also be considered and taken into account. All changes to a specific crossing should consider the potential consequences of increased risk elsewhere.

7. The document is silent concerning the issues that may arise from different criteria as to what is reasonably practical as evaluated by the railways and others, in particular those concerned with highway safety. It is unclear how the ORR foresees this should be resolved.

8. In moving away from prescriptive standards, those who are responsible for level crossing safety must be sufficiently experienced and competent in order to properly exercise necessary judgements. PACTS recognises it was this need that gave rise to Network Rail's appointment of Level Crossing Managers. The ORR and all rail operators

who have level crossings on their network (i.e. not just Network Rail) need to ensure they have access to and maintain the necessary competencies and experience and that relevant learning is shared across the rail community. In other words, moving to a risk-based approach comes with additional responsibilities.

9. We were surprised the document does not refer to measures of enforcement of compliant use and ‘education’ of users; both of which can play an important part in the safety of level crossings. And in that context, we question why more level crossings are not fitted with surveillance cameras and prosecutions are not more prominent. It seems that others who should be consulted concerning mitigation of risk should be the police.

10. Detailed Comments

Page 5, para 1: what is meant by the term user-centred approach? Who are the users in the context of these principles?

Page 5 para 2: "Does not place additional burdens on duty holders".... but surely a meaningful duty to collaborate and follow through on commitments is new for both rail and highway duty holders. If not they duty collaborate is meaningless.

Page 5 para 5: is this risk management and collaborative obligation and role on highways duty holders sufficiently clear?

Page 6, para 11 states: ‘....you may also need to take account of other factors for level crossings where there are unusual circumstances’. The ORR might consider maintaining or requiring rail network operators to maintain a more comprehensive data base of solutions used on unusual circumstances so experience can be shared.

Page 7, para 13: this principle is welcomed but how it is going to be followed through into legislation, regulation, funding, budgets, etc. What is the Regulator’s responsibility for review, challenge and oversight?

Page 7, para 14: Consideration also will need to be given to foreseeable future developments taking
account for example of local development plans.

Page 8, para 22:
a) The documents do not make any distinction or give clarity about the absolute difference of acceptable levels of collective and individual risk and it should.
b) In terms of identifying hazards it should also mention consideration of the future hazards e.g. increased usage –see above comment re. page 7

Page 9, para 22: the document rightly mentions review of the effectiveness of controls but gives no
guidance. For example, this should be done at different times of day, lighting and weather conditions and known different usage (e.g. harvest time, when construction is taking place adjacent to the crossing etc.

Page 10, para 23: the example quoted is based on changing rail risk, however what about changing highway and road risk. Where is the onus to proactively identify such circumstances and then assess reasonable practicability? Also, what happens if the risk assessment objectively identifies that more cost-effective control measures should be applied to the highway/private road? What is the obligation to agree, fund and implement?

Page 10, para 24: user education/engagement and enforcement appear to be important foundation building principles that are missing. These are key to safe level crossing use; (see also our comment in over-arching comments above).

Page 10, para 26; this seems to imply the ORR does not support the reinstatement of Level Crossings on reopened railways with the implication that alternatives need to be specified and funded. However, the additional costs of such provisions could make a scheme non-viable and lead to a missed local societal safety, health and sustainability benefits. How would the ORR seek to address this issue?

Page 10, para 27: we believe it is important to mention also the multi-modal evaluation of risks to users presented by the alternative route they might take if the crossing is difficult to use or becomes closed.

Page 11, para 32: again, as per our comment at page 8 para 22 suggests there should be clarity concerning individual and collective risk.

Page 12, para 32: it is our understanding the ‘cost’ was all expressed in ‘currency or money... this para states:

..’ This should be weighed against the cost in money, time and trouble or effort of options to eliminate, reduce, or mitigate risk.’

Our understanding is that you have to value the ‘time and trouble or effort’ in money otherwise it is difficult to evaluate gross disproportion.

Page 12, para 35: mention is made here of the use in assessing health and safety benefits of the "value of preventing a fatality" (VPF). But since the objective must be to prevent or minimise all injuries, not only fatalities, we wonder if reference should also be made here to the use of the value of preventing "fatalities and weighted injuries" (FWIs) in risk assessment?

Page 12 para 35; the savings of the CBA should also mention saving in whole life costs.

Page 13, user principle 1: we propose this needs to recognise users with no/limited understanding of English language.

Page 13, user principle 1(c): other "users with particular characteristics which impact on their safe use of the level crossing" who may be worth mentioning include people walking in groups or processions, and runners in competitive races (both of which are categories of people which have been shown in real incidents to be less sensitive to Level Crossing risks).

Page 13, user principle 1(e): all slow vehicles are likely to be at greater risk, irrespective of whether they are accompanying livestock.

Page 13, user principle 1(g): the safety of private crossings being dependant on a party being having to brief all users on its safe use may no longer be credible and we urge the ORR and railway operators to recognise this and consider other (technical) solutions (see our over-arching comments above).

Page 14, user principle 2: we suggest you somehow identify all terms that are in the Glossary in italics and say so in the introduction e.g. ‘second train coming’.

Also we believe this section should include persons ‘misreading; or misunderstanding what they see or hear due to other physical factors eg lighting, misinterpretation of other physical features eg lights unassociated with the railway, and at the Beech Hill crossing (incident investigated by RAIB) an adjacent telegraph pole looked like a raised crossing boom.

Page 14, user principle 3: how does the ORR expect c) to be properly considered since this is a
complex matter and subject of research?

Page 15, user principle 4: The guidance does not mention the hazard of vehicles with a long distance between its front bumper and driver position and it should. The guidance does not mention the impact of nature of the waiting area on the users ability to hear any audio prompts.

Page 16, user principle 6; (c) should also mention the impact on audio eg train whistle at whistle-boards.

Page 17, user principle 8: (a) reasonable expectation should also be included here e.g. how
reasonable is it to assume/expect that users of a private crossing will always close a gate behind them when they know they will be crossing in the opposite direction after a short time?

Page 21 railway principle 6: consider adding ‘detection of a stranded vehicle’.

Page 21 railway principle 7: use of the phrase "livestock and other large animals, such as horses" invites debate as to whether or not the term livestock embraces horses anyway. We assume it does, but presumably singling them out for special mention eliminates the possibility of doubt.

Page 22 railway principle 8 (d): should this include consideration of self-closing gates?

Page 22, railway principle 9(a) and page 24, highway principle 5(a): you might add snow (whether
falling or lying) to fog and ice in this context.

Page 23, highway principle: we propose the following arrangements might be considered (where the road layout permits):
a) moving the road traffic signals and stop line back from the railway (say 20m+) and creating a yellow box ‘junction ‘ space (this will no doubt require a change in standards) . The current layout creates a temptation for users to "nip through" whilst barriers drop.)
b) further introduce red light detection cameras (as per normal traffic signals) and publicising penalty for red light running to deter others.

Page 23, highway principle 1: should "how users are enabled to communicate with the railway controller in case of emergency" be in this list, or is that simply one of several things that signage can be assumed automatically to cover?

What about advice to consider the road speed limit on approach of crossings that are not easily detected on approach?

Page 23, Move to railway principle: - There should be consideration of the crossing surface and the hazards that creates e.g. uneven rubber units which could cause an accident leaving an abandoned vehicle or injured person obstructing the crossing.

Page 23, highway principle 1(c): even though it is listed later in a glossary, we suggest avoiding the use of technical terms such as OLE without explanation

Page 24, highway principle 5 b): glare needs to take into account sun glare from adjacent buildings
/glass and wet roads etc.

Page 25, highway principle 5: add a) distraction/misinterpretation of other adjacent physical features e.g. the telegraph pole at Beech Hill (see comment concerning p14 above) potentially being misread as the crossing boom and b) maintenance of the environment so that audio prompts are not degraded e.g. business of adjacent roads, buildings between the crossing and the whistle board etc.

Page 28, glossary: the term "second train coming" is better expressed as "another train coming", because on busy routes there can be more than two.

- ends-

Please contact

David G Davies
Executive Director, PACTS
http://www.pacts.org.uk/
Parliamentary Advisory Council for Transport Safety
78 Buckingham Gate, Westminster, London SW1E 6PE

PNFS

Peak & Northern Footpaths Society (est. 1894)

mail@pnfs.org.uk
www.pnfs.org.uk

Reply to:
62 Norwood Road, Stretford, Manchester M32 8PW

ORR Level Crossings Principles consultation
Office of Rail and Road
25 Cabot Square
London E14 4QZ

by email to *LevelCrossingPrinciples@orr.gov.uk*

15 February 2021

Dear Sirs

Consultation on 'Principles for managing level crossing safety' guidance - January 2021

Consultation Questions

1. Who are you responding as (an individual/for an organisation) and what is your role?

This response is made on behalf of the Peak and Northern Footpaths Society, which is a registered charity and has the primary objective of creating, preserving and improving open spaces, public access rights and rights of way (other than for mechanically propelled vehicles). The Society is also a 'specified person' for the service of notices under the Rail Crossing Extinguishment and Diversion Orders Regulations 1993.

I act as a Courts and Inquiries Officer for the Society and would respond to proposals for changes to public rights of way.

2. Who would use this guidance in your organisation? When and how would it be used?

The Society's Courts and Inquiries Officers would consult this guidance when considering proposals to extinguish, divert level crossings, or proposals to make significant changes at a level crossing.

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

[We do not consider ourselves sufficiently qualified to respond to this question.]

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

[Not applicable]

5. *ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?*

   We do not currently use any other railway safety guidance.

6. *What other information from ORR on level crossings would you find helpful?*

   Information and/or guidance as to how railway operators might initiate and conduct assessments and reviews leading to significant changes at level crossings.

7. *(For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?*

   [Not applicable]

Further Responses

These responses focus on the needs of users on foot, but will also be relevant for other users when cycling or horse riding, and we recognise that some vehicular level crossings may form a valuable part of the footpath and bridleway network.

Collaboration

We welcome the recognition that the document is a resource for "*those in the rail industry, traffic authorities and local authorities, such as: … those dealing with access and public rights of way matters*" [page 5, paragraph 5].

We note the emphasis on collaboration with various parties and the need for "*early engagement and consideration of solutions from different perspectives*" [page 7, paragraphs 13-16] and "*Level crossings … are at the interface between the railway and the highway, so require a collaborative approach between those involved*" [page 9, paragraph 21]

We note the statement in respect of proposals to close a level crossing "*There may also be strong local opinions either for or against a level crossing and good communication between the railway, the local authority, and other affected parties such as landowners is vital in these situations.*" [page 11, paragraph 27].

We would wish to see the inclusion in appropriate places in the guidance of recommendations to consult and collaborate with the 'specified persons' for the service of notices under the Rail Crossing Extinguishment and Diversion Orders Regulations 1993 (along with other parties) at an early stage of the process, in order to avoid issues when orders are made.

Principles of prevention

We recognise that level crossings present a safety challenge and create risk to users. Accordingly, we welcome the attention to user safety in the guidance.

However, we are aware that public policy generally supports the provision of active travel and outdoor recreational facilities, and we believe that the railway has a responsibility to support that public policy. We know that the facility to cross the railway at locations convenient to the pubic provides significant public benefits, and believe that level crossings must continue to provide that facility at locations where alternative means of crossing are not practicable or convenient.

We would wish to see recognition of, and appropriate references to, support for active travel and outdoor recreation included in the guidance.

Elimination

We note the statement that "*The first consideration should always be whether there are reasonably practicable alternatives to a level crossing.*" [page10, paragraph 25]

When the elimination of a level crossing is being considered:

- We would have no concern in principle with the replacement of a level crossing with a bridge or tunnel in the same location, provided the needs of all likely users can be accommodated (although we recognise that this may not always be practicable or cost-effective).
- We would have concerns with any proposal that would involve a significant diversion of a way, particularly if this involves a sterile route alongside railway fencing. It needs to be recognised that an acceptable length of diversion for a road or even a cycle route may not be acceptable for users on foot.
- We would have serious concerns with any proposal that would involve a significant increase in the use of a motorable road as part of a diversion route.
- We would expect to have strong objections to the closure of a level crossing (including vehicular crossings in some cases) where no reasonable alternative is provided.

Where the closing of any level crossing is being considered, it would be highly desirable for the whole of the surrounding network of public access to be considered, including both recorded and unrecorded public rights of way, access land, and any other *de jure* and *de facto* public access. In some circumstances it may be possible to make changes to the network some distance from the crossing that would make an alternative crossing point more accessible. We recognise that such changes may be outside the railway's control, but this further emphasises the benefits of consultation and collaboration. To this end, a process equivalent to the Walking, Cycling and Horse-Riding Assessment and Review (WCHAR) process for highways (Design Manual for Roads and Bridges standard GG 142) may be appropriate.

We would wish to see the inclusion in the section of the guidance under Elimination of a recommendation to consider a suitable walking, cycling and horse-hiding assessment and review process before proceeding with any extinguishment and/or diversion proposals.

Yours faithfully

Martin Hampar

Courts and Inquiries Officer

Peak and Northern Footpaths Society

From: Dave Farman (Rail Crossing Safety Consultants Limited)
Sent: 27 January 2021 10:28
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Draft Document Feedback

I was very surprised to see no recommendations for the implementation of fixed CCTV cameras for risk management and enforcement at Level Crossings.

There has been much work done to show evidence from fixed cameras can help reduce the level of non-compliance by road users and pedestrians.

All commissioned MCBOD crossings already have fixed cameras which record the vehicle number plates and many hundreds if not thousands of prosecutions have been successfully processed using this evidence.

These cameras could be implemented at any type of crossing for the purpose of risk management, enforcement and user education purposes.

Given also that, separately, NR have spent many years approving home office certified enforcement cameras for Level Crossings, it is surprising these are not mentioned as a risk management tool.

Intentional dangerous driving events at Level Crossings are very common, more common than anyone would like to admit, due mainly to the lack of consistent evidence, or willingness by NR to collect and process such evidence as standard.

It is my opinion that should CCTV cameras become the norm at Level Crossings, especially AHB's, and all dangerous driving events recorded are processed through the courts, the majority of intentional dangerous driver incidents that are the cause of most catastrophic events would be prevented.

I would urge the ORR to commission an independent study of Level Crossing CCTV evidence and its use as a risk reduction tool, so that this can be considered within the report in future versions.

I would be very happy to assist the ORR in this study.

If you would like further info please let me know.

Dave Farman
Level Crossing Safety Consultant
Rail Crossing Safety Consultants Limited

From: Phil Barrett (Rail Delivery Group)
Sent: 22 February 2021 11:17
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: ORR Level Crossings Principles consultation - RDG

Please find the response to the level Crossings Principles consultation from Rail Delivery Group (RDG) submitted by Phil Barrett Head of Safety and Operations Development.

RDG strongly supports the move from prescriptive arrangements on level crossings to principles.

The introduction does outline the use of Cost Benefit Analysis but it is important that overall costs and benefits to the public and rail users are considered fully when assessing changes to services and levels crossing. Should this be a principle?

In terms of the principles outlined:

- Should the principles include minimising the time a road user is stopped to allow for trains to pass more clearly?
- “User Principle 9: Understand how a level crossing is managed and operated by railway staff” is not clear why a general a user of a level crossing needs to know this, however should be captured elsewhere.

We are not aware that these principles would affect rail businesses apart from improving the arrangements on levels crossing design and management.

All the best

Phil Barrett

Head of Safety and Operations Development I Rail Delivery Group

No.	Question	Response
1.	Who are you responding as (an individual/for an organisation) and what is your role?	On behalf of Ricardo Rail Limited; Senior Technical Lead
2.	Who would use this guidance in your organisation? When and how would it be used?	System safety engineers. Generally to assist in delivering engineering safety management on behalf of clients undertaking renewals of and enhancements to level crossings.
3.	Are the risks associated with all types of level crossings sufficiently and clearly covered?	The reasonably foreseeable risks appear to be covered to a reasonable level of detail.
	Are there gaps in the document that you think need to be addressed?	No.
4.	If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer	Yes. It provides effectively a checklist of issues to be considered.

		It does not accord with the ORR's 'Internal guidance on cost benefit analysis (CBA) in support of safety-related investment decisions' dated February 2016 with respect to consideration of 'gross disproportion'. The guidance on CBA states that where '*the cost is grossly disproportionate to the safety benefit, then it is not reasonably practicable to implement the improvement on safety grounds alone'*. It also states that where '*the cost is more than the monetary value of the safety benefit, duty holders should make a professional judgement'*. That is, it does not state that implementing a safety measure is reasonably practicable **only** when the cost is grossly disproportionate.
5.	ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?	In contrast, the guidance under consultation states in clause 31: *'The Courts have decided that risk control measures should be deemed reasonable unless the cost of the measure is grossly disproportionate when compared to the risk.'* Our understanding is that this position, which has been interpreted from Edwards v National Coal Board, 1949, has been overruled by the Supreme Court in Baker v Quantum, 2011, where Lord Mance concluded that gross disproportion *'represents, in my view, an unjustified gloss on the statutory wording which requires the employer simply to show that he did all that was reasonably practicable'*. The text in clauses 32 and 33 regarding determining factors for gross disproportion deviates further from the ORR's guidance on CBA. The basis for suggesting such a factor should depend on the degree of risk, the potential for significant harm or the exposed group is not clear. We would suggest that when considering proportionality, the key consideration is to take into account the degree of uncertainty in the analysis.

No.	Question	Response
6.	What other information from ORR on level crossings would you find helpful?	None.
7.	(For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?	No commercial impact.

RSSB comments

ORR consultation - New guidance: Principles for managing level crossing safety

Consultation submission date: 26 February 2021

General consultation questions	Comments
Q1 - Who are you responding as and what is your role?	The draft guidance has been considered by RSSB's control, control and communications, human factors and risk analysis experts.
Q2 - Who would use this guidance in your organisation? When and how would it be used?	The guidance would be used as a reference document and reminder of different aspects of level crossing risk that need to be managed / considered. It would be used as and when needed to inform risk assessment, influence standards change and support research and development. It may also be used in response to relevant member / non-member enquiries.
Q3 - Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?	The document considers the railway to be a single entity in terms of the level crossing and the guidance is primarily about the risk to LC users – it does not consider the risk to trains. Given that on the mainline railway, level crossings are provided by an infrastructure manager (Network Rail), the LC user is not the only customer. The train is also a customer of a level crossing system and is also affected by LC risk. The infrastructure manager can be described as the 'service provider' of a 'system' that controls the risk of a collision between a train and a user of a level crossing (the customers). The 'system' (comprising equipment, data and sometimes people), protects customers by implementing functions control the hazard precursors that increase the risk – the risk assessment identifies the hazard precursors and confirms the sufficiency and suitability of the risk the controls. The service provider is responsible for managing the risk to customers and sometimes assigns some of the system functions to third parties where this is appropriate. For example, in some cases the level crossing operator is a train driver or even the LC user. There are further comments below 'comments on draft guidance' that are related to this question.

Q4 - If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer	We do find this guidance helpful and would use the guidance as a reference document to ensure a comprehensive approach.
Q5 - ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossing fit with other railway safety guidance that you use?	Not familiar with other railway safety guidance, cannot comment.
Q6 - What other information from ORR on level crossings would you find helpful?	No additional guidance identified.
Q7 - (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?	The proposed guidance is less restrictive and supports thinking about 'why' hazards occur, encouraging a more open approach to managing risks.

Comments on the draft guidance			**Comments**
Page	**Section**		
6	1 - Introduction Para 10	How to use this document	'A list of factors accompany each principle, these set out how the associated principle can be achieved.' These are lists of factors, or considerations, rather than a description of the means by which the principle is achieved.
8	2 – Level crossing risk assessment Para 18	Human factors in level crossing design	The focus of the section on *HF in level crossing design* appears to focus exclusively on the crossing user. However, should it also acknowledge the need to design for crossing operators and maintainers?
8	2- Level crossing risk assessment Para 19	Human factors in level crossing design	Mental model might be better described as their concept of how something works rather than explanation
8	2 – Level crossing risk assessment Para 20, bullet 2	Human factors in level crossing design	Should the guidance take the opportunity to emphasise the potential for incorrect expectations about the railway, as this has been a factor in a number of LC incidents. For example people who are familiar with a level crossing can build up expectations about the timing of trains, which despite everyone's best efforts, do not always run to timetable.

Comments on the draft guidance			Comments
Page	**Section**		
8	2 – Level crossing risk assessment Para 20, bullet 3	Human factors in level crossing design	Should “simplify the number of tasks” be changed to “simplify and reduce the number of tasks”?
8	2 – Level crossing risk assessment Para 20, bullet 2 and 3	Human factors in level crossing design	‘Understand natural human tendencies’ and ‘utilise users expectations from their knowledge of how the world around them works…’. These are quite a broad but technical topic areas so could benefit from guidance on how LX designers might come to know the information that is useful in this respect. Is the guidance suggesting that part of the consultation with level crossing users should be to understand these things? It might be more. It might be more helpful to provide a list of tendencies (not necessarily exhaustive) to take into account when designing level crossings.
8	2 – Level crossing risk assessment Para 20, bullet 4	Human factors in level crossing design	Should this be clear and *concise*, as users may ignore or skip over instructions if they are too long.
8	2 – Level crossing risk assessment Para 20	Human factors in level crossing design	Some of the principles mention the need to design to allow for recovery from human error, so that negative consequences can be avoided when errors occur. But this is not consistent across all principles and is not mentioned in the considerations set out in Para 20. It might be useful to review all principles with this in mind. Principles identified: User principle 2: Identify foreseeable user behaviours or actions at, or near, a level crossing User principle 6: Provide a sufficient warning for users that a train is approaching to enable them to be in a safe place before a train passes User principle 7: Ensure that users can cross quickly and safely Highway Principle 2: Ensure that highway approach surfaces enable users to cross the level crossing safely

Comments on the draft guidance			Comments
Page	**Section**		
13	3 – Safe for the user	User Principle 1: Understand all foreseeable level crossing users	Are other 'encumbered' users also relevant? E.g. people with luggage (near stations) or pushchairs, persons with restricted mobility?
13	3 – Safe for the user	User Principle 1: Understand all foreseeable level crossing users	Familiar/regular users also should be considered, especially where they may have development the wrong mental model eg always crossing at the same time when a train isn't normally expected or a train rarely appears coupled with a timetable change, performance issues, freight or chartered service means there suddenly is a train present. This applies also applies to highway users.
14	3 – Safe for the user	User Principle 2: Identify foreseeable user behaviours or actions at, or near, a level crossing	As part of 'a' or 'e', is it worth mentioning the length of time that the crossing is closed, as a factor influencing behaviour (eg jumping the lights / weaving around the barriers to avoid waiting).
14	3 – Safe for the user	User Principle 2: Identify foreseeable user behaviours or actions at, or near, a level crossing	Is a) about understanding the situation 'as is' or 'to be'? i.e. is it about considering the information and cues currently provided to warn users at a given crossing, or the information and cues that *could* be provided to improve safety?
14	3 – Safe for the user	User Principle 2: Identify foreseeable user behaviours or actions at, or near, a level crossing	b) The risk is both of reduced awareness/concentration (i.e. cognitive distraction) and also of reducing the audibility of the train horn
14	3 – Safe for the user	User Principle 2: Identify foreseeable user behaviours or actions at, or near, a level crossing	f) There are risks from both wrong side and right side failures. The example given illustrates wrong side failure, but one or more right side failure may also encourage unwanted behaviours and users deciding to cross when they think a crossing has failed, when it hasn't. Should f) also take into account when maintenance is occurring so that users understand whether the crossing operating as usual.
14	3 – Safe for the user	User Principle 2: Identify foreseeable user behaviours or actions at, or near, a level crossing	Should there be some consideration of people behaviour in groups eg one person decides to cross and the others follow without checking. This could be exacerbated at/near a station as well as popular locations eg beach access, fishing club or where activities being undertaken as a group eg cycling races, rambling.

Comments on the draft guidance			Comments
Page	**Section**		
14	3 – Safe for the user	User Principle 2: Identify foreseeable user behaviours or actions at, or near, a level crossing	Although implied, would it be clearer to explicitly state that the user's own capabilities or mode of transport can affect the visibility and audibility of crossing information, warnings and controls, and the complexity they can deal with at the crossing.
15	3 – Safe for the user	User Principle 5: identify the information users require to safely use a level crossing	In item b, 'user needs' also encompasses the effects of their mode of transport – this might not be obvious to readers
15	3 – Safe for the user	User Principle 5: identify the information users require to safely use a level crossing	Should b) note the quality of signaller communication and use of non-rail specific terminology.
16	3 – Safe for the user	User Principle 6: Provide a sufficient warning for users that a trian is approaching to enable them to be in a safe place before a train passes	In item b, is it worth being clear about the risk of one train blocking users from seeing other trains?
16	3 – Safe for the user	User Principle 7: Ensure that users can cross quickly and safely	Could the current wording be taken to mean 'do things to speed people up'? The intent of the principle is probably 'remove things that will slow people down and remember that users will cross at different speeds depending on their own capabilities, mode of transport and a range of situational factors'
17	3 – Safe for the user	User Principle 8: Ensure a level crossing is left in a safe state for future users	Principle 6a mentions that the best option would be to remove reliance on user judgement. Following the same line of thought, would it be best for the crossing to automatically return to a safe state for future users, rather than relying on the user to take action?
17	3 – Safe for the user	User Principle 9: Understand how a level crossing is managed and operated by railway staff	Item a – agree about risk to operators, but should this section more clearly state that crossing design can affect crossing operator performance/errors, which can affect crossing user safety?
17	3 – Safe for the user	User Principle 9: Understand how a level crossing is managed and operated by railway staff	Item b – is it worth thinking more broadly about designing for maintenance? There have in the past been concerns about maintenance crews not having suitable parking locations by the crossing and therefore parking on verges, and affecting other users' sightlines or behaviour. Similarly there have been errors in crossing maintenance.

Comments on the draft guidance			Comments
Page	**Section**		
20	4 – Safe railway	Railway Principle 4: Ensure barriers or railway-controlled gates cannot be re-opened until any train has fully passed over a level crossing, or sufficient time has elapsed to allow any approaching train to come to a stand	Should this take into account the risk of low adhesion and its impact on braking distances? Or include under railway principle 9.
20	4 – Safe railway	Railway Principle 5: Ensure people working on the level crossing are safe	It is difficult to picture for a) and b) what the risks to staff might be/how they would manifest. Could you add some examples?
21	4 – Safe railway	Railway Principle 8: Discourage trespass onto the railway	These are good considerations for design. Enforcement also plays a role in influencing behaviour, so should this be mentioned?
22	4 – Safe railway	Railway Principle 9: Take account of foreseeable environmental conditions	Wind noise is specified, but what about other noise in the environment which could impact on audibility of horns or alarms?
23	5 – Safe highway	Highway Principle 1: Warn users that they are nearing a level crossing by providing information on the highway approaches	Consider the context: complex layouts and distractions in and around the road environment should be considered in designing the information on the approach (eg change in speed limit close to the crossing may draw focus to the speedometer rather than the status of the crossing). We don't want the information to get lost in clutter, but we also don't want to overload drivers and cause dangerous driving. Timeliness of information is important, so that evasive action can be taken in a controlled manner, without the user feeling tempted to 'risk it' over the level crossing. Where road users are expected to take actions in response to any level crossing signs/instructions, there should be a suitable place for them to stop to do so.
23	5 – Safe highway	Highway Principle 2: Ensure that highway approach surfaces enable users to cross the level crossing safely	Also need to support the user in coming to a safe stop before the crossing if necessary, eg through high friction surfaces?
23	5 – Safe highway	Highway Principle 2: Ensure that highway approach surfaces enable users to cross the level crossing safely	This seems to repeat user principle 7. In general there is a fair amount of overlap in the factors to consider in making users safe and making the railway or highway safe – rightly so, but presenting them as distinct sections creates repetition.

Comments on the draft guidance			Comments
Page	**Section**		
23	5 – Safe highway	Highway Principle 2: Ensure that highway approach surfaces enable users to cross the level crossing safely	Should there be some consideration for the maintenance of the highway approach eg potholes, deterioration in road surface, cat eyes, line markings etc that might distract from the crossing status.
24	5 – Safe highway	Highway Principle 5: Take account of the foreseeable environmental conditions on the highway approaches to a level crossing	This seems to repeat railway principle 9. As above.

From: Nick Newton (Shropshire County Council)
Sent: 26 February 2021 13:58
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: safety at level crossings - updated guidance consultation

Dear Sirs

Thank you for the opportunity to comment on the proposed new draft guidance for the safety of level crossings.

In Shropshire we take the safety of rail crossings seriously including walkways and bridleways and regularly review our road/rail crossings on a regular basis. It has been difficult in the past to work closely with network rail to try and improve the safety of such crossings, so we welcome the fact that the new guidance advocates a more collaborative approach in achieving safer crossings from both rail and road perspectives.

We note that the document has moved away the typical layout of various crossings to a more holistic risk based approach. We think that the crossing types should at least be retained on the web for information purposes for reference. This would be useful especially when undertaking the assessments in terms of signing and infrastructure required. We also note however that any guidance on how these risk based so be undertaken are not included in the guidance meaning that the onus is very much on the authority to develop there own risks priority and risk based matrix. This could mean that each road authority does there assessments in different ways. This means that when it comes to prioritising any works there will have been very little consistency when it comes to selection of improvement works.

There is also little guidance on how frequent these assessments should be undertaken. It is assumed that a minimum of 5 years between assessments or if there is significate change in risk i.e. Higher traffic flows or greater train use resulting in longer barrier down time. From a highway perspective barrier downtime has a significant impact on the highway network which can lead to driver frustration and can lead to crossing misuse.

Under the current proposals it is also unclear on which organisation takes on the risk if something is identified in the assessment and not acted on for example. A half barrier crossing has its obvious risks for vehicles and pedestrians to still cross when the lights are active. But it may not be down to the local authority to make the necessary changes. This is something that needs to be considered as which organisation takes the risk if identified in the risk assessment and no changes are made?

More collaboration between the organisations is a good thing and may help both sides gain a better understanding of how the crossings function in terms of technology or whether the crossings are operated remotely.

It would also be useful to know for those crossings that have red light camera how many violations there are. I hope that the greater collaborative working will allow us to share such information. It would be helpful if there was a list of correct emails or

contacts within the guidance. So we actually know which departments deal with what enquiry allowing greater communication between road and rail organisations.

Whilst not directly related to level crossing safety it is also hoped that the greater road / rail collaboration will also come into play with regard to low bridge singing in order to try and avoid bridge strikes as many road signs are attached to network rail structures

Regards
Nick Newton C Eng,FIHE,FCIHT, FSoRSA
Shropshire Council
Traffic Engineer (South)

Section	Paragraph	Observation	Recommendation
2	17	This section does not refer to an important aspect of Human Factors - deliberate violation (the text refers to errors and unintended methods of use)	Add foreseeable types of deliberate violation to the types of human factors to be considered.
2	20	Connected with the second and third bullet point is ensuring, as far as possible, that crossing in an area have a compliant design and interface. For example, if a user is on a walk and confronted with four level crossings, it is helpful if the design and operation is similar - rather than requiring four separate mental models. It is possible that a user has one with a gate remotely locked by an operator (e.g. maglock), one with MSLs, one with Covtec audible warning and one SLL. Having a compliant interface helps build a correct mental model of how to safely negotiate a crossing.	Consider adding text in on the topic of compliant interfaces, methods of operation and signage to help build a correct mental model.
2	23	Very pleased to see the principle that there is the potential for an increase in risk due to operational changes, but the risk needs to be reduced ALARP.	
2	35	Costs of controls does not explicitly mention operational costs, such as requiring an additional person to operate the crossing. The staffing costs can be the dominant factor, so it may be worth adding it in.	Under the costs to be included in a CBA, consider specifically mentioning the operational cost.
2	General	It may be helpful to add in some text on when a risk assessment should be updated. For example, routinely, plus when there are changes to the railway, local developments, the operation or environment. For example, electrification, housing developments, significant timetable changes, line speed changes, rolling stock changes, resignalling or recontrol.	Add in an additional item on when to update the assessment. This is partly covered by paragraph 23, but not completely.

Section	Paragraph	Observation	Recommendation
	29	It may be worth pointing out that whilst new technology mitigates many of the 'traditional' causes of risk and human error, the new technology also introduces new failures modes and degraded methods of work that require to be managed. For example, low costs level crossing warning devices going into 'Dark Mode' or MCD-ODs detecting obstacles/objects when they are not present and going into a failed status.	Suggest adding in text about managing the risk from newly introduced failure modes and error producing conditions of new technology.
	33-35	We strongly endorse the new section on gross disproportion.	
3. Safe for the user	User Principle 3	Bullet point (c) is relevant but does not fit with the section on approaching a level crossing. It fits better with Principle 5, about decision making.	Consider moving (c) to be part of User Principle 5.
3. Safe for the user	Principles as a a concept	Developing the document on the basis of principles is considered a good way forward. A challenge with the principles is that applying them is dependant on whether they are footpath crossings, user worked crossings and public road crossings. This is most acute for the Principles 4 (convenient waiting location) and Principle 3 (users being aware they are approaching a crossing). Where the text mainly relates to one or two of the categories.	Consider having subsections for some of the Principles to cover: Footpath/Bridleway crossings User worked crossings Public road crossings.
3. Safe for the user	User principle 6	The mitigations in (c) do not seem to be appropriate. The main point of the 'second train coming' case is the train that has just passed obscures the view of the second approaching train, and the user crosses behind the first train into the path of the approaching train.	(c) the foreseeable actions of different users in a ‘second train coming’ scenario; ensuring that there is a clear (spoken) warning of a second train
		The last point (e) doesn't seem to fit with this section - a long wait time is more than sufficient, but introduces its own problems. Perhaps the title should be a 'suitable' wait time as that fits in with the concept that it may be too long.	Consider changing the title to 'Suitable' rather than sufficient.

Section	Paragraph	Observation	Recommendation
		A major factor at level crossings is that the warning time is consistent particularly at level crossings, which do not have a full barrier and may be subject to mis-use particularly by pedestrians and cyclists e.g. half barrier and MSL crossings	Change (e) to: the impact of inconsistent or long waiting times on user behaviour, e.g. impatience and risk taking behaviour such as attempting to beat/weave-around a closing level crossing barrier particular at crossing which do not have full barrier protection; where practicable, stopping/non-stopping controls and signals inside the initiation/strike-in point should be considered to give a consistent waring time.
3. Safe for the user	User principle 7	Two issues we have found that impact the crossing duration for user worked crossings are gradient and gate width (when the gate width is very close to the width of agricultural vehicles).	Consider specifically mentioning gradient and crossing/gate width.
3. Safe for the user	User Principle 9	The title of this principle seems to need to go further than the RU understanding how a crossing is operated. The RU should understand the operation well but needs to accommodate that understanding in the management of risk.	Consider changing the title of the principle to go beyond understanding to use that understanding to determine the risk controls and management required.
4. Safe Railway	Railway Principle 1	This principle refers to ensuring the user is not injured by the closure sequence. Hence, it should be in the previous section 'Safe User'. The principle would be better defined along the lines: 'Preventing egress onto the railway and preventing users becoming trapped on the crossing, when there is an approaching train".	Consider retitling the principle

Section	Paragraph	Observation	Recommendation
4. Safe Railway	RP2 (b)	This hazard relates to the SPAD risk. There is more to reducing the SPAD risk than providing a safety overlap e.g. Stowmarket controls reduce the likelihood of seeing a red signal at a station and hence of a SPAD and there is a balance to be struck between SPAD risk and road closure time in terms of placing of signals. The current phrasing may have the unintended consequence of 'requiring' a standard overlap of 50m resulting in long closure times particularly at stations. Long road closure times can encourage mis-use and increase the risk. There is a balance to be struck and this should be recognised.	Change RP2 (b) taking into account observations
4. Safe Railway	Suggested new principle after RP2	There is a balance between highway closure time and SPAD risk (particularly at stations, where the signal may be placed between the platform and the level crossing) so that the dwell time does not add to the highway closure time.	Add new RP after RP2 as there is a balance between placing signals to minimise road closure time and SPAD risk: The design of the level crossing should seek to minimise the disruption to the highway user by minimising road closure times. To help you achieve this, consider, at least, these factors: a) Avoiding using a level crossing solution if the highway closure time is excessive, b) Avoiding excessive road closure times, c) The level of road usage and the congestion that would be imposed by the level crossing, d) The placing of signals so to minimise road closure time, e) The use of stopping/non-stopping controls if a station lies inside the level crossing initiation/strike-in point.

Section	Paragraph	Observation	Recommendation
4. Safe Railway	RP3 (b)	Requirement is 'eliminate any normal, or foreseeable train movements which would require a train to wait on a level crossing;' This seems unrealistic. It is noted that trains stopping over a level crossing is undesirable but there are very many instances where signals are located, which if at red could cause a (long) train to stop over a level crossing. The likelihood/frequency that this takes place is the key thing. If the signal is likely to be at red (e.g. junction protecting signal wit the main line), this is much worse than if it is a plain line signal and only the longest freight trains may stop over the crossing.	Consideration should be given to minimising the likelihood that trains stop across the level crossing rather than 'eliminate'. Obviously stopping across a level crossing is not acceptable for some level crossing types.
4. Safe Railway	RP5	The phrase 'people working on the level crossing are safe' is unclear. Is this the level crossing keeper or maintainers ? (e) Seems overly specific for a principles document. Really the principle is that the level crossing keeper/controller should be safe from the passage of trains.	Address concerns.
4. Safe Railway	RP7	Unclear why this is restricted to concerns to 'large' animals. Also want to prevent sheep and dogs straying onto the railway. Dogs may be pursued by their owners. This has resulted in fatalities in the past.	Remove the word 'large' from in front of 'animals'
5 Safe Highway	HP4	Very similar to RP6. The grounding issue should be dealt with in one location - probably with the highway.	Consolidate RP6 and HP4 into HP4.

Section	Paragraph	Observation	Recommendation
Glossary	Vulnerable crossing users. In some crossing contexts, it may also be appropriate to consider all pedestrians as vulnerable crossing users.	Not clear what is meant	Possibly amend text to e.g. 'In some level crossing contexts, it may be appropriate to assume, as some of the level crossing users are likely to be vulnerable, that the design should be suitable for such users e.g a pedestrian level crossing at a station'.

Consultation questions

We are particularly interested in receiving feedback from those in your organisation who will be using the principles guidance in the future.

1. Who are you responding as (an individual/for an organisation) and what is your role?

Organisation – South Lanarkshire Council, Roads and Transportation Services

2. Who would use this guidance in your organisation? When and how would it be used?

Roads and Transportation staff for reference

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

Risks seem to be well covered by the 'Safe for the User, 'Safe Railway' and 'Safe Highway' principles detailed.

Under 'Safe Highway' the importance of appropriate advanced warning signage and its maintenance is essential, including advance signing for vehicles requiring to avoid any OLE (overhead line equipment).

It is important to understand alternative routes that can/ may be taken by vehicular traffic and the impact that vehicles choosing alternative routes and performing turning manoeuvres have on the wider road network and its safety.

Vegetation maintenance at and on the approaches to level crossing also requires to be proactive. Road markings should also be employed proactively and be well maintained, including stop lines and box junction markings where provided.

Consideration requires to given to the need for high grip surfacing on the approaches to level crossings (assessing approach speeds, collision records, vehicle classifications and carriageway gradients) as well as ensuring safety during winter months e.g. included within winter maintenance schedules.

Where pedestrians are likely to utilise level crossing locations then appropriate audible tones are particularly important as well as provision and maintenance of tactile paving. Increased visual cues may also prove beneficial with a consistency of approach made across locations of similarity. Consideration could be given to pedestrian level lights or a white 'pedestrian' stop line across the carriageway.

With increasing popularity of cycling this should be considered within future planning. Awareness raising of the appropriate methods of using level crossings and where equipment, markings, signing and layouts can support increased safety for cyclists should be continued.

Local PR and media where misuses, near-misses and trespasses are experienced should be supported.

4. If you carry out level crossing risk assessments, would you find this guidance helpful?

Please explain your answer

Not applicable

5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

Not applicable

6. What other information from ORR on level crossings would you find helpful?

Unknown

7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?

Not a business – not applicable.

Date: 19th February 2021
To: Office of Road & Rail
From: Suffolk County Council
Contact: Andrew Woodin Rights of Way and Access Manager
Subject: Consultation on New ORR guidance on Principles of Level Crossing Safety

This is the response from Suffolk County Council to the ORR consultation on the management of level crossings. The county council has considerable experience of working with Network Rail on level crossings on its 5,600km network of public rights of way (PRoW) across the county, from managing requests for temporary closures, to Highways Act 1980 public path orders to full scale Transport and Works Act Orders, including the Anglia Region Network Rail (Suffolk Level Crossing Reduction) Order 2020.

The county council's Rights of Way and Access Manager was part of the working group which published the Memorandum of Understanding between Network Rail, ADEPT, LGA & IPROW, to improve communications between Network Rail and the PRoW profession.

1. ORR Principles for managing level crossing safety

Comments On Principles For Managing Level Crossing Safety.

Page 4. The draft for consultation states the document will be supplemented with case studies, but doesn't ask for examples. The ORR should seek case studies from highway authorities of good practice and where level crossings have not met the needs of users, including on PRoW, or clash with the policies of the authority.

Page 5 para 1.1. The county council is encouraged by the reference to following a user-centred approach.

1.2. The introduction states the document does not place additional burdens on duty holders or prescribe how a level crossing should be designed, operated or maintained. The county council considers it reasonable to introduce new responsibilities on designers, planners and engineers where improvements to level crossings can be made.

Page 7 paras 13 to 16 and elsewhere. The county council welcomes the acknowledgement of the importance of parties working together in the process of level crossing risk assessment. This is consistent with the **Memorandum of Understanding between Network Rail, ADEPT, LGA & IPROW** published in 2019.

Page 9 para 22. The county council agrees it is essential that decisions and options for level crossing control measures are informed by a suitable and sufficient risk assessment. This should include where level crossing entry and exit points are being installed or renewed. In the case of stiles on a PRoW, the county council contends

these are no longer suitable for inclusion as furniture and only gates should be provided. The county council has had defect reports about the design of stiles and dog flaps being installed by Network Rail, including an injury resulting from poor design.

Page 11 para 29. The county council fully supports the use of new technology on level crossings, but has come up against resistance to warning lights, for example, on the grounds of cost and/or technical reasons. **Too often it seems technology is ruled out by Network Rail at an early stage, on grounds of cost or technical reasons. Moreover, mitigating risk at a level crossing can sometimes be as simple and cost effective as improving sight lines by the clearance of vegetation.**

Page 12 paras 33 and 34. The county council would welcome details on how CBA is used to assess the benefits of using PRoW crossing level crossings, where the reason for a journey may be recreational as well as to access services.

Page 13 user principle 1. The county council agrees on the importance of understanding who uses level crossings and would emphasise the importance of (f) assessing users with protected characteristics under the Equality Act 2010, e.g. age, disability, pregnancy, maternity, and race. The guidance should acknowledge that a disability can be hidden, and that a person who can navigate most terrains might still struggle to negotiate a stile.

Page 16 user principle 6 (a). The use of active warning systems in preference to relying on the user to determine whether or not a train is approaching the level crossing is supported, and **this principle should be applied at PRoW level crossings**.

Page 17 user principle 7 (e). Hazards created by the level crossing surface should be extended to include the crossing in entry and exit points. Whilst these points do not directly impact on crossing the railway line themselves any impediment of the user, eg the need to negotiate stiles, will slow the overall crossing time.

Page 18 railway principle 1. The heading of this principle is **Ensure the entry and exit to a level crossing and any closure sequence does not create a risk of injury to users.** As noted above stiles being maintained and replaced by Network Rail do create a risk to users, and the county council has received defect reports to this effect. The policy of most highway authorities in the country will be to remove barriers to access, including always seeking or requiring the replacement of stiles with a gap or gate. Whilst it is accepted gaps at level crossings is not appropriate, there is no reason the principle cannot be extended to this guidance. In respect of (a), stiles should not be considered an acceptable barrier to prevent access to the railway (“by provision of barriers or gates activated or locked by the approach of a train”).

Page 23 safe highway principles. The county council is disappointed the draft for consultation does not include entry and exit furniture for PRoW. For example highway Principle 2: “Ensure that highway approach surfaces enable users to cross

the level crossing safely", should be extended to include approaches and entry and exit points.

Furthermore, overgrowing vegetation should be cut back regularly to ensure sight lines are kept clear.

2. ORR Consultation on Principles for managing level crossing safety guidance

Comments on 'Principles for managing level crossing safety' guidance

The Consultation on 'Principles for managing level crossing safety' guidance asks on page 11 under question 6. "Does the policy relate to an area with known inequalities", and acknowledges there are, including people with restricted mobility and disabilities. The section goes on to note footpath crossings are often only accessible via rural footpaths, which may incorporate features such as stiles or gates, and known inequalities involve being able to reach level crossings due to inappropriate approaches such as poorly maintained footpaths, stiles etc. The last paragraph notes level crossings can also be in some circumstances the only accessible route for people with restricted mobility to cross the railway in that area and that this should be taken into account in any proposal to close a level crossing.

The county council wishes to emphasise the difficulties for people with restricted mobility and disabilities in negotiating stiles at level crossings, and believes strongly gates should be the default option for any new, maintained or replaced PRoW crossings, and that **exceptions should be made only with the agreement of the highway authority**.

On page 11, question 7 of the Consultation on 'Principles for managing level crossing safety' guidance asks "does the policy relate to any equality objectives that have been set by your organisation". The county council's Green Access Strategy has as objective 1.2.2 Make it easy to access the PRoW network: When opportunities arise, remove unnecessary physical and psychological barriers that adversely affect people using the network. This includes removing stiles.

AW/Suffolk County Council
Feb 2021

From: Michelle Armstrong (Surrey County Council)
Sent: 21 January 2021 15:51
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: A anomaly in the literature sent for Consultation

Thought I would point out the CDM Regs were updated in 2015. Docs state 2007 (superseded), which in turn created new Duty holders etc.
Thanks,

Michelle Armstrong
Design Programme Manager
Highway Design & Delivery Team
Environment, Transport & Infrastructure

SYSTRA

Office of Rail and Road
ORR Level Crossing Principles Consultation
25 Cabot Square
London
E14 4QZ

Michael Westwood
Principal Engineer (Level Crossings)

Subject: **ORR Guidance on Level Crossing Safety** Date: **26 February 2021**

Dear Sir or Madam,

In reference to the consultation on the new ORR guidance on Principles of Level Crossing Safety, commencement date of 20 January 2021, please find the responses below in the preferred format stated on the ORR website.

1. **Who are you responding as (an individual/for an organisation) and what is your role?** *This response is on behalf of the SYSTRA UK and Ireland Level Crossings team based in York. My name is Michael Westwood and within the team, I am the Principal Engineer.*
2. **Who would use this guidance in your organisation? When and how would it be used?** *As a dedicated level crossings design team, we have used RSP-7 (and the previous RSPGE 'Blue Book') extensively during the production of Level Crossing Ground Plans, Consultation Drawings, draft Level Crossing Orders and Suitable and Sufficient Level Crossing Risk Assessments. We have also used the previous guidance to assist with level crossing statutory consultation. As the proposed guidance is less prescriptive and is moving towards a holistic risk based approach, the proposed document will ultimately become less of a 'design tool' but will remain useful for identifying and managing risks associated with level crossings. As one of the few dedicated level crossing design teams in the UK, we believe we can already demonstrate a sound understanding of these risks and possible mitigations, hence the new guidance will become less of a 'day-to-day' reference material. However, as an industry where level crossing Ground Plans are sometimes prepared by those 'less experienced' in the field, the new guidance does outline the risk-based thought process required and removes any existing conflicts with Network Rail Standards, although there will ultimately be less focussed design guidance available due to the change in approach. Case studies will become very important, particularly to less experienced level crossing designers.*
3. **Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?** *There now appears to be some areas of level crossing design which are now not as clearly defined as they previously were. For instance, footway widths and distances for advanced warning signage for public vehicular crossings are clearly defined in RSP-7 and are not covered in any other guidance. One of the main risks of the revised risk based approach could be that certain situations will be 'mitigated' rather than removed through design (although admittedly there is a requirement to design out risks under the CDM regulations). For example, footway widths of less than a metre may be used as 'that is all that can fit'. The Equality Act 2010 would lead designers on this subject, but there still remains the possibility of vast differences in application of 'standard' widths throughout the UK. The Traffic Signs Manual Chapter 4 (Warning Signs) refers to RSP-7 specifically which will now not be available. Chapter 5 (Road Markings) states to consult with the ORR.*
4. **If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer.** *The information provided appears to give sufficient guidance for what is to*

be addressed in Suitable and Sufficient Risk Assessments for level crossings, particularly when used in conjunction with the guidance available in Network Rail Standards.

5. **ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?** *As discussed above, as the ORR guidance will become less prescriptive/specific, any existing conflicts with other guidance is likely to be removed. However, there will now be some gaps between the ORR guidance, Network Rails Standards and DfT guidance such as standard footway widths.*
6. **What other information from ORR on level crossings would you find helpful?** *Our Level Crossings team is very interested in the separate guidance for the level crossing order process (which is currently found in RSP-7). It is mentioned on page 5 section 11 of the introductory "Consultation on 'Principles for managing level crossing safety' guidance" document. Also, RSP-7 contains useful guidance on the statutory consultation process which appears to have been removed from the new guidance – will this be provided elsewhere? We will also welcome the real-life examples (case studies) mentioned on the consultation website/document which will support the guidance and illustrate how the principles can be applied in practice at different types of level crossing.*
7. **(For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?** *Having discussed the guidance as a team, we do not feel that these changes, other than those items raised above, will particularly affect our business. We already embrace a strong risk management based approach to design and familiarity with the new guidance will develop as we use it more. As discussed above, if some of the 'gaps', such as footway widths over level crossings, are not filled there is a likelihood that a large number of differing solutions will be used throughout the industry.*

I trust you find the above comments acceptable. If you require any further information, please do not hesitate to contact me.

Yours faithfully,

Michael Westwood
Principal Engineer (Level Crossings)

Enc.

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ORR Level Crossings Principles Consultation
Office of Rail and Road
25 Cabot Square
LONDON
E14 4QZ

26th February 2021
By email to: LevelCrossingPrinciples@orr.gov.uk

Dear
ORR Level Crossings Principles Consultation — Response from The Ramblers

This response is from the Ramblers' Association ("the Ramblers"), a registered charity and company limited by guarantee, founded as a voluntary body in 1935.

The Ramblers

The Ramblers are passionate about protecting the spaces we love to walk and helping everyone, everywhere connect to nature through walking. With nearly 100,000 members, we are Britain's largest walking charity. We are dedicated to looking after paths and green spaces, leading walks, opening new places to explore and encouraging everyone to get outside and discover how walking boosts health and happiness. For 85 years the Ramblers' campaigning has dramatically increased opportunities for the public to enjoy walking and access the outdoors.

Public rights of way and level crossings

Some public rights of way cross railways by means of level crossings for pedestrians (and, in the case of bridleways and byways, for horses and cyclists also): hence, our interest in the matter of safety on level crossings. Ramblers volunteers respond to consultations and take part in public inquiries when Network Rail applies to close a level crossing. Generally, we oppose closures if the proposed diversion is along a busy road, and therefore places walkers at more risk than the level crossing or if the diverted route is too long or much less attractive.

We were involved on behalf of walkers in three large applications by Network Rail under the Transport and Works Act 1992. The Secretary of State for Transport's decisions in the Cambs and Suffolk applications were made late in 2020, and all of our objections were upheld (ie the proposed closures to which we objected were not included in the Secretary of State's order).

For more information – on the Cambs decision

https://www.ramblers.org.uk/news/latest-news/2020/november/victory-for-cambridgeshire-ramblers-as-five-level-crossings-are-saved.aspx

and on the Suffolk decision

https://www.ramblers.org.uk/news/latest-news/2020/december/momentum-grows-as-another-eleven-crossings-are-saved.aspx

The present consultation

We are grateful for this opportunity to comment on the document **Principles for managing level crossing safety**. We are also happy to be involved further.

Q1. Who are you responding as (an individual/for an organisation) and what is your role?

1. This response is on behalf of the Ramblers by me, Eugene Suggett, Senior Policy Officer

Q2. Who would use this guidance in your organisation? When and how would it be used?

2. Leaders of our walks may find some aspects of the document helpful in the planning, reconnoitering and leading of walks. The guidance may also be useful when responding to consultations about future proposals on behalf of walkers and local communities.

Q3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

3.1 It would be better if the paragraphs under "Elimination" better reflected the needs of users of highways, including public footpaths and public bridleways.

3.2 Paragraph 27 speaks of "many factors to be considered", one of them being "the cost of alternatives"; but the effect on users is not mentioned. It is absolutely not acceptable to put users of off-road paths at risk by making them walk instead on vehicular roads with no footways (i.e, no pavements) to them. Whether these are A-roads or "quiet" country lanes, vehicles travel on them at speeds of up to 60mph and more; and to be passed by such vehicles only by inches is a potentially frightening experience likely to deter walking and totally remove the recreational and psychological benefits people derive from doing it, as is the fear of being hit by a vehicle driven by an inattentive driver.

3.3 The "Engineering controls" in paragraph 29 are to be welcomed. Insufficient use or priority is given to these at present. Many level crossings have excellent sight-lines enabling users to see lines clear of trains over long distances, but active warning systems will give over-cautious users extra confidence in such locations and will enhance safety in the places where sight-lines may be less good.

3.4 The section under "Reasonable practicability and decision making" gives us cause for concern (para 32). It seems to us that the calculations here do not take account, in for example determining whether a crossing should be closed, the effect on users' safety if they are then made to walk elsewhere (such as along or across a dangerous road). It is critical that risks are considered in the round - it is an omission that the greater dangers to which users could be subjected should a crossing be closed (eg road-walking) are not factored in here.

Q4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

4. We don't carry out level crossing risk assessments, but it will be helpful where we are consulted on proposals to close level crossings and divert users some other way.

Q5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

5.1 We do not currently use other railway safety guidance. The considerations insofar as they apply to public rights of way are to be welcomed.

5.2 We welcome the suggestion in User Principle 6 ("Provide a sufficient warning for users that a train is approaching …"). While in our experience most crossings have adequate sight-lines, we are aware of examples where a light warns people not to cross because of the imminence of trains and we are of the view that this provision could usefully be extended to the majority of level crossings, as contemplated in User Principle 6(b).

5.3 We make special mention of User Principle 7 ("Ensure that users can cross quickly and safely"), which at (b) very properly highlights a particular danger to the unwary. In some places, the passages by which users enter and exit a pedestrian, etc, level crossing are narrow, or have kissing-gates on them, or both: so allowing the passage of one person at a time. This of course means that only one person at a time can get *off* the crossing. So where a group of users crosses a railway, it is important that nobody starts crossing the line until the exit is clear.

5.4 We welcome user principle 8.

Q6. What other information from ORR on level crossings would you find helpful?

6. This may be a matter more for highway authorities than for the ORR, but long advance warning of planned temporary closures (for maintenance, etc) of rights of way which use level crossings would be very helpful.

Q7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?

7. Not applicable

Yours faithfully

Eugene Suggett
Senior Policy Officer

From: The Ramblers – Dorset Area
Sent: 26 February 2021 14:14
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Consultation on Principles for managing level crossing safety

Dear Sir or Madam,

Here are my comments on the consultation document "Principles for managing level crossing safety".

1. I am responding as Countryside Secretary and Rights of Way Advisor to Dorset Area of the Ramblers (a voluntary position).
2. This document would be used by Ramblers volunteers and staff when considering the condition of public rights of way level crossings (footpaths and bridleways), either because the condition of the crossing was thought to need improvement to increase its safety or because a proposal to close or divert that path had been put forward.
3. The risks associated with all types of crossing are very clearly covered. The language used is very easy to understand. I think that a number of additional points could be included. These are as follows:

<u>Collaboration (paragraphs 13 to 16)</u>

The recognition that "early engagement and consideration of solutions from different perspectives will provide better opportunities for innovation in managing risk" is very warmly welcomed but the document should extend the bodies with which collaboration takes places to cover rights of way user groups (e.g. the Ramblers, the BHS and Open Spaces Society). Regulations governing changes to the rights of way network (Highways Act and Town and Country Planning Act) prescribe these and other organisations to be notified of proposals to change the network so their details can easily be obtained. Parish and town councils should also be involved.

<u>Human factors in level crossing design (paragraphs 17 to 20)</u>

The considerations to be taken into account in level crossing design should include considering usual accompaniments (e.g. dogs, children, buggies, walking-aids, wheelchairs), and the fact that walkers may be travelling in family or even larger groups.

Elimination (Paragraphs 25 to 28)

In paragraph 27, not only the cost and feasibility of alternatives should be considered. The suitability of any alternative route is critical. It has been the case in the past that level crossings have been proposed for closure where the alternative for the public would involve using a country road with no footway and traffic travelling at the national speed limit. The length of the alternative may also be a deterrent to use. The condition and features of an alternative must be considered in the context of the increasing recognition of the value of walking and contact with nature for health and well-being. Again, user groups and parish and town councils need to be involved in discussions.

Safe for the User

Principle 2: Reference should be made to the possibility of dogs off leads accessing crossings and being pursued by owners.

Principle 4: Stiles either side of a crossing point can present difficulties. Whilst having to negotiate a stile does mean that the railway crossing cannot be accessed very quickly, unless they are in very good condition they can present problems. Getting over stiles can present difficulties for many and the time taken to get over a stile may make a difference in acknowledging the approach of a train, a problem exacerbated if a several people are walking together. Stiles at a level crossing should, at the very least, comply with the British Standard for Gaps, Gates and Stiles, with suitable handholds, and steps at an easy-to-use height.

Safe Railway

Principle 7: This principle is about larger animals but consideration should be given to the control of dogs. Making it a requirement for dogs to be kept on leads when using a crossing would limit the possibility of dogs running away along the line. The relevant highway authority could be asked to make an order under section 27 of the Road Traffic Act 1988 to require dogs to be kept on a lead on the relevant section of path. A requirement to keep dogs on leads could also be achieved by way of a Public Space Protection Order.

Safe Highway

Principle 1: On public rights of way a warning notice that a path crosses a railway line on the level could be considered at the last junction before the crossing.

4. This guidance will prove helpful in the circumstances mentioned in (2) above.
5. No comment.
6. No comment.

Yours sincerely

From: Peter Gallagher (The Ramblers – Swindon and North East Wiltshire Group)
Sent: 24 February 2021 14:24
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Principles for Managing Level Crossing Safety

I am responding to your consultation on the above draft document.

Q1. Who are you responding as (an individual/for an organisation) and what is your role?

A1. I am a volunteer footpaths officer with The Ramblers, responsible among other things for considering and responding to proposals by Network Rail to close level crossings affecting PRoWs. Sections of the London to Bristol and South Wales electrified main line pass through the area which I cover, as well as part of the Swindon to Gloucester line. There is also a section of heritage railway.

Q2. Who would use this guidance in your organisation? When and how would it be used?

A2. We would not use the guidance directly but it is helpful to know what it is.

Q3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

A3. Although, as the glossary correctly states, “highway” includes a footpath or bridleway, the Highway Principles do not adequately consider non-motorised users. For these users the surface of the crossing itself is very important. For example, there are some footpath crossings (not in my area) where there is no deck of any kind and walkers have to cross on the ballast. This is likely to increase crossing time and presents a greater risk of a person tripping or falling.

The remaining questions are not relevant to my organisation.

Regards

Peter Gallagher
Footpaths and Walking Environment Officer
Swindon and North East Wiltshire Group
The Ramblers

From: Parker Joanne
Sent: 12 April 2021 16:00
To: ROGS <ROGS@orr.gov.uk>
Subject: ORR principles for managing level crossings

Good afternoon

Firstly may I apologise on behalf of TfL for our lateness in submitting this comment.

I received the comment late and thought you would be interested to read it.

I have spoken to our Professional Head of Rolling Stock who said that It would be useful to seek clarification as to whether these principles apply in full to level crossings that are within rolling stock depots where (a) railway vehicles operate at very low speeds (17kph max) and road users are required to operate a low speeds too, and (b) where other very restrictive controls are already in place, for example, where the level crossing barriers are padlocked in the closed position to segregate a part of the depot (e.g. a test track or access to an underfloor wheel lathe area) and special processes are used to control access?

We have 14 or so such manually operated level crossings in our LU depots and one remotely controlled level crossing at Neasden Depot on the main access road so a clarification would be useful.

If you could get back to me it would be very much appreciated.

Kind regards

Joanne Parker | HSE Manager | Management Systems Team

From: Mark Ashmore (UKTram)
Sent: 26 February 2021 15:13
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: New Draft ORR Guidance “PRINCIPLES FOR MANAGING LEVEL CROSSING SAFETY

To Whom it may concern.

Following review the new draft ORR guidance **“PRINCIPLES FOR MANAGING LEVEL CROSSING SAFETY”** I can confirm that the Light Rail Safety and Standards Board (LRSSB) has no comments associated to the new draft guidance.

Kind regards

Mark Ashmore
Safety and Assurance Manager

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Viewpoint
Boxley Road
Maidstone
Kent
ME14 2DZ

18TH February 2021

CONSULTATION RESPONSE ON PROPOSED REVISED LEVEL CROSSING GUIDANCE

To whom it may concern,

Please find Victa Railfreight Ltd's response to the ORR consultation regarding "Principles for managing level crossing safety" guidance.

To provide some context, Victa Railfreight Ltd has been in existence since 1995. As well as holding a UK main line train operators' licence, we provide operational and support services to a range of Freight End User customers, many of whom have level crossings within and or leading to their facilities. Additionally, since the employment of Matt Green in 2019, Victa Railfreight has been supporting the heritage railway sector by way of consultancy services and it is in the context of these support activities that we respond to this consultation.

If you should like to discuss our consultation responses further do please let us know. We would be delighted to share our thoughts with yourselves.

Yours faithfully

Matt Green FIRO
Projects and Support Services Specialist
Victa Railfreight Ltd

Consultation Questions

1. Who are you responding as (an individual/for an organisation) and what is your role?

I am providing a response as both an individual and on behalf of Victa Railfreight Ltd. Victa Railfreight Ltd provides support to freight end users and the heritage sector. This support includes consultancy services including level crossing risk assessment.

Within Victa Railfreight I am employed as "Projects and Support Services Specialist" a role I have filled since 2019. Prior to that I was employed in the heritage sector firstly working for the Kent & East Sussex Railway and latterly Swanage Railway.

Our current client base has a number of different level crossing types on the approach to or within their facility. Crossings may or may not have public access. Within the heritage sector I have direct experience as a driver and crossing keeper operating manual gates, and AOCL type crossings, as well as undertaking level crossing risk assessment on open, footpath, UWC, UWC(T), AOCL, MCB and MG type crossings.

2. Who would use this guidance in your organisation? When and how would it be used?

Typically, this guidance would be used by those persons tasked with either developing standards, developing level crossing risk assessment templates, undertaking level crossing risk assessment or where they are providing advice to clients through our consultancy services. It is not uncommon for us to recommend clients visit the ORR website in order to download a copy of RSP 7 so they can gain a basic understanding of the crossing types and their responsibilities for the management of level crossing risk.

It is our experience that historically access to standards in both the freight end user and heritage sectors for the design and management of level crossings, particularly unprotected crossings has been limited. Where access has been possible, for example Network Rail's narrative type level crossing risk assessment for passive level crossings, this has not always been deemed appropriate due to a lack of access to the risk assessment methodology and limited access to the whole process, particularly with regards to calculating warning times for trains operating below 20mph. To that extent we have relied extensively on the content of RSPG 2E and latterly RSP 7 for information regarding calculating the warning times for the approach of a train at level crossings such as Open, UWC and footpath crossings, especially where the crossings are of an acute skew angle. With the proposed guidance stripping out this detail and acting seemingly at a higher level continued reliance will be placed on this historic guidance in lieu of any other detailed reference material. This is not to say that RSP 7 or RSPG 2E are adopted as standards, rather to say that standards are developed based on the detailed requirements contained within this historic ORR guidance.

At its lowest level we have worked with and continue to work with a number of clients where their understanding of the risks that they are responsible for has been somewhat limited. We have on numerous occasions directed clients towards RSP 7 and on occasion RSPG 2E where the clients can access the useful charts, tables and graphics describing the different crossing types. From this we have developed proportionate standards suitable for the completion of level crossing risk assessment. This process already looks to ascertain the users of the crossing,

their specific needs and considers human factors, particularly where low train speeds potentially increase risk taking behaviour.

We applaud the “whole-system” approach, and the focus on elimination through closure of level crossings where this is possible. We also appreciate the greater focus on understanding the users, their needs and human factors. As our experiences have shown, it’s not uncommon to find level crossing risk assessment focussed purely on the task of operating the crossing from a rail perspective.

We feel that the revised guidance assumes a level of prior knowledge that is not always present and the loss of RSP 7 will make obtaining this level of knowledge more difficult. Especially if greater reliance is placed on a dispersed set of revised internal guidance documents, rather than a concise single source document.

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

The proposed guidance increases system risk by assuming that individuals responsible for level crossing risk management either have a comprehensive understanding of the basics of level crossings or have access to suitable standards providing such information. For example, RSPG 2E starts with a flow chart and table providing a basic description of each crossing type, and RSP 7 includes handy graphics showing the equipment typically found at each crossing type. RSP 7 also provides a description of the various types of crossing that may be found. Seemingly the proposed guidance has assumed who the users of the guidance will be and not considered all those who may need access to the guidance, therefore potentially those most at need have been excluded due to a lack of proportionate and clear guidance.

Additionally, the introductory text within the new guidance goes so far as to potentially exclude level crossings within rail freight facilities as it could be interpreted that these level crossings are neither mainline, heritage or metro and therefore the principles are disapplied. A number of rail freight facilities in the UK have level crossings over the public highway either within the facility or on a connecting branch line. The guidance is not clear if these level crossings are in scope or not as a result.

My experiences within the heritage and rail freight sectors working with freight end users has shown that undertakings with responsibility for level crossing risk management vary significantly in their understanding of that responsibility and the expectations placed upon them. As sectors featuring large numbers of unprotected crossings and often limited access to standards and guidance the loss of RSP 7 and RSPG 2E will potentially see an increase in risk, or perhaps worse an over reliance on historic guidance documents in lieu of access to any other standard for activities such as determining warning times for example.

It is also a shame that the ORR have considered it appropriate to break up the present “one stop shop” arrangement by removing the guidance on level crossing orders and focussing more heavily on the internal guidance documents available on the ORR website. Many of these guidance notes are out of date and lack credibility at the lowest level by including telephone contact details for the switch board at Kemble street and the now defunct rail

regulator web addresses. It is noted that the ORR have acknowledged that these are to be updated.

Highway principle 1 assumes undertakings are aware of the existence of Acts, Regulations and guidance such as the Level Crossing Act 1983, the Private Crossing signs and Barriers Regulations 1996 and the Traffic Signs Manuals to name but a few. By not being as prescriptive as in previous iterations the guidance could see undertakings breaking one or more of the Traffic Signs Golden Rules of standardising of traffic signs and reducing sign clutter. It must be considered that at certain locations such as ports the port authority is often the highway authority and therefore should be encouraged to standardise on the signage and equipment found by users of the crossings. It is possible that those controlling the change management processes or the highway authority in this instance may not be conversant with the Traffic Signs Manuals. It is possible that non-standard equipment could be installed due to a lack of clarity on what may be required. This is especially so where no level crossing order is required through lack of public access despite high volumes of HGV traffic.

Where an understanding of the Traffic Signs Manuals is present it should be noted that the Traffic Signs Manual Chapter 6 – Traffic Control in section 42.1.3 states that advice on the use of wig-wag signals at level crossings are contained within guidance produced by the ORR. In the current iteration, the Traffic Signs Manual Chapter 6 references RSP7. It is noted that the Traffic Signs Manual incorrectly states that in this instance these Dia. 3014 signals are the responsibility of Network Rail where this is not always the case. However, the key point here perhaps is that with the proposed guidance organisations who do not have access to Network Rail standards would not necessarily have access to guidance on the placement of wig wag type signals unless the ORR provides separate guidance on these signs and signals, save for where it is stated in any Level Crossing Order. Likewise, Traffic Signs Manual Chapter 4/5 provides information on the warning signs and road markings provided on the approach to a level crossing. Without a certain level of knowledge undertakings maintaining existing crossings may not be aware of these prescribed signs despite this guidance being referred to 7 times in RSP 7 previously.

Highway principle one notes in bullet (b) that signage should be maintained but is not explicit to say that road markings should equally be so treated. Nor is this bullet explicit to say signage should be sufficiently illuminated particularly where Dia. 3014 signs are used where older units may still use filament type lamps.

The revised guidance is also vague with regards to ongoing periodic assessment of risk assessment and asset condition monitoring to ensure site conditions do not alter the risk profile to the user. While the revised guidance touches on maintenance costs as part of the cost benefit analysis the guidance is otherwise silent on monitoring and maintenance activities with limited exceptions such as Principle 1, bullet (b), Principle 5, bullet (d), Principle 6, bullet (c), and, Principle 9, bullet (b).

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

To some extent I would find this guidance useful, however as is the case currently with RSP7, I may well use "the best bits" of RSPG 2E and RSP 7 in order to develop a risk assessment process appropriate to the types of crossings being assessed in order to ensure level crossing risk assessments are suitable and sufficient. Experiences particularly with assessing warning times for UWCs has seen considerable draw on both RSPG 2E and RSP 7. The omission of this information in the proposed guidance along with a lack of certainty on access to standards adopted by the mainline railway will mean that RSPG 2E and RSP 7 will continue to be used for some time.

My previous experiences within the heritage sector in various leadership roles has seen me push risk assessors towards greater understanding of the users of all types of crossings in order to ensure their needs are met and all risks are as low as is reasonably practicable. The new guidance regarding understanding crossing users would have provided a useful section to RSP 7.

The revised guidance is good at getting the risk assessor to consider what they should be looking for, what the guidance lacks is the detail of what is acceptable or not. Therefore, it is not likely that a risk assessor would have with them a copy of the revised guidance when determining the suitability of controls and equipment located at the crossing as this would have to be enclosed within an updated standard for the assessment of level crossing risk.

5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

In my normal day to role within the freight end user community and the heritage sector I am often directing clients, managers and colleagues to the ORR website in order to refer to ORR guidance. I use RSP 1 extensively for example. RSP 1 is far more prescriptive in terms of requirements than the proposed level crossing guidance and is of course supported by the ORR publication Railway Safety Publication number 4. The structure of the proposed level crossing guidance making reference to Internal guidance notes seems to make navigation of the requirements more challenging, greatly increasing the likelihood of a key piece of guidance being missed. The increase in number of publications for the ORR to manage is also apparently burdensome given the current internal guidance notes on level crossings containing links to the www.rail-reg.gov.uk website. A website no longer accessible and the ORR switchboard for Kemble street.

6. What other information from ORR on level crossings would you find helpful?

Access to easy to understand guidance on the different crossing types.

Noting that the Private Crossings Signs and Barriers Regulations 1996 has been subject to an update, greater advice on permitted variants of signage that can be provided at UWCs would be appreciated. I was working on a scheme where we wanted to separate the instructions for operating the gates from the Stop, Look, Listen instructions in order to prevent road vehicles from stopping on the crossing while providing signage at the decision points. The Regulations as written were too restrictive with regards to permitted variations.

Reinstate advice on calculating warning times, decision points, etc and general conditions with regards to crossing users particularly where users are required to use uncontrolled crossings.

7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?

Victa Railfreight will be required to update level crossing risk assessment forms and processes to reflect the proposed guidance. It is likely that existing procedures will see little change save perhaps greater consideration of the crossing users profile and needs.

Subject to the revised additional ORR information guidance documents on level crossings and their suitability we may consider developing guides covering the types of level crossings and undertakings responsibilities to provide the underpinning knowledge now removed from the proposed guidance that was hitherto in place.

-END-

From: Gafoor Din (Warwickshire County Council)
Sent: 16 February 2021 08:17
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Consultation on new draft guidance "PRINCIPLES FOR MANAGING LEVEL CROSSING SAFETY"

Dear Sir/Madam

With regards to the above consultation, it is not clear from the information that is provided who is and will be responsible for the design, installation and maintenance of the asset? Is this a share responsibility between the Network Rail and Local Highways Authorities?

Kind regards

Gafoor Din
Section Manager for Traffic Control and Information Systems | Engineering Design Services | Environment Services
Warwickshire County Council

From: Gafoor Din (Warwickshire County Council)
Sent: 26 February 2021 15:27
To: Level Crossing Principles <LevelCrossingPrinciples@orr.gov.uk>
Subject: Consultation on new draft guidance "PRINCIPLES FOR MANAGING LEVEL CROSSING SAFETY"

Dear Sir/Madam

Thank for the opportunity to comment on the above, please see below my feedback to your questions.

1. **Who are you responding as (an individual/for an organisation) and what is your role?**

On behalf of Warwickshire County Council – Highway Authority; responsible for road safety in the County.

2. **Who would use this guidance in your organisation? When and how would it be used?**

Road Safety Auditors, they will ensure that any new Level Crossings that are installed in the County comply with the proposed guidance note. Also, existing sites could be considered in line with the proposed guidance note if there is a safety issue at these sites. Also, Highway Maintenance Engineers who will appreciate

3. **Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?**

If the Risk Assessments and collaborative approach is taken than the risks are minimal. However, this relies upon the Project Manager consulting all relevant stakeholders and implementing the recommendations if appropriate.

4. **If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer**

Yes, this ensure that at a national level, anyone involved with the prelim design, consultation, detail design, procurement, inspection, maintenance, etc (whole life cycle) are complying to the same guidance note.

5. **ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?**

I have limited experience with the other guidance.

6. **What other information from ORR on level crossings would you find helpful?**

Contact details of who is responsible for all the assets associated with the Level Crossing and their specific responsibilities; this information should easily be accessible to all.

7. **(For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?**

We will need to know where the additional funding will come from regarding the training of officers and any upgrades that may be required to existing Level Crossings and their associated maintenance and inspections costs. Currently, the revenue budget from Central Government is very limited to maintain the existing whole highway infrastructure in the County and the proposed changes will provide addition burden to this finite revenue budget.

Please feel free to contact me if required.

Kind regards

Gafoor Din
Section Manager for Traffic Control and Information Systems | Engineering Design Services | Environment Services
Warwickshire County Council

Principles for managing level crossing safety: ORR Consultation January 2021

1. Who are you responding as (an individual/for an organisation) and what is your role?

I am the Safety & Operations Director for the West Somerset Railway PLC

2. Who would use this guidance in your organisation? When and how would it be used?

The information will be used by various functions in the organisation, not limited to operations, safety and standards, and infrastructure. The guidance will be reviewed against our existing safety management system and level crossing risk assessment, as well as risk assessment process. The purpose being to ensure that we incorporate any new guidance where reasonably practicable and we will set out a timescale for compliance.

3. Are the risks associated with all types of level crossings sufficiently and clearly covered? Are there gaps in the document that you think need to be addressed?

The risks are sufficiently and clearly covered, but the risks read as though they are written for a Railway Undertaking that operates on a national Infrastructure Provider, at speeds in excess of 25mph. The risk profile of a heritage steam railway such as the West Somerset Railway PLC is similar, but there are subtle differences and note however good our safety management system and competency management system is, by their nature heritage railways have a different risk profile, and risk assessments should reflect this.

4. If you carry out level crossing risk assessments, would you find this guidance helpful? Please explain your answer

The guidance is helpful. This is because the methodology and rationale is easy to understand and the principles are logical. A risk assessment model incorporating all factors for a user to pick up and work with by inputting their data would've been helpful, so that there was a datum of risk level and knowledge of risk using an identical methodology. This will be particularly helpful for heritage railways, rather than the level crossings under the auspices of a national Infrastructure Provider.

5. ORR has published a number of principles-based guidance on various topics. How do the principles in this level crossings guidance fit with other railway safety guidance that you use?

We are currently finalising review of our safety management system, so will use the consultation document to inform our documentation and risk management.

6. What other information from ORR on level crossings would you find helpful?

A risk assessment model/toolkit, so that heritage railways in particular know that there is a minimum level of risk management attainment to deliver, rather than it being left to an individual heritage railway to assess its' own risk and make a decision on their own risk profile. Many heritage lines are not blessed with the resources to make professional choices, and will simply make lowest cost choices without the contextual or professional knowledge that the bigger heritage lines can either budget to afford to

buy in or have volunteers with the professional skills available. If a mandatory minimum is set out via a recognised risk assessment model there is no excuse for non-compliance. Additionally, the risk assessment model/toolkit should be capable of completion by a reasonably competent volunteer or employee with a clear set of requirements for that level crossing arising as an output.

7. (For businesses only, not including public bodies) We are required to review the impact of any regulatory changes, including guidance, on businesses. How would the proposed guidance impact on your business in terms of familiarisation and any changes to your processes?

As a heritage organisation largely dependent on volunteers, donations and our fare box we will welcome a grant from government to enable us to cover the cost on an ongoing basis if we make any alterations to our railway not limited to infrastructure, systems, processes, training that any new regulatory changes promulgate. This is in effect 'Network Change' for a heritage railway and if changes to our level crossings are mandated, then it is axiomatic there is government financial support for heritage lines to make them.

-end-