

CD 7.19 -Summary of Level Crossing Policy and Strategy Proof of Evidence

TRANSPORT AND WORKS ACT 1992 TRANSPORT AND WORKS (INQUIRIES PROCEDURES) RULES 2004

NETWORK RAIL (LEEDS TO MICKLEFIELD ENHANCEMENTS) ORDER

LEVEL CROSSING POLICY & STRATEGY PROOF OF EVIDENCE

OF
JERRY GREENWOOD

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Personal Details

- 1.1 I am Jerry Greenwood, Head of Liability Negotiation for Network Rail Infrastructure Limited ("Network Rail"), based at The Quadrant, Elder Gate, Milton Keynes Central, Buckinghamshire, MK9 1EN. I have been employed by Network Rail (previously, Railtrack and British Rail) since 1980.
- 1.2 My role, as Professional Head for this activity, is to direct the production of policy and technical strategy for Network Rail and advise on and its application across the business that arises from railway legislation and on other legislation (including the Transport & Works Act 1990) which also impacts on Network Rail's activities. This includes the determination of Network Rail's statutory, common law and contractual responsibilities specifically relating to its land and infrastructure and advising on our duties to adjoining landowners and occupiers, local highway authorities and other stakeholders.
- 1.3 Insofar as is relevant to this matter, this includes the impact the Order will have on the operational railway outside the scope of the TRU Project but as a consequence of that Project, and in particular, to the operation of level crossings, the mitigation of risk to the public who would use them, and of operational inefficiency that the increase of risk at these level crossings will impose on the wider railway network.
- 1.4 By profession, I am a Senior Manager. I am a member of the Institute of Public Rights of Way and Access Management (IPROW) and was formerly a member of the Royal Institute of Chartered Surveyors (RICS). I hold a Higher National Diploma in Minerals Surveying.

2. Scope of Evidence

- 2.1 My proof of evidence provides a high-level discussion of Network Rail's support for the Network Rail (Leeds to Micklefield Enhancements) Order ("the Order") which Network Rail Infrastructure Limited ("Network Rail") has applied for that, if made would along with other powers authorise Network Rail to close 5 public right of way Level Crossings ("the Level Crossings").
- 2.2 It introduces, and should be read alongside, the proofs of evidence of Andrew Cunningham (Route Level Crossing Manager), Suzanne Bedford (Liability Negotiations Manager) and Michael Westwood (Principal Engineer, Level Crossings at Systra) in relation to the Level Crossings.
- 2.3 My evidence speaks to Network Rail's duty under statute and the policy and technical strategy arising from that duty, relating to its obligations under key health and safety legislation and its application within the business, policy and strategy relating to the approach in mitigation of risk at level crossings (including optioneering) that the TRU Project would otherwise import; and addressing matters relevant to Matters 1, 4 and 6 in the Statement of Matters.
- 2.4 My evidence also outlines some instructive comparatives from other level crossings (and corresponding decisions of Inspectors) as these relate to consideration of both safety-related expediency issues, risk mitigation and operational efficiency, that in turn touch upon Network Rail policy.

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2.5 This proof of evidence excludes consideration of the wider powers sought under the Order, including land acquisition for temporary or permanent works, planning matters and the development of adjoining land, or of the 'on the ground' assessment of safety risk at each of the Level Crossings.

3. Statutorily Reinforced Network Licence Duties and Responsibilities

- 3.1 Network Rail is a regulated statutory undertaker. As the operator and owner of the national rail infrastructure Network Rail has a fundamental role to play in promoting railway safety and also improving railway performance and efficiency.
- 3.2 Network Rail has clear statutory duties and responsibilities to both ensure safety on the railway and the ongoing improvement of operational performance and efficiency. The statutory framework for regulating the railways in Great Britain includes The Railways Act 1993 (as amended), The Transport Act 2000, The Railways and Transport Safety Act 2003 and the Railways Act 2005. The 1993 Act established the Rail Regulator under the Strategic Rail Authority, now the Office of Rail and Road (the ORR).

Public Safety

- 3.3 Safety is at the very heart of Network Rail's national operational strategy; as a regulated statutory undertaker Network Rail has a statutorily prescribed, duty and key responsibility to promote safety, which also encompasses all those who enter onto railway operational land, and that includes level crossings.
- 3.4 The TRU Upgrade which the Order would enable, if made without incorporating the closure of the Level Crossings will import a higher level of risk to each, through the electrification of the line and the introduction of more services, with longer and quieter trains, necessitating this imported risk to be mitigated, so far as is reasonably practical (SFAIRP). As the Department of Transport and ORR mandate, Network Rail has a prescribed duty of care to promote public user safety of level crossings, and to avoid unacceptable hazards to those who would use them.
- 3.5 In terms of public safety, if a level crossing cannot reasonably be made safe for continued public use, that would be fundamentally incompatible with various duties and responsibilities of Network Rail as provided under the Railways Act 1993 (including section 117) and Part 1 of the Health and Safety at Work Act 1974 (sections 1-3), whereby Network Rail is responsible for the health, safety and welfare of persons from risks to health or safety in connection with its railway undertaking and railway functions.
- 3.6 In addition, as well as a responsibility for those who use them, Network Rail additionally has a duty to those who may fail to comply with warning signage not to trespass on railway land, or deliberately misuses, or may inadvertently misuse a level crossing through inadvertent human error.
- 3.7 These duties and responsibilities, as well as administrative sanctions which may be imposed against Network Rail, are also reinforced by various criminal law and civil law sanctions exercisable against both the user and against Network Rail. Indeed, Network Rail has previously been prosecuted where it has failed in this respect, resulting in injury or death to a user of level crossings.

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3.8 Section 117 of the 1993 Act provides:

Railway safety:

"117 Safety of railways and other guided transport systems.

- (1) Part 1 of the Health and Safety at Work etc. Act 1974 ("the 1974 Act") shall have effect as if the provisions mentioned in subsection (4) below (which relate to the proper construction and safe operation of certain transport systems, and of the vehicles used on those systems, and the protection of railway employees or the general public from personal injury and other risks arising therefrom):
 - (a) were existing statutory provisions, within the meaning of that Part; and
 - (b) in the case of the enactments mentioned in paragraphs (a) to (m) of that subsection, were specified in the third column of Schedule 1 to that Act.
- (2) If to any extent they would not do so apart from this subsection, the general purposes of Part 1 of the 1974 Act shall include:
 - (a) securing the proper construction and safe operation of transport systems to which this section applies, and of any locomotives, rolling stock or other vehicles used, or to be used, on those systems; and
 - (b) protecting the public (whether passengers or not) from personal injury and other risks arising from the construction and operation of transport systems to which this section applies...
- (6) This section applies to the following transport systems, that is to say:
 - (a) any railway, tramway or trolley vehicle system; or
 - (b) any transport system using any other mode of guided transport..."
- 3.9 In so far as relevant, Part 1 of the 1974 Act provides:

"1. Preliminary.

The provisions of this Part shall have effect with a view to—

- (a) securing the health, safety and welfare of persons at work;
- (b) protecting persons other than persons at work against risks to health or safety arising out of or in connection with the activities of persons at work;
- (c) ...
- (d) ..."
- 3.10 Further to that legislation and to the Conditions under Network Rail's Licence which I discuss below, are the RSSB (Rail Safety and Standards Board) Codes and Guidance which promote operational safety, safety of the travelling public and individuals (public or private) who interface with railway operations i.e. at level crossings. Network Rail is required to comply with the Railway Standards and Guidance under its operating Licence (Condition 13.1 (b) and 13.2).

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Network Rail's Licence

- 3.11 Further to the overarching duties of Network Rail which are comprehensively codified in statute, is its governing licence. The Licence, granted under section 8 of the 1993 Act (amended 1 April 2019), authorises Network Rail to operate the railway network. The conditions of the Network Licence are properly enforceable by means including enforcement orders issued by the ORR. There is a clear and fundamental requirement, overseen and enforced by the ORR, for absolute compliance by Network Rail with the Licence in all respects. This imperative is no less so with regard to ensuring the safety of all.
- 3.12 Separately, under Network Rail's operating Licence is Condition 13 (Safety and Standards) of Part D (Standard Industry Obligations) under Part III. Reflecting section 117 of the 1993 Act, Condition 13 provides:
 - "13 Safety and standards
 - 13.1 Except where ORR consents otherwise, the licence holder shall:
 - (a) be a member of RSSB [Rail Safety Standards Board] and a party to the Constitution Agreement;
 - (b) comply with its obligations under the Constitution Agreement and the articles of association of RSSB; and
 - (c) exercise its rights under the Constitution Agreement and the articles of association of RSSB so as to ensure that RSSB shall act in accordance with the Constitution Agreement.
 - 13.2 The licence holder shall comply with:
 - (a) the code;
 - (b) such Railway Group Standards as are applicable to its Licensed Activities; and
 - (c) subject to Condition 13.3, such Rail Industry Standards (or parts thereof) as are applicable to its Licensed Activities."
- 3.13 In addition to Condition 13, Part A (Core Duties and structure) under Part III of the Licence sets out Network Rail's responsibilities for maintaining, renewing, replacing and developing, improving and enhancing the railway network. Once again, this includes the core responsibility for managing safety which, in turn, extends to overseeing the safety of staff, contractors, train and station operators, those who come onto railway land or property, either as a contracted individual or as a member of the public.
- 3.14 The management and use of any level crossing necessarily engage the above responsibilities and duties.
- 3.15 Condition 1 of the Licence states:

"1 Core Duties

Network Management Duty

- 1.1 The "Network Management Purpose" is to secure:
 - (a) the operation and maintenance of the network;
 - (b) the renewal and replacement of the network; and

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- (c) the improvement, enhancement and development of the network, in each case in accordance with best practice and in a timely, efficient and economical manner so as to satisfy the requirements set out in Condition 1.2
- 1.2 For these purposes, the requirements are the reasonable requirements of persons providing services relating to railways and Funders, including Potential Providers or Potential Funders, in respect of:
 - (i) the quality and capability of the network; and
 - (ii) the facilitation of railway service performance in respect of services for the carriage of passengers and goods by railway operating on the network.
- 1.3 The licence holder shall achieve the Network Management Purpose to the greatest extent reasonably practicable having regard to all relevant circumstances including the ability of the licence holder to finance its Licensed Activities (the "Network Management Duty").
- 1.4 In complying with the Network Management Duty, the licence holder shall in particular ensure that it duly takes into account the interests of all classes of passenger operator and freight operator in satisfying the requirements set out in Condition 1.2."
- 3.16 The above informs the duty of Network Rail, ultimately regulated and enforceable by ORR and the Secretary of State, both to operate the rail network safely and efficiently so far as is reasonably practical, having due regard to all relevant circumstances. This includes its management of level crossings and their interrelationship with the railway line, operational service, and infrastructure maintenance and repair, and for proposed enhancements of specified routes of railway, as here, under the TRU TWAO.

Operational Efficiency

- 3.17 David Vernon speaks to the case made for the order for high level operational enhancements that will promote resilience and efficiency where this relates to the needs and requirements of the Transpennine Route Upgrade, which will see the benefits from electrification of the route, enabling an overall increase of the permitted line-speed and in the overall capacity of the route. My evidence expands on the consequential risk to operational efficiency of the wider railway network and the unacceptable safety risk on the wider railway network that would arise from the Level Crossings should they not be closed and removed.
- 3.18 In Network Rail's considered view the site-specific circumstances relating to the Level Crossings demonstrate not only proposed enhancements could not be progressed to their full potential if the additional risk that those enhancements would give rise to at the Level Crossings is not addressed through the closure of the Level Crossings, but also in terms of preserving operational efficiency of the wider network, that the retention and use of the Level Crossings would similarly prove incompatible with various duties, responsibilities and objectives of Network Rail beyond the scope of the TRU Project. For example, consequential delays arising from temporary closure of the line or the slowing of train traffic, because of a train striking a pedestrian, a near miss, misuse and trespass at any one of the Level Crossings not only delays Transpennine Services or other

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- services on the particular line (or lines) running over the Level Crossings, but it can have considerable effects on the efficient running of the wider network, as I discuss below.
- 3.19 As operator and owner of the national rail infrastructure, and against a fundamental requirement for Network Rail to fully adhere to the Licence, Network Rail has an obvious and critical role to play in improving railway efficiency and a duty to enhance and improve the network in operational terms. Section 4 of the 1993 Act provides:

"4 – General duties of the Secretary of State and [the Office of Rail Regulation].

(2) [The Office of Rail Regulation] [shall] have a duty to exercise the functions assigned or transferred to [it] under or by virtue of this Part...in the manner which [it] considers best calculated—

(zb) to promote improvements in railway service performance;

- (a) otherwise to protect the interests of users of railway services;
- (b) to promote the use of the railway network in Great Britain for the carriage of passengers and goods, and the development of that railway network, to the greatest extent that [it] considers economically practicable..."
- 3.20 Fundamentally, as David Vernon correctly states, the operational efficiency of this strategically critical railway must be enhanced, as it will enable more high-speed trains to be timetabled. This rightful emphasis has clear statutory force on our Regulator and on Network Rail under its operating Licence, as well as having full Industry backing.
- 3.21 However, as DfT and ORR mandate, where there would be an increase in public safety risk at level crossing through the introduction of an enhanced train service, Network Rail must give due consideration to the impact this combined risk will introduce on other existing rail operations and services of those that lie beyond of the scope of the current Order proposals. Operational *inefficiency* on the wider network as a consequence of implementing these enhancements must not be neglected; to do so would prove incompatible with section 4.
- 3.22 Operational inefficiency may arise through a likelihood of delay being caused to other existing train services on both the adjoining East Coast Main Line ("ECML") to the route and for the Cross-Country Services that also occupy the Route travelling onwards to the ECML, Midlands Mail Line and the WCML, as well as other commuter services. Widespread trains delays, as a consequence of trains delayed by the Level Crossings, can cause major timetable disruption (and derivative compensation payments being made to other train operating companies) especially where train running capacity is high, as here, and maintaining operational efficiency is dependent on trains running to time and keeping to the line-speed, within their timetabled slots. Adherence to the timetable is critical in maintaining operational efficiency.
- 3.23 It is intended for each train to run in accordance to their allocated time slots if the railway's working timetable is to be met. All train movements are meticulously scheduled to run as to reduce all unnecessary delay to other services especially for express services on the ECML. Where a train on the order route runs late because of an incident or temporary speed restriction at the Level Crossings, it will almost inevitably bear consequential

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- effects across the wider network, causing delay to other trains, with those trains cascading a knock-on effect, causing attendant disruption to travelling passengers.
- 3.24 This is especially common when train services of different speed and stopping patterns such as here, share the use of a line, or when lines merge at junctions such as in the approach to York Station. Each delayed train further compounds the original delay, causing onward delays.
- 3.25 The public use of high-risk level crossings leading to the occurrence of train strikes, near miss incidents and also trespass, and can therefore significantly jeopardise the operational efficiency and capacity of the wider railway network, often with consequential impacts much further afield, contrary to Network Rail's general duty and its requirements under its operating Licence. This risk of incurring *minutes delay* is further increased against there being 5 Level Crossings within a relatively short distance on this primary route.
- 3.26 Also, under its Licence agreements held with train and freight operating companies, (here, with LNER, Cross Country, Northern, Freight operators, as well as Transpennine Express) Network Rail is required to make compensation payments in respect of <u>all</u> the services that are delayed or cancelled (say) following a fatality or other incident which has arisen and has temporarily ceased use of the line.
- 3.27 Commonly known in the rail industry as "Schedule 8" payments, these are calculated per each minute delay incurred for non-provision of the network and timetabling, contrary to the contracted requirement for delivery. These payments arising through operational inefficiency indirectly conflict with the delivery of reliable railway operations.
- 3.28 In recognising the impact on operational efficiency on the wider network and Network Rail's requirement to make payments of compensation to train operating companies following disruption to train services causing by the temporary closure of a railway line owing to an incident of misuse of a level crossing, or other incident, etc., it may assist the Inspector to note that for a (non-T&W) Order Decision, Inspector Elliott in his determination of the Dorset County Council (Footpath 14, Wool at East Burton) Rail Crossing Extinguishment Order 2018 (Appendix A), (following an Inquiry at which I gave evidence for Network Rail) stated at paragraph 89: "Ongoing use of the crossing, the potential for a change in the user profile from adjacent residential development, the increased scope for misuse, trespass and accidental human error raises the possibility that continued use of the crossing will fail to promote operational efficiency and safety. Should an incident occur at the crossing then any temporary speed restrictions or line closure would result in delays to train services and the potential for timetable disruption Mr Greenwood explained that where a train runs late due to incident or temporary speed restrictions it can cause a knock-on effect across the network. Each delayed train can further compound the situation causing delays across the network. The closure of the crossing would reduce the risk of any incident or need for a temporary speed restriction thereby reducing any potential impacts on the rail network and any compensation to the train operating companies."
- 3.29 Picking up further on the consequences of disruptions to train services at paragraph 91: "In addition to compensation to train operating companies any unnecessary disruption to

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train services could amount to a breach of the operating licence with the potential for enforcement orders from the ORR. This again would have adverse impacts on NR. In the event of an accident at the crossing there would also be the potential for prosecutions/penalties under the 1974 Act".

- 3.30 Continuing at paragraph 92 "Bearing in mind the above. whilst the crossing remains open there is the potential that an incident might occur which impacts on the operational efficiency of the line and result in additional costs for NR. NR also may be subject to enforcement action from the ORR. The closure of the crossing will reduce the potential for such impacts and therefore is a factor which needs to be put into the balance of expediency."
- 3.31 As well as being a restriction to the Transpennine Route Upgrade, with the retention of the Level Crossings hindering parts of the rail network from realising its optimal potential, which would be contrary to Network Rail's efficiency objectives under its Licence and also restricting Central Government's strategic goal to drive improvement of the rail transport network, I am strongly of the view that removing the impact from operational inefficiency occurring if the Level Crossings are retained, should attract real significance in the overall balance in making the Order.

4. Office of Rail and Road

- 4.1 The ORR (as another arms-length Government body) is the body principally responsible (together with the Secretary of State, Welsh and Scottish Ministers) for the regulation of the railway industry in Great Britain. The ORR is also the health and safety regulator for the rail industry and of Network Rail (through the Licence) in operating the railway.
- 4.2 The ORR and the Secretary of State have acute regard to protecting the interests of all users of railway land and rail services; to promote the use and efficiency (including financial) on those providing rail services and to provide to operators of railway services (and see properly implemented) performance protocols and formal guidance and advice that properly enable the discharge of their functions.
- 4.3 The ORR is of the view that all level crossings exhibit clear safety hazards; more so at passive level crossings. From this perspective, it is correct that all level crossings exhibit unsafe characteristics and in June 2021 the ORR published its Guidance "Principles for managing level crossing safety" (CD 2.02) for all who are involved in level crossing safety, including those whose activities impact on level crossing safety and the users of level crossings.
- 4.4 This publication presents principles set around a risk-based approach focusing on the interface of users, railway and highway. It identifies ways of understanding the types of use and mitigating risk appropriately.
- 4.5 The Principles emphasises that risk should be reduced through the design of a level crossing or through an alternative way of crossing the railway where this is reasonably practicable, and the importance of considering how level crossings are actually used.
- 4.6 In managing the risk, the Principles further promote ORR's view (at page 11, paragraph 26) that "the first consideration for all level crossings should be whether there are

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- reasonably practicable alternatives to a level crossing" and (at page 27) that "we encourage alternatives such as diversions, bridges or tunnels to be fully explored and delivered were reasonably practicable."
- 4.7 ORR therefore endorses the closure of level crossings where there is Network Rail-assessed risk to public safety and where there is no other suitably viable option to adequately overcome or mitigate such risk. Network Rail's view on the Level Crossings, having expertly assessed each option, including Cost Business Analysis and weighting in favour of expenditure under Gross Disproportionality¹, that each Level Crossing cannot be made safe, SFAIRP, if they were to remain open, is entirely consistent with the ORR Principles.
- 4.8 Consistently with the above, new level crossings are not permitted on new, high speed railway infrastructure delivered, such as 'HS1', and only by exception on other lines. ORR's level crossing policy makes it clear that any new level crossings on the network (in its entirety) may only be provided in exceptional circumstances.
- 4.9 The closure of unsafe crossings, especially where there exists a suitable alternative route, or one can be created, also has notably strong Central Government support, again endorsed by the ORR. Over Network Rail's (five year long) Control Periods 4 (04/2009 03/2014) CP5 (04/2014 03/2019) and CP6 (04/2019-03/2024) and separately from the authorised funding of the TPU project, the ORR and Department for Transport (DfT) has allocated in excess of £230 Million of funding to allow for the closure of level crossings, or to mitigate risk SFAIRP.
- 4.10 However, in light of onerous financial commitments against settled budgets for operating and enhancing the railway network, including government funding of the TRU Project, there is no contingency funding for unplanned enhancement works. The Cost Business Analysis, weighted in favour of Gross Disproportionality, endorses there can be no additional allocation of risk mitigation funding at the Level Crossings (e.g. for additional bridges) above what has already been authorized.
- 4.11 As David Vernon states, DFT has confirmed the Government's commitment to TRU and the Project, which has provided public commitments to fund, subject to continued ongoing Value for Money (VfM) tests to ensure the Project delivers the best results for both rail users and taxpayers. The funds, as authorised, meet the capital cost of implementing the Order inclusive of undertaking all programmed works, including acquisition of land and compensation, environmental mitigation.
- 4.12 Consequently, the Optioneering process that has been undertaken has been robustly tested, in line with Network Rail policy, As confirmed by Michael Westwood for the Barrowby crossings and for Peckfield, the viable options were considered by TRU technical experts against performance, environment and suitability, design, cost, deliverability and maintainability criteria including consideration of how the option would manage risk at the crossing, culminating in the recommended option selection by TRU. For Highroyds Wood and Garforth Moor, Ms Bedford explaining the work undertaken by

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¹ The Health and Safety Executive states The concept of gross disproportion requires duty-holders to weigh the costs of a proposed control measure against its risk reduction benefits. HSE principles for Cost Benefit Analysis in support of ALARP

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Route technical experts to address the high level of risk to crossing users, after they had been temporarily closed on safety grounds.

4.13 Andrew Cunningham sets out in his Proof the options previously considered as part of the NRA process and has considered the Cost Benefit Analysis including applying a Gross Disproportion Factor for different options for mitigating that increased risk. His results verify that the options as proposed in the Order, against the individual circumstances at each site are correct, meeting the necessity to mitigate public risk SFAIRP whilst ensuring the VFM test is met, and which options have now been allocated authorized funding to be delivered.

5. Network Rail's Safety Strategy for Level Crossings

- 5.1 Network Rail's duty under Health and Safety legislation includes a responsibility for users of the Level Crossings, so far as is reasonably practicable. Network Rail is firmly committed to eliminating accidental fatalities across all its level crossing estate. This is an established, long-term strategy. Closure of level crossings has been proven to be the most effective way of removing this risk from the network.
- 5.2 Network Rail's policy for managing level crossing risk is published within its document: "Enhancing Level Crossing Safety 2019–2029" (**CD 2.01**). Designed around SFAIRP (so far as is reasonably practical) and ALARP (as low as reasonably practicable) principles, the policy sets out a long-term strategy targeting improved safety on Britain's railways, with our long-term level crossing safety vision as "No accidents at level crossings on Britain's main line rail network".
- 5.3 Aligned with RSSB's strategy Leading Health and Safety on Britain's Railway (Appendix B) which targets improved safety at level crossings as one of its 12 key priorities, "Enhancing Level Crossing Safety" highlights Network Rail's strategic long-term goals for level crossings as:
 - (a) Reduce safety risk to the public, passengers and our workforce;
 - (b) Increase rail capacity and performance across the network;
 - (c) Reduce operational and financial risk.
- 5.4 It highlights that Network Rail will reach these goals by meeting the following level crossing strategic objectives:
 - (a) Maximise risk reduction;
 - (b) Fewer fatalities injuries and near misses;
 - (c) Reduce the likelihood of human error,
 - (d) Change user behaviour; and
 - (e) Improve reliability at our level crossings.
- 5.5 To meet these objectives "Enhancing Level Crossing Safety" clearly identifies four areas of targeted focus:
 - (a) Risk Management;
 - (b) Technology and Innovation;

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- (c) Competence Management; and
- (d) Education and Enforcement.
- 5.6 Effective Risk management include reducing the number of active open level crossings; continuing on-going risk reduction; risk-based prioritisation of actions; undertaking inspection and maintenance activities; deploying the next generation of the industry recognised risk assessment model 'All Level Crossing Risk Model' ("ALCRM") with updated complex algorithms such that they are further enhanced and aligned with the industry's Safety Risk Model (SRM) (see Section 8, page 28).
- 5.7 Network Rail's commitment is to seek ways to continually improve our risk assessment processes so that emerging human factors risks, and other hazards are fully incorporated within core risk management activity. Further improvements include the number of extended censuses undertaken within risk assessments to provide the best intelligence possible to determine when level crossings are used, at what frequency and by whom (user demographics, vulnerable and encumbered usage etc.).
- 5.8 The strategy states, at Page 23; "Wherever practicable and safe to do so, any diversions will seek to utilise conveniently located over-bridges or underpasses to assure public money is efficiently managed"
- 5.9 It is widely acknowledged in the rail industry that the closure of level crossings is the most effective way to remove safety risk. This is consistent with the General Principles of Prevention, set out in Schedule 1 of the Management of Health and Safety at Work Regulations 1999, in particular the following:
 - (a) avoiding risks;
 - (b) combating the risks at source; and
 - (f) replacing the dangerous by the non-dangerous or the less dangerous.
- 5.10 The ORR's determination of Network Rail's funding for the previous Control Period (CP5: 2014–2019) had identified a requirement to maximise level crossing risk reduction. This requirement is not diluted under CP6 nor CP7.
- 5.11 Amongst the safety-led initiatives delivered by Network Rail to date, in the promotion of increasing standards of safety, have been the following:
 - 5.11.1 The introduction of over 100 Level Crossing Managers since 2012, to manage risk and risk mitigation at over 6,000 level crossings nationally;
 - 5.11.2 closure of over 1366 level crossings since 2009 and removed vehicular use from a further 102;
 - 5.11.3 the use of 3 Transport and Works Act Orders (TWAO) successfully piloted on Anglia Route, as a more strategic approach to improving level crossing safety;
 - 5.11.4 installation at 150+ level crossings with spoken audible warnings to announce when "another train is coming" after one train has passed through (this control being a direct outcome of the Elsenham fatalities);

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- 5.11.5 deployment of more cost-effective 'overlay' miniature stop light (OMSL) systems to improve safety at footpath and user worked level crossings, where feasible (in both practical and financial terms);
- 5.11.6 installation of red-light safety equipment (RLSE) at c100 public road level crossings to improve user behaviour, deterring deliberate misuse. Trials this year have demonstrated that these Home Office Type Approved (HOTA) cameras have reduced deliberate misuse by up to 90% at some locations;
- 5.11.7 Network Rail's fleet of 15 mobile safety vehicles, operated in partnership by the British Transport Police (BTP), continues to target locations of poor user behaviour;
- 5.11.8 developing feasibility for installing less costly modular Fibre Reinforced Plastic (FRP) footbridges;
- 5.11.9 in partnership with RSSB, Network Rail has further developed ALCRM to allow for an improved understanding of specific level crossing risk, and
- 5.11.10. Introduction of undertaking narrative Risk Assessments (NRA) at every level crossing as part of the risk assessment process.
- 5.12 As an open interface between the railway and the highway, level crossings are giving rise to an increased potential for user behaviour to affect train operations. They have differing levels of protection and are broadly split into two groups. Passive crossings, such as the Crossing, carry no warning of train approach other than by the train driver who may use the train horn. The onus is on the user to determine whether it is safe to cross the line, in conjunction with instruction and signage.

6. The Expert Assessment of Level Crossings

- 6.1 Under the draft Order, if made, it will give statutory authority for the Level Crossings to be closed, thereby promoting public safety of those who would otherwise use them as well as achieving the operational efficiencies that will enable the TRU Upgrade to be implemented, without limitations. However, although the ambition may be to close level crossings, this is certainly not the case for all crossings, as has been borne out elsewhere on the railway network. The proposal for their closure has been robustly and thoroughly considered before the final option was selected for the draft order.
- Our statutory duty lies under the Health and Safety at Work etc., Act 1974, for the health, safety and welfare of its employees and for protecting others against risk at level crossings. Regarding its level crossings, this is to reduce level crossing risk SFAIRP. For the proposed route enhancements this process commenced with a risk assessment undertaken for each of the Level Crossings affected by the Order, undertaken by Sotera, which provided the background information into the optioneering process that culminated in the recommended option.
- 6.3 Indeed, DfT mandates that where there is a change in railway operations, such as the proposed change to the current timetable, changes or enhancements in railway infrastructure (such as the repositioning of signalling or the electrification of the railway with overhead lines) and the introduction of longer and faster trains, that would all

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- potentially have an impact on the risk to public safety of users of a level crossing, that a new assessment is undertaken, to identify the increase in risk and how this can be mitigated against cost, SFAIRP.
- As is outlined in Network Rail's Statement of Case, the risk at each Level Crossing is assessed by utilising both a Quantitative and Qualitative Assessment to give an exert and balanced approach to the management of risk. The industry certified 'ALCRM' provides the quantitative risk calculation, based on site specific data that is fed into the risk model by the Level Crossing Manager, and which calculates the risk rating for each level crossing. By feeding in the additional data from the increase in train services, length and speed of approaching trains, the different sight lines and distances that become applicable, the system will generate the additional risk that the Project will import, including a new ALCRM rating for each and the rise in FWI.
- The ALCRM score is recorded in the 'Narrative Risk Assessment' (NRA) for the crossing. The NRA is a detailed report that expertly assesses the current risk when taking into account all the circumstances that affect a specific level crossing, both directly from the railway (train movements, speed and numbers, sighting distances, etc., as well as the risks from the surrounding environment (the type of environment around the crossing, number of users, how the crossing is used, their physical restrictions, distraction, etc.).
- 6.6 The NRA can also give consideration to future changes that are proposed, and which will have a direct and adverse impact on public safety. This includes for planned enhancements to the railway and rail services which the Order, if made, would introduce.
- 6.7 It is also important to understand that 'compliance' with level crossing Standards (e.g. in connection with required sighting distances at each level crossing) should not be equated with 'safety'; a fundamental mistake often made by those with no expertise in railway safety. As recognised by Inspector Tregembo when making her decision on the extinguishment of the footpath over "Penny's" foot crossing (Doncaster Borough Council Public Footpath Rossington Number 10 (Part) Rail Crossing Extinguishment Order 2019) in her Order Decision on 17 November 2023 (Appendix C) a 'compliant crossing' is not the same as a safe crossing.
- 6.8 Network Rail's judgment in the NRA is expertly exercised with regard to identifying and assessing the *vulnerability* of users of a level crossing, across all categories of user and engaging with various behavioural norms, etc., in addition to instances of accidental human error and misuse. The assessment of 'vulnerability' in terms of level crossing users is exclusively for Network Rail, as *the expert assessor*. The ALCRM overall risk score for the Crossing allows for the incorporation of intricate risk scoring inputs and outputs.
- 6.9 Separately, the Level Crossing Guidance "Census Good Practice" ("CGP") (Appendix D), section 5.3.6.1, underscores, however, that the Level Crossing Manager's structured expert judgement reigns. So, the LCM is, by policy and in fact, the "competent" person responsible for the safe management and risk assessment of level crossings" (CGP Section 2) and the "final decision" (section 5.3.6.1) rests with the Route level Crossing Manager's structured expert judgment, supported by his expert team.

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- 6.10 The 'reasonable practicability' of the application of the CGP in the context of risk assessment reinforces the flexibility in its application; to be applied in an evolutionary way, accommodating emerging and developing trends in human behaviour, including the extremely hazardous trends of a significant proportion of level crossing users.
- 6.11 The categorisation of vulnerability for the purposes of the CGP (see section 5.3) is purposely inclusive; not exhaustive. The circumstances in which vulnerable users, as categorised, exemplify vulnerabilities, are equally not exhaustive (see section 5.3.5). In consideration of the elderly, the disabled, sole/unaccompanied children, and accompanied children (including when at distance from their parent/guardian), it is perfectly open to the Level Crossing Manager to apply the "50% safeguard" within the NRA. The "final decision" on its application is a matter of the structured expert judgment of the Level Crossing Manager. CGP paragraph 5.3.6.1 underscores this.
- 6.12 With regard to the sample ratios provided in the CGP, the safeguard could (but might not typically) be applied with regard to 1:5 (vulnerable user). A risk-based assessment supportive of a ratio of 2:5 users, would also properly allow for the safeguard, as could a much lower ratio where the total number of users is excessively high, and a separate but lower percentage, gives an unacceptably high number of vulnerable users that necessitates inclusion of the safeguard.
- 6.13 Influenced by the rise in FWI and ALDRM quantitative rating, and based on the site specific qualitative assessment of the Level Crossing Manager highlighting the key safety factors of perceived uncontrolled and uncontrollable risks that collectively underscores why each level crossing will become demonstrably unsafe for continued public use, each NRA then requires the inclusion of an optioneering exercise of all feasible options to properly consider the mitigation of risk to as low as reasonably practical (ALARP).
- 6.14 Each single option is subjected to robust Cost Business Analysis that also incorporates a calculated Gross Disproportion Factor, thereby providing a structured and a consistent framework in determining whether the cost of implementing a control measure is grossly disproportionate against the reduction in risk. It considers the optioneering process when also taking into consideration Gross Disproportionality, to be the fairest in determining what options should be progressed, bearing in mind that the cost is weighted in favour of expenditure under gross disproportionality. As DfT confirms, the cost of implementing risk measures must not exceed the benefit that those measures might achieve.
- 6.15 The recommendations from each NRA is then collectively subject to further consideration by an expert panel which additionally takes into consideration additional circumstances that may affect the outcome of the final option to be progressed. This includes budgetary provision and spending availability across all the level crossings, and consideration of Network Rail's Public Sector Duty requirements under the Equality Act 2010, which will all have an impact on the option to be selected.
- 6.16 On the latter, in the exercise of its functions, Network Rail has due regard to users with protected characteristics under the 2010 Act. At each Level Crossing that includes, for example, consideration of users with disabilities and who may have mobility issues, poor sighting or hard of hearing. Where there are calls to replace a level crossing with a footbridge, against the VFM test Network Rail must also consider disproportionately high

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- costs and, where cost is not an issue, the surrounding environment and the availability of adjacent land to construct ramps.
- 6.17 As part of the Order process, it is recognised that the Inspector will also need to consider all of the circumstances at each of the Level Crossings. Network Rail has set out in its evidence the consideration it has given to those circumstances through its optioneering processes and, in Andrew Cunningham's evidence, the consideration he has given to these matters applying the approach that would be used by LCMs as part of the NRA process.
- 6.18 As well as the enhancements the Order would achieve, Network Rail has carefully considered f the level and nature of use made by the public of the existing paths at each Level Crossing, the risk to their use continuing, the effect any closure would have on the PRoW network including any proposed diversion or the construction of an additional bridge, as well as the relative cost of such measures, and the wider question of what is reasonably practicable, and culminating in confirming which are the most suitable measures to be implemented at each site.
- 6.19 Andrew Cunningham's expert analysis supports the finding that the risk to public use of the Level Crossings will considerably increase from the combined effects of the introduction of more train services against the likely vulnerable user profiles.
- 6.20 Of note also, is that the assessment has been made without factoring into account the impact of inevitable future residential development that will (or could) subsequently occur in later years in the vicinity of the Level Crossings both in terms of the number of likely traverses and likely change in user profile.

7. Optioneering and Site-Specific Expenditure

- 7.1 The Optioneering and recommendations that were selected under the TRU Project were clear and robust. It is clear from the proofs provided optioneering by my colleagues that suitable alternative options for each site were robustly considered and tested, before being accepted into the draft Order.
- 7.2 As stated above, the options selected for the Order have since been further tested, giving due consideration of the imported risk against risk mitigation and cost, the optioneering that would be undertaken when considering options as part of the NRA process, when Cost Business Analysis and Gross Disproportionality is applied.
- 7.3 In his Proof of Evidence, against the sighting of approaching trains, which will be further restricted by the erection of overhead line stanchions running parallel with the railway, Andrew Cunningham has highlighted limitations and impracticability in attempting to make the Level Crossings safe for their retention, including the provision of Miniature Stop Lights (MSLs), and their inadequacy in providing for an effective warning system at each crossing.
- 7.4 Nevertheless, what might be perceived to be practical by some, may be highly objectional by others; it therefore remains Network Rail's considered policy to progress options that are justified through rigorous optioneering selection that balances the benefit to the public against loss and inconvenience to landowners and occupiers, and the cost to the public

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- purse. As an example, Network Rail will only provide replacement bridges where this is justified and is feasible.
- 7.5 In reference to calls for the installation of a bridge at Peckfield, Network Rail is not required to provide, *at any cost*, an alternative crossing solution in effective substitution for a Level Crossing. It is reasonable for Network Rail, as an 'arms-length' public authority, to properly scrutinise the cost-efficiency of any mitigation measures, especially where there are more cost-effective solutions that will effectively meet the requirements. This is addressed in detail by both Mr Cunningham and Ms Bedford.
- 7.6 DfT has made it clear that Network Rail must comprehensively consider the cost of implementing risk control measures (in terms of money, time, and effort) against the reduction in risk those measures might achieve. The process that has been followed for Peckfield, and with due regard to the need for railway operational efficiency and enhancing train service, has been correctly considered and applied.
- 7.7 Nonetheless, entirely irrespective of the unavailability of funding, Ben Thomas confirms there are clear and definite land constraints. There is insufficient land within the railway corridor to erect a bridge structure, whether ramped or stepped only, and land would therefore need to be acquired from third parties: see Michael Westwood's Proof for discussion of the options considered for Peckfield Level Crossing and reasons why they were discounted.
- 7.8 land would therefore need to be acquired from third parties. Even though Network Rail is, in principle, in a position to seek the power to compulsorily acquire land where a landowner is not willing to release land in their ownership by private treaty, as Ben Thomas sets out in his evidence those powers should only be conferred where there is a compelling case in the public interest to do so, and in compulsorily acquiring land there must be a fair and proportionate balance between private interests of landowners and the public interest.
- 7.9 In the circumstances, with safe and sufficient alternative solutions proposed for all sites including the construction of a bridle bridge at Barrowby, properly justified, it is my opinion, based on the experience I have with closing level crossings elsewhere, where a bridge solution is either adopted by Network Rail, or where it is decided that a bridge cannot be justified (including where that has been tested through inquiry), that the provision of a bridge at Peckfield level crossing is not justified, and that the option selected is wholly in line with the policies, strategies and approach I have discussed above.

8. Managing Public Money as to Costs

8.1 As a government funded organisation, the 'Managing Public Money' principles apply. Network Rail was reclassified as an 'arms-length' public body in September 2014. As is stated on page 8 in the May 2023 handbook (**Appendix E**): "...the key themes... are the fiduciary duties of those handling public resources to work to high standards of probity; and the need for the public sector to work in harmony with Parliament." Network Rail must therefore always ensure that it manages public money responsibly, which

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- necessarily means adhering to the principles, rules, guidance and advice set out by Government.
- 8.2 The Handbook notes (at paragraph 4.3) under "Opportunity and Risk", "Embedded in each public sector organisation's [i.e. Network Rail] internal systems there should be arrangements for recognising, tracking and managing its opportunities and risks. Each organisation's governing body should make a considered choice about its desired risk appetite, taking account of its legal obligations, ministers' policy decisions, its business objectives, and public expectations of what it should deliver."
- 8.3 The objective is to secure the operation and maintenance, renewal, replacement, improvement, enhancement and development of the network, in each case in accordance with best practice and in a manner that is efficient and economical. I note also that the imperative for cost-effectiveness, both 'within the business' of Network Rail, and in terms of central Government capital expenditure and investment within infrastructure projects (of both a small scale and large scale) is ever-increasing. The attendant requirement, being a fundamental requirement, for fiscal prudence an extremely strong guiding principle. The corollary of this is that the assessed, evidenced and strategic justification for capital expenditure on infrastructure such as bridges and tunnels must be demonstrably shown. Network Rail would be required to justify all additional expenditure, wherever a comparatively safer and more cost-effective alternative exists, such as removing all risk through the closure of these Level Crossings.
- 8.4 Below are example paragraphs from "Managing Public Money" to which Network Rail must adhere (the origins of which, it will be remembered, preceded the latest economic downturn and before that, the most recent, Department for Transport budget cuts):
 - 5.5.2 "Because commitments can evolve into spending, they should always be scrutinised and appraised as stringently as proposals for consumption. Some departments may agree with the Treasury blanket authority for defined and limited ranges of non-statutory commitments, e.g. indemnities for board members and commitments taken on the normal course of business. All other non- statutory commitments are novel, contentious or repercussive, so Treasury approval is always essential before they are undertaken;
 - 7.1.1 Public sector organisations may be able to deliver public services more successfully if they work with another body. Central government departments may find it advantageous to delegate certain functions to ALBs that can be free to concentrate on them without conflict of interest. Or it may be helpful to harness the expertise of a commercial or civil society sector organisation with skills and leverage not available to the public sector;
 - 7.1.2 Any such relationship inevitably entails tensions as well as opportunities. The autonomy of each organisation needs to be buttressed by sufficient accountability to give Parliament and the public confidence that public resources are used wisely;
 - 7.5.1 To promote better delivery and enhance efficiency, departments often find it useful to work with other government departments. This can make sense where responsibilities overlap, or both operate in the same geographical areas or with

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the same client groups – arrangements loosely categorised as joined up government. Such arrangements can offer opportunities for departments to reduce costs overall while each partner plays to its strengths."

- 8.5 This resonates incredibly strongly with the responsibility of Network Rail to funding decision-making and to allocating expenditure, in a proportionate and sequentially appropriate way, on a professionally assessed and evidence-based footing even when part of a multi-million-pound enhancement project such as the Transpennine Upgrade. It is therefore entirely reasonable for Network Rail to robustly scrutinise the cost-efficiency of any and all mitigation measures. Network Rail must have appropriate regard to the need for railway operational efficiency and enhancing train services. Network Rail is not required to provide, at any cost, an alternative crossing solution in effective substitution for the Level Crossings.
- 8.6 Inevitably, there is always a high level of competing infrastructure demands and financial resourcing is finite and, as above, this resourcing is becoming even more finite. It is clear that there is no contingency funding available to cover the implementation of high cost mitigations/options against every level crossing and which is not included within the current Upgrade 'Business Plan' or in the emerging Business Plans for CP7 (that have been ratified and agreed by DfT²) so as might meet additional (i.e. unforeseen) expenditure demands during CP6 and 7. Funding would instead, need to be drawn down contrary to already formulated, assessed and signed-off budgets, all with oversight by ORR.
- 8.7 In application of this approach, in principle, the site-specific facts of each level crossing site undoubtedly feature very significantly as but one reason for discounting the allocation of (very substantial) expenditure/funding for new crossing infrastructure, such as an additional bridge, as is sought by objectors to Peckfield Level Crossing proposals, where a suitable and more cost effective alternative exists.
- 8.8 Expenditure decisions are understandably not exercised by Network Rail in relation to individual locations without consequential regard to other highly-competing commitments and demands. Even in the general locality of this line of railway, within the limits of this Order, the Project has proposed the construction of 2 ramped structures at significant cost, to replace the level crossings at Barrowby and also at Batley (Lady Ann) where it was correctly assessed through optioneering that it was appropriate to do so.
- 8.9 Nevertheless, I cannot emphasise too heavily how these demands are continuing to increase, apace. The significant impracticality of even projecting a reallocation of expenditure to another infrastructure commitment, is clear. It would be necessary to divert assessed safety funding away from one or more other comparatively meritorious schemes elsewhere within the TRU Project, with the risk that those schemes either not coming forward, or suffering significant delay. Such an unsatisfactory, *ad hoc* approach

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² DfT has committed £43.1 billion in funding to Network Rail as the Statement of Funds Available for CP7 (01-04-2024 to 31-03-2029). The high-level output specification makes it certain the government will proceed with rail enhancements and efficiencies, maintaining a strong focus on operations, maintenance, and renewal, whilst tackling difficulties like fragmentation and outdated working practises.

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to expenditure would also be strongly contrary to the strategic and holistic implementation of planned expenditure to meet required safety and operational efficiency objectives.

9. Pedestrian Behaviour

- 9.1 Pedestrians are ultimately responsible for their own safety and level crossing Users are expected to use reasonable vigilance to satisfy themselves that no trains are approaching before they start to cross the line. They should remain alert while crossing.
- 9.2 However, RSSB records members of the public, and particularly pedestrians, are mostly exposed to the risk presented by level crossings, with the risk higher at unprotected, passive crossings.
- 9.3 At paragraph 20, the *Principles for managing level crossing safety* (**CD 2.02**) advises: "The user's understanding may not match how the level crossing is intended to be used." And despite sustained network-wide campaigns to educate people of the dangers of level crossings, users do not consistently behave in a predictable or appropriate manner. The level of deliberate misuse or accidental human error, for example, remains stubbornly high.
- 9.4 The causes of pedestrian accidents at level crossings can be factorised by the number of pedestrians using a crossing against the number of trains; RSSB conforms the numbers of accidents increase with the age of the pedestrian.
- 9.5 Over 20% of pedestrians crossing an operational railway line inadvertently place themselves in harm's way. Stop, Look, Listen' (SLL) signs are dependent upon all users paying attention and to continue to look and listen whilst crossing. However, the RSSB has used eye-tracking devices to ascertain that a small, but significant, number of users (around 5%) fail to check for trains in either direction. A further 16% only looked in only one direction, anywhere on the approach or traverse, presumably relying on peripheral vision, hearing or an expectation that no train is coming.
- 9.6 This risk is significantly increased whereby a user has seen a train approaching and makes the decision to cross quickly, before it arrives; but fails to look for trains in the opposite direction.
- 9.7 People's willingness to wait for trains can also be influenced by such things as distractions, time pressures or over familiarity with a crossing, leading to them taking further risks. The Rail Accident Investigation Board (RAIB) has confirmed that a large proportion of train strikes with pedestrians are attributed to 'fails to stop/look/listen'.
- 9.8 The *Principles for Managing Level Crossing Safety* also advises of natural human tendencies and people's willingness (or unwillingness) to wait. At page 8 paragraph 21 it notes: "People will look for a quicker and easier way of doing something, especially if they are regular users. They may build up assumptions about the timing of trains and when they consider it is safe to cross; however, trains do not always run to time or freight trains may be time tabled when not expected."
- 9.9 The possibility of more than one train approaching simultaneously with the first train 'hiding' and masking the sound of the second train. The RSSB acknowledges in its

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- publication "Level Crossing Digest Issue 4" 2022 (Appendix F) at 4.3 includes: "Crossing immediately behind one train, unwittingly into the path of a second on the other line, is a common factor in fatalities on passive crossings".
- 9.10 As a recent example, the Rail Accident Investigation Branch (RAIB) Accident Report (01/2023) into the fatality at Lady Howard FP & BW LC (**Appendix G**) concluded that the cause of the accident was that the pedestrian, who was standing at the side of the level crossing with her dogs, was awaiting the passing of an approaching train, and was apparently unaware that a second train was approaching from the opposite direction when she made the decision to cross. She did not perceive the risk arising from the possibility that the passing train was hiding the approach of the second train.
- 9.11 The RAIB recommendation on passing trains was clear, that Network Rail should:
 - use its existing risk assessment data to identify those footpath and bridleway crossings that present the highest risk to users of a second train approaching being potentially hidden by another train, and
 - at those crossings identified as presenting the highest risk, implement appropriate
 measures to control the risk to users of a second train approaching• in deciding what
 measures to implement.
- 9.12 This risk was very recently borne out by Inspector Tregembo when making her decision on the Doncaster Borough Council Public Footpath Rossington Number 10 (Part) Rail Crossing Extinguishment Order (**Appendix C**). At OD43 she stated: "The InterCity trains are 260 metres long and freight trains vary in length from 420 to 775 metres. This can lead to trains being hidden by trains passing in the opposite direction. London North East Railway company have confirmed many of their trains pass each other close to Penny's Crossing making this a significant risk and hidden trains have been the cause of many near-misses and actual fatalities. During the site visit, two trains passed each other close to the crossing. Given the marginal crossing times with full sight lines, I consider hidden trains a significant risk to public safety in this location." It is therefore logical to conclude that with the proposal for longer trains being introduced, with more services, the risk from passing trains rises significantly at all the Level Crossings.
- 9.13 The following photographs present a clear visual example of the second train approaching effect. At this level crossing also near Leeds, shows a cyclist who, having also seen an approaching train similar to the pedestrian at Lady Howard, waited at the level crossing gates for it to pass.









9.14 The photographs are taken from the two trains as they passed over the level crossing at 70mph. The first, taken from the second train's forward-facing camera shows the first train passing over the crossing. It then shows the cyclist now walking over the crossing into the path of the speeding train, which he neither sees, nor hears. The final photo is taken from the rear of the first train after it had passed the cyclist. It captures the second train,

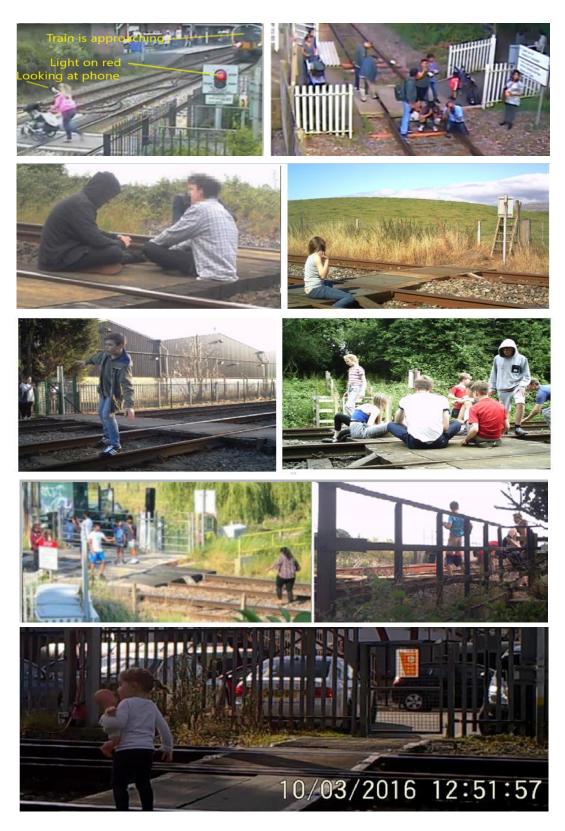
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- then upon the crossing, and the cyclist still unaware of it until the very last moment, when he managed to pull back and just avoid being struck.
- 9.15 The RSSB also highlights in its publication "Level Crossing Digest Issue 4" (Appendix F) at paragraph 4.2: "Variations in train speeds can lull crossing users into thinking they have more time to cross than may actually be the case. Problems can arise on mixed traffic lines, where fast expresses and slower freight services share the same line of route, or on routes where trains either stop or don't stop at nearby stations."
- 9.16 This risk is also borne out by the Inspector in her Order Decision relating to Penny's Crossing (at paragraph 42): "The variations in speed difference between the InterCity trains and freight trains is at least 50 mph. This makes it more difficult for path users to judge the speed of the trains. The freight trains can also take over a minute to pass through Penny's Crossing which can make path users impatient. I consider this speed variation could pose a risk to public safety." This would certainly be the case at most, if not all of the Level Crossings, bearing in mind the slower speed of stopping services that may also be accelerating or decelerating on the approach to the crossings.
- 9.17 When travelling as part of a group, it is not uncommon for individuals to merely 'following on', paying little or, in any event, inadequate attention to their surroundings and following the decision-maker of the group as a whole. This has proven to be particularly problematic at footpath crossings on routes used often by ramblers, children, and even cyclists.
- 9.18 The photographs below show group irresponsible use (amounting to misuse) of level crossings by cyclists and pedestrians on 'live' railway, each having no reasonable appreciation of the danger to which they are exposed because of their misuse.



9.19 Network Rail holds a significant amount of photographic evidence of youths, whether alone or in groups, openly standing by or on level crossings, sitting on the deck, walking up and down the rails, or chasing each other, as well as playing 'chicken' with approaching trains (i.e. running out in front of approaching trains at the last minute). Detailed censuses at public footpath level crossings near residential developments have also demonstrated a trend in riskier types of behaviour, e.g. of youths congregating at level crossings.

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9.20 For example, on 13 December 2014 a 16-year-old girl was struck by a passenger train while sitting on the deck of Hipperholme crossing, Halifax, with her friend in the very early hours of the morning. She was reported to have been listening to a mobile device with a friend and was not expecting trains to be running at the time. The train driver was not required to sound the horn due to the night time quiet period and she neither heard nor saw the approaching train until too late.

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Vulnerable and Encumbered Users

- 9.21 Mr. Cunningham's Proof of Evidence details the risk to vulnerable users (a concept of user promoted by Network Rail as an authoritative means of assessment and which is endorsed by the Industry and has been repeatedly endorsed by both the Secretary of State and Inspectors), including but not limited to those who are comparatively less mobile and/or who share protected characteristics set out in the Equality Act 2010, as well as those exhibiting comparatively greater mobility but who are hazardously unaware or not respecting of the danger posed by level crossings.
- 9.22 It is not uncommon for persons properly characterised as 'vulnerable users' not to personally view themselves as 'vulnerable' and to reject the description, because (say) they subjectively view themselves to be fit, active and generally alert to level crossing dangers. Nonetheless, the objective treatment of such persons as 'vulnerable' within the specific, expert context of level crossing user safety, remains justified.
- 9.23 Another area of vulnerability is the encumbered user; this is a person who may otherwise be fit and active and would then be able to use a level crossing without hindrance but is impeded through other means. They may be carrying heavy bags or items or pushing buggies or a bike, or walkers with a dog either on or off the lead.
- 9.24 Many pedestrians now wear head-obscuring clothing and/or earphones/headphones and/or are distracted in their use of mobile phones and cannot adequately see or hear an approaching train.
- 9.25 Many users who walk/lead a dog (or dogs) import a real possibility for vulnerability when crossing the railway. Albeit I do not suggest that every dog walker will *always* exhibit an equally high level of vulnerability, their owners generally do not consider they are vulnerable because they perceive their dog is under control.
- 9.26 Dogs which are walked off lead amounts to an extremely hazardous and unsafe use of the Crossing. Dogs can run onto the track and their owners are more likely to try to follow or react to them, or focus on them, putting them at high risk from trains; but those with dogs on a lead are also vulnerable. Dogs walked on a short (not extended) lead are perceived by some to be under control, but dog behaviour is unpredictable, especially if a train comes into view. Importantly, the user will often be distracted whilst crossing the railway, and not appropriately focussing on traversing. For example, where the dog may itself become distracted, bark or pull, when approached by other users coming in the opposite direction (or by any another event). This in turn causes distraction to the user from properly watching out and listening for approaching trains, etc.
- 9.27 The photograph below is taken from a high-speed intercity train's forward-facing camera as it passes over a level crossing, at 100mph. Despite the crossing being fitted with Miniature Stop Lights (which are on 'red') it shows the train just 1 second from the crossing with the man and his dog immediately in front of it. The pedestrian who crossed contrary to the red light (whilst another pedestrian waits) has not seen the high-speed train. At the very last moment, when the man's dog was between the tracks, the man first became alert to the train. He survived, but his dog was killed.

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- 9.28 Allowance must therefore be made for the conceptualisation of 'vulnerable' and/or 'encumbered' users, since this appropriately factors into account the objectively ascertainable risks and reduced train alertness, such as users travelling in a group and crossing with an encumbrance such as a cycle, buggy or bags, dog walking, obscuring headwear, and mobile phone use.
- 9.29 Again, Inspector Tregembo correctly observes in her OD for "Penny's Crossing", at para 41: "The crossing is primarily used by dog walkers and the Rail Accident Investigation Board advises that a high proportion of fatalities at level crossings involve pedestrians with dogs. I am satisfied that, given the number of dog walkers and vulnerable users, the crossing times are marginal and would be a risk to public safety."

10. Other Comparable Order Decisions

- 10.1 It is Network Rail's position that the balance in favour of closure of the Level Crossings by implementing the proposed alternatives should weigh very heavily against their retention or for the need of additional infrastructure. Safety is the key factor, against the higher levels of imported risk that the Transpennine Upgrade will create, from the Route Utilisation and the additional services to be introduced in the scheduled December 2024 timetable.
- 10.2 In addition, the high importance of railway enhancement projects and improvements to the railway have very considerable force in operational efficiency terms. Any suggestion that there remains doubt over the importance of such changes, is unfounded. The spur for proportionate growth in passenger and freight services, remains very significant. It is noteworthy also, that these service scheduling decisions have been reviewed and reconfirmed since Covid.
- 10.3 Whilst it is well recognised that the judgment on overall expediency to be reached for each level crossing closure proposal is necessarily fact, and site, specific, the Inspector may also be assisted by the approach consistently (and, I invite be observed, correctly) taken by previous Inspectors in other non-TWAO cases, which involved the extinguishment of rights of way over similar PROW level crossings, within the context of objections made on amenity, inconvenience, alternative routing, and the comparative safety of alternative routes. In those Order Decisions the Inspectors found, when balancing all the factors for and against, that closure would be expedient overall when considering the risk posed to public safety.

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- 10.4 The following order decisions provide just a few of the many examples where Inspectors have balanced the advantages and disadvantages, as promoted by all parties:
 - a. Great Missenden s257 Town & Country Planning Act 1990 (ROW/3259830)(Appendix H)
 - b. Darkies East Burton Dorset County Council (Footpath 14, Wool at) Rail Crossing Extinguishment Order 2018 (Appendix A)
 - c. *Moor Lane* s120 and 118A, Footpath 18, Parish of Staines, Borough of Spelthorne, Surrey Rail Crossing Extinguishment Order 2021 (**Appendix I**).
 - d. *Mountsorrel* Leicestershire County Council Public Bridleway 120 (Part) Parish of Barrow Upon Soar Rail Crossing Extinguishment Order 2017 (**Appendix J**)
- 10.5 I have highlighted some particular passages that I consider to be of particular relevance or applicability to the Level Crossings included in this Order in the sections below:

Great Missenden Order Decision

- 10.6 At Great Missenden, the development of a cycle path and footpath adjacent to the railway would impose additional risk onto a public footpath level crossing.
- 10.7 First, in addressing operational efficiency, Inspector Behn Dip MS MIPROW commented at OD 16: "Whilst ensuring safety of the public is a priority to Network Rail, the operational efficiency that would be affected if there were an incident, near miss, or trespass, is also a material factor in their rationale for closing the crossing." She concludes at para 33: "Both public safety and operational efficiency of the railway are issues that are in the public interest and hold some weight when considering the rationale and merit of the Order."
- 10.8 On the diversion route, which was considered by the objector to be considerably longer and a much less pleasing walk, whereas the shorter route to be stopped up offered 'commanding views' and was an enjoyable walk across open fields, the Inspector agreed. However, she thought that whilst much longer, it was not substantially unsuitable for the type of recreational walks being undertaken (See OD 20). In addition, she agreed it was not as enjoyable; but that it did provide a safe green route for all users, providing easy access, without limitation.
- 10.9 In concluding "Both public safety and operational efficiency of the railway are issues that are in the public interest and hold some weight when considering the rationale and merit of the Order" and that "The quite apparent disadvantage of the diversional route is that it is significantly longer... the additional time and distance would likely represent a proportionally small increase in overall journey time... There is comparatively greater public benefit in enabling the development to take place, providing a safe, easily accessible route by foot and on bicycle without the need to negotiate the limitations of the current footpath." (See OD 33-35).

Darkies Order Decision

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- 10.10 Inspector Elliot in his determination for his Darkies Order Decision stated (OD 68) "...Whilst the primary focus is the safety of the public it is clear that other factors can be taken into consideration. These other factors need to be put in the balance when considering whether it is expedient to confirm the Order". He continued (at OD 69): "Concerns are raised as to the safety of the East Burton Road and Burton Road which would need to be used as alternative routes in the event footpath 14 is closed". In accepting Network Rail had previously liaised with relevant bodies which raised no concerns as to highway safety, nor had the highway authority seen it necessary to consider any additional safety measures be implemented along these 'alternative routes', continued (at OD 73): "In any event [as with Peckfield] NR has undertaken consultation with the highway authority and there is nothing to indicate that the alternative routes are unsafe such that it is not expedient for the Order to be confirmed."
- 10.11 In recognising "Network Rail is a regulated statutory undertaker bound by a statutory framework with a legally prescribed duty and responsibility to promote safety, improve railway efficiency and to enhance and improve the network in operational terms," the Inspector correctly concluded that "Network Rail's need to comply with its operating licence, which extends to those who use level crossings, in addition to those who may misuse those crossings or trespass onto the line." He stated (at OD 88): "Bearing this in mind the requirement, under the terms of a licence, to provide for public safety is also in the interest of the public" such that it features as an important part of the overall expediency balancing exercise.
- 10.12 When determining the balance for closure, and in acknowledging Network Rail's need to promote operational efficiency, he stated (at OD 89) "... there have been no known fatalities at the crossing and the NRA 2018 records that no safety events had been known to occur in the previous 12 months. However... ...continued use of the crossing will fail to promote operational efficiency and safety. Should an incident occur at the crossing then any temporary speed restrictions or line closure would result in delays to train services and the potential for timetable disruption."

Moor Lane Order Decision

- 10.13 Inspector Cruickshank BSc, MSc (Hons), MIPROW, in her Order Decision for Moor Lane also commented on the high cost of alternative measures to mitigate risk. At OD66 she stated "Taking account of the requirements for NR to manage public money responsibly, alongside the CBA [Cost Business Analysis], I am satisfied that there is no business case for any of the mitigations that could make the crossing acceptably safe. The simpler mitigations, such as those discussed above may be capable of being met through contingency funding, but this would not alter the unacceptable safety risk arising from the sighting deficiency."
- 10.14 She concluded at paragraph 70: "Taking account of all relevant matters I consider that it is expedient to make the Order in the interests of the safety of members of the public using, or likely to use, the crossing. I understand that objectors feel that the crossing is safe to use and wish it to be reopened. However, I am satisfied that it is not reasonably practicable to make the crossing safe for use by the public."

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- 10.15 Moreover, in considering Network Rail and the Council's Public Sector Equality Duty under the Equality Act 2010 in her Moor Lane Order Decision, the Inspector commented (at OD95): "In my consideration of the draft Order, I have my own PSED in mind. Although closure of the crossing would lead to some users having to travel further if wishing to make similar journeys to those previously available, I am satisfied that it would also improve their safety, as the identified alternative crossings of the railway are grade-separated. In weighing the positives and negatives in relation to these matters I do not find that closure of the crossing would have disproportionate negative impact on those with protected characteristics."

Mountsorrel Order Decision

- 10.16 Mountsorrel was also a Bridle Crossing which was ultimately closed without the provision of a bridle bridge or alternative diversion, although many options were considered. On the Extinguishment, Inspector Yates BA (Hons) MIPROW noted (at OD36) "The shortest distance in order to travel between the north and south sides of the crossing by an alternative route is around a mile... Cyclists and equestrians travelling northwards have to ride along Sileby Road, South Street and Melton Road before joining [Bridleway] 120..." On safety of the alternative route he stated at OD40: "I consider the issue with horse riders and cyclists to be less about the extra distance required to connect with the bridleway network and more to do with the need to ride for a greater distance on public roads, which I address below." He continued at OD42: "Whilst riders will have to ride on roads elsewhere as part of a riding circuit, the closure of the crossing would lead to horse riders and cyclists having to ride a greater distance on roads... The issue of cyclists and horse riders using the local roads needs to be compared with the alternative of traversing the crossing..." and continuing at OD55: "On the basis of the information provided to me, I find that there is no reasonably practical alternative means of crossing the railway in this locality to warrant the recommendation that a bridge or tunnel Order should be made."
- 10.17 On the debate of a bridging option, the Inspector accepted the reasons why it was not practical to build a bridle bridge and commented at OD49: "In my view, this [a stepped footbridge] is the most viable option for the provision of a crossing of the railway. However, a footbridge by itself does not take account of the needs of cyclists or horse riders. The impact of a bridleway bridge in this location would again be greater...".
- 10.18 He concluded at OD56, "I have concluded that the crossing poses a significant risk to the safety of the public and the evidence of NR is supportive of there no practical means of making the crossing safe. The alternative route available will be less convenient to the public than proceeding directly across the railway lines but this has to be balanced against the safety of the crossing. Further, I am not satisfied that there is a reasonably practical alternative means of crossing the railway lines that would make provision for all types of users.

Conclusion from other Closure Orders

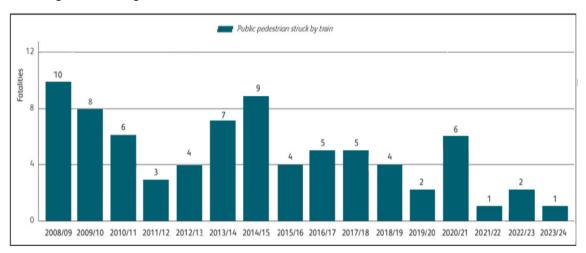
10.19 In having very carefully reviewed the evidence for their Order Decisions in each case, as listed, these Inspectors found for confirmation and (unsurprisingly) found, consistently, that significant weight should be given to ensuring safety of those who use or are likely to use the level crossing and also, in promoting operational efficiency of the railway. In my view, that is consistent with / in accordance with, and supports Network Rail's

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approach as I have set out above, and in my opinion is equally applicable here, against the 5 Level Crossings.

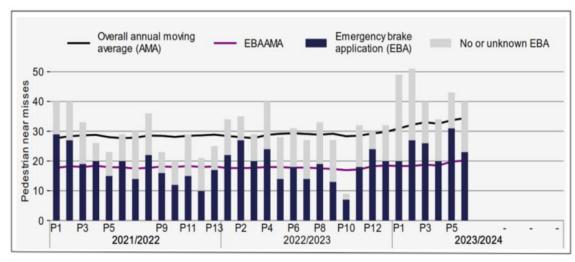
11. Fatality & 'Near Miss' Incidents

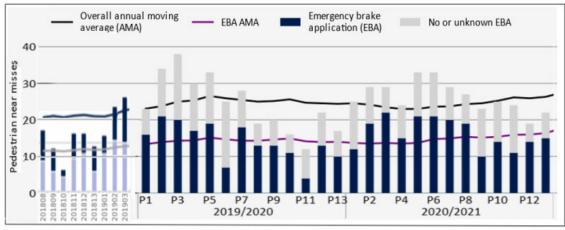
- 11.1 The RSSB records that 77% of all accidental level crossing fatalities involve pedestrian users, with the remaining 23% made up by vehicle occupants (drivers and passengers).
- 11.2 The last confirmed pedestrian fatality occurring on one of Network Rail's level crossings was on 04 August 2023 on Southern Route, the driver of the London Charing Cross to Hastings train reported, after just leaving Stonegate Station in Sussex, the train was travelling at 70-75mph when he saw a female pedestrian walking across the level crossing. He sounded his horn and the pedestrian started to run clear; although he applied the emergency brake the train fatally struck the pedestrian.
- 11.3 During 2022-23 there were 2 accidental fatalities confirmed (not including those still under investigation or awaiting coroner's verdicts or those suspected as suicides). At Darby Green on 19 September 2022 on Wessex Route, the driver of the Redhill to Reading service reported that just after just leaving Blackwater Station, whilst powering up towards the crossing, he saw an elderly woman walk onto the crossing. The train was at 30mph. The driver sounded the horn, but the female did not look up and continued walking over the crossing. The emergency brake was applied but the train struck the elderly lady.
- 11.4 On 21 April 2022 an elderly lady and her dog were fatally struck by an empty coaching stock train at Lady Howard footpath crossing, Ashtead in Surrey. The train involved was travelling at 62 mph. Another train had passed over the crossing in the opposite direction immediately before the accident occurred.
- 11.5 In 2021-22 one fatality occurred, but the previous year saw six deaths at level crossings (2020-21), up from two in 2019-20.
- 11.6 During 2018-19 the number of fatalities was 4 (excluding suicides). Over the preceding 10 years, RSSB records the number of pedestrians (including cyclists) killed at level crossings, excluding suicides, as follows:



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- 11.7 These figures could have been much worse with a sharp increase in 'near miss' events with pedestrians also being recorded. Alarmingly, over the past 5 years, there has been a worsening trend of (reported) 'near misses' involving non-vehicular users. Ian Prosser, CBE ORR's HM Chief Inspector of Railways stated in a media release September 2021: "It is unfortunate that despite fewer trains running on the network in the last year we have seen an increase in the number of deaths at level crossings."
- 11.8 Network Rail continues to see the number of reported non-vehicular near miss events to be regularly over 30 each month. It is the highest level of consistent period on period near miss events since reporting began in 2009/10. Ian Prosser also stated during his press release: "I remain concerned about the increase in near misses with trains that often pass through at very high speeds. This past year we have seen shocking CCTV footage of reckless behaviour at level crossings and I cannot stress enough the danger people are putting themselves in when not using a crossing safely."
- 11.9 Near misses with pedestrians is high, and climbing, with 117 events recorded in Q2 of 2023/24. In addition, the number of pedestrians crossing when unsafe at level crossings continues to rise. RSSB advises that due to societal changes because of Covid-19, the usage profile at level crossings is thought to have changed while the overall numbers of users have increased. It is thought that this may be leading to the increase in incidents as train services return to pre-pandemic levels, but new behaviours remain in place and the annual moving average of near misses with pedestrians are increasing:





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- 11.10 The chart above, provides an insight into when the Emergency brake was applied, or would have been applied given more time (shown as Emergency brake application (EBA in the chart). This indicator provides a more objective view of the trend in near misses, and on average, the reported number of incidents equates to a near miss occurring somewhere on the network every single day. This also does not take account of those near misses that have not been reported.
- 11.11 Below is a recent example of (presumably experienced) ramblers irresponsibly crossing the railway at a foot crossing located between Shoreham and Otford, Kent, in July 2020.



11.12 The train sounds its horn at the stage shown in the first photograph, which would have been heard by the ramblers before they crossed the railway at the crossing, around the bend. Approximately 5 seconds later the driver sees the ramblers on the crossing. Only 4 seconds from the crossing, the rambler (right) is shown to sprint over the lines despite seeing the fast-oncoming train and clears the train less than 1 second from being struck.



- 11.13 The only reason he survived was because the train driver hit his emergency brakes. The Blackfriars to Sevenoaks Thameslink service involved in the above incident had been so close to striking the last pedestrian, that the train driver left his cab after it had stopped, and walked back along the line, in order to ensure they were physically unharmed.
- 11.14 Only a few days later, a similar incident at nearby Seal (also in Kent) saw another driver forcibly apply his emergency brakes as a woman ran across, directly in front of his train.
- 11.15 The RSSB tells us that there is a well-established relationship between accidents at level crossings and such 'near-miss' events. Such near miss data is important to Network Rail's expert understanding of level crossings where a more serious accident may happen. Network Rail holds evidence from all level crossing accidents that demonstrates there is a clear relationship between the number of near-miss events and the number of collision accidents involving a train and either a pedestrian or vehicle. The more near-miss events that occur, the more likely a fatal or injury-causing accident will occur.

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- 11.16 Actions, informed by incidents such as near miss events, include discussions with relevant local authorities, train operators or the authorised users on the potential for closure or diversion, as well as the consideration of the cost and benefits of engineering and mitigation measures.
- 11.17 Network Rail has considered all of the above in relation to the Level Crossings included within the Order.

Rail Accident Investigation Board Investigations

- 11.18 To highlight the cause of level crossing fatalities, with recommendations, the RAIB has investigated 20 of the many fatal incidents involving pedestrians at level crossings on Britain's main line railways since it became operational in October 2005, up until the Lady Howard accident in 2022. A broad section of accidents include:
 - 11.18.1 <u>RAIB Incident Report 08/2010</u>³ Fatality at Fairfield PFP Little Bedwyn 06-05-2009. A local resident and frequent user was struck and fatally injured whilst walking her dogs. It was thought that she may have been distracted when she approached the crossing and in making her decision to cross the line by the presence of her dogs.
 - 11.18.2 RAIB Incident Report 15/2012⁴ Fatality at Gipsy Lane PFP LC Needham Market 24-08-2011. A pedestrian was fatally injured on Gipsy Lane footpath level crossing at Needham Market. On seeing the pedestrian on the crossing the train driver sounded his horn, but the pedestrian continued to cross and was struck by the train. The report concludes that she moved from the adjacent line into the path of the train because she either did not see the approaching train, she misjudged the speed of the train, or she believed that the train was approaching her on the line she was standing on.
 - 11.18.3 For vulnerable users, the warning of an approaching down line train was not sufficient to enable them to use the crossing safely. the warning time for the approach of down trains was insufficient.
 - 11.18.4 RAIB Incident Report 18/2014⁵ Fatality at Barratts Lane No2 PFP 26-10-2013 A pedestrian was struck and fatally injured by a train. The train was travelling from Nottingham towards Birmingham, at the same time, a London to Nottingham train was slowly approaching the crossing from the other direction. It is likely that the pedestrian had concentrated her attention on the first train only, and did not notice the 2nd train approaching from the opposite direction. The front-facing camera from the London to Nottingham train showed the pedestrian approached the crossing and waited at the gate for 17 seconds before opening it; she then started to cross 9 seconds later (the train was stopped at a red signal for part of this time).
 - 11.18.5 It is most likely that, having seen the London train had stopped at the signal, she waited until she had determined that the train was not moving before

³ RAIB: Fatal accident at Fairfield level crossing

⁴ RAIB: Fatal accident at Gipsy Lane footpath crossing

⁵ RAIB: Fatal accident at Barratt's Lane No.2 footpath crossing

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deciding to cross the line. However, she started to cross the line as the 2nd train was approaching from the opposite direction (paragraph 26). It is likely that the pedestrian was distracted by the presence of the first train standing at a nearby signal (paragraph 33).

- 11.18.6 RAIB Incident Report 23/2016⁶ Fatality at Grimston Lane PFP LC 23-02-2016. The train driver reported striking a person at Grimston Lane Footpath level crossing, Essex (Anglia) on the single line between Trimley and Thorpe Lane. The man appeared to see the train, acknowledged the trains signal, but stepped out to cross. He was unable to fully reach a position of safety before the train struck him.
- 11.18.7 The RAIB concluded that he was either unaware of the train at the time he decided to cross, because he did not look, or that he misjudged the time he needed. The age and health of the pedestrian meant that he fell into the category of people considered, by Network Rail's guidance, to be 'vulnerable users'.
- 11.18.8 <u>RAIB Incident Report 13/2019</u>⁷ Fatality at Tibberton No. 8 PFP LC 06-02-2019. At 09:58 a passenger train struck and fatally injured a pedestrian at a passive footpath crossing. The foggy weather conditions had made the level crossing unsafe to use.
- 11.18.9 The pedestrian had seen a train approaching in one direction, waited for it to pass and then started to cross. However, with the foggy conditions and the first train moving away, the pedestrian was unaware of the 2nd train approaching, and he started to cross the railway when there was insufficient time for him to reach a position of safety on the other side of the railway. He walked directly into the path of the speeding train.
- 11.19 The foregoing are clear examples of the few fatalities that RAIB has investigated and determined the cause. Any of those incidents could occur at the 5 Level Crossings in the Order. I could also identify and highlight many more incidents both investigated and not investigated by RAIB, in comparison with the circumstances at the Level Crossings, where a fatality has occurred through an error of judgement by the pedestrian, and which had unfortunately resulted in a fatality.

12. Conclusion

- 12.1 It is my clear opinion that the proper application of Network Rail's governing policy, legal duties and responsibilities, and licence, together with all other relevant standards advocated by ORR (as Network Rail's regulator) and by relevant rail industry bodies, together reinforce the case for the closure and removal of the Level Crossings.
- 12.2 The above overview of governing strategic policy, viewed against the background of the relevant statutory framework, compliments Network Rail's assessment of the safety risk

⁶ RAIB: Fatal accident at Grimston Lane level crossing

⁷ RAIB: Fatal accident at Tibberton No. 8 footpath crossing

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- that is presented by the Level Crossings, when taking full account of all reasonably practicable mitigations.
- 12.3 For the reasons given above and across the evidence of my colleagues, Network Rail is strongly of the view that the circumstances at each crossing, viewed both in safetyspecific terms and in overall terms, is strongly supportive of the Order being made.
- 12.4 I would respectfully invite the Inspector to make the Order.

Witness Declaration

I have declared as follows:

- i. This Proof of Evidence includes all facts which I regard as being relevant to the opinions that I have expressed and that the Inquiry's attention has been drawn to any matter which would affect the validity of that opinion.
- I believe the facts that I have stated in this Proof of Evidence are true and that the opinions expressed are correct.
- iii. I understand my duty to the Inquiry to help it with matters within my expertise and I have complied with that duty.

Signed:

Dated: 06 February 2024

Jerry Greenwood

Head of Liability Negotiation, Network Rail