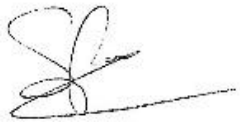


RDG Guidance Note Proposals to Reduce Permissible Speed Restrictions

Written by



Steve Price
Operations Planning Advisor, RDG

Submitted by:



Dan Mann
Train Service Delivery Team Leader, RDG

Authorised by:



Rob Warnes
Performance & Planning Director, Arriva Rail Northern
Chair, RDG Performance and Planning Forum

Synopsis

This Guidance Note draws together current understanding and good practice, and provides advice and prompts for Train Operators dealing with proposals to permanently reduce Permissible Speed Restrictions over one or more sections of line

Applicability

This Guidance Note has been prepared for Train Operators. Its content may also be of use to others.

Issue record

This Guidance Note will be updated when necessary by distribution of a complete replacement.

After first issue, amended or additional parts of revised pages will be marked by a vertical black line in the adjacent margin.

Issue	Date	Comments
One	June 2018	First issue following development and approval

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1 About this document

1.1 Responsibilities

- 1.1.1 Copies of this Guidance Note should be distributed by train operators (Operators) within the RDG's Performance & Planning Forum to persons within their own companies for whom the content is relevant when considering proposals to reduce Permissible Speed Restrictions (PSRs).

1.2 Explanatory note

- 1.2.1 The Rail Delivery Group (RDG) produces Guidance Notes for the information of its members. The RDG is not a regulatory body and compliance with its guidance is not mandatory.
- 1.2.2 These Guidance Notes are intended to reflect good practice. RDG members are recommended to evaluate the guidance against their own arrangements in a structured and systematic way. Some or all parts of the guidance may not be appropriate to their operations. It is recommended that this process of evaluation and any subsequent decision to adopt (or not to adopt) elements of the guidance should be documented.

1.3 Guidance Note status

- 1.3.1 This document is not intended to create legally binding obligations between RDG members and should be binding in honour only.

1.4 Questions and supply

- 1.4.1 Any questions concerning the content or supply of this document should be directed in the first instance to your company's Performance & Planning Forum representative who will refer them onto the RDG as appropriate.
- 1.4.2 Copies of this Guidance Note may be obtained from the members' area of the RDG website, downloaded from the Rail Safety & Standards Board [Standards Catalogue](#) or requested from the RDG Train Operators' Operations Scheme.

1.5 Review

- 1.5.1 This document will be subject to periodic review.

2 Purpose and Scope

2.1 Purpose

- 2.1.1 This document seeks to introduce recommended practice, reflecting current thoughts and expectations, to provide an *aide memoire* to members of the RDG's Performance & Planning Forum on what to look for when considering future proposals to reduce Permissible Speed Restrictions (PSRs). As such, it advises members on that recommended practice, providing the opportunity for members to be better informed and to be better able to gauge the timetable, capacity and commercial impacts arising from proposals to reduce PSRs, and to consider aligning of interests between members.

2.2 Scope

- 2.2.1 This guidance applies to employees of Operators who are members of the RDG's Performance & Planning Forum and who may be required to interface with an Infrastructure Manager (IM) over a proposal to reduce a PSR, together with those responsible for ensuring and assuring levels of knowledge and competence.
- 2.2.2 For the purposes of this document, a reduction in a PSR refers to a decrease in the permissible speed of some or all trains over a given section of the railway.
- 2.2.3 In the interests of simplicity, this guidance has not been developed to consider more complicated or major schemes, where considerable signalling alterations and other enhancements, proposed against broader objectives, may lead to PSR changes. The reader may wish to consider

RDG-GN040 "Delivering Good Schemes – Conventional Re-signalling";

RDG-GN/NTI/001 "Delivering Good Schemes – ETCS"; or

RIS-0713-CCS "Lineside Signalling Layout Driveability Assessment Requirements".

3 Definitions and Abbreviations

Abbreviations used more than once in this document or which may be unfamiliar to the reader are explained here

APCO	Automatic Power Changeover (e.g. bi-mode switching between a power supply drawn from an electrification system and that generated on-board)
AWS	Automatic Warning System
ETCS	<p>European Train Control System. A train control system that provides Automatic Train Protection and movement authorities via an in-cab signalling system, offering common standards across Europe on main lines in support of interoperability and an open market for rail services. ETCS is also being installed outside Europe.</p> <p>ETCS is one of the four components of European Rail Traffic Management System (ERTMS) – the others being Global System for Mobile Communications-Railway (GSM-R), Traffic Management and European Rules. ETCS and ERTMS are often used interchangeably but mean different things</p>
Exceptional Load	A load carried on a rail vehicle, including, for example, a container, swap body or other traffic or plant such as on-rail maintenance equipment or empty coaching stock, where the rail vehicle size and / or axle loading requires special authority for the movement and / or the application of special conditions of travel for all or part of the route to be used
IM	Infrastructure Manager (e.g. Network Rail) – the organisation that provides and maintains the rail infrastructure and may also have responsibility for long term planning, capacity allocation, timetable development, the setting of track access charges and providing access to other rail-related services, such as terminals, sidings and marshalling yards
Narrative Risk Assessment	Detailed record of risk assessment carried out by an Infrastructure Manager for a level crossing
Network	The main line infrastructure controlled by an IM in Great Britain, comprising railway tracks, signalling and electrification systems, bridges, tunnels, level crossings and viaducts, together with sidings and connections to third-party controlled infrastructures. Typically, the extent of the Network will be shown in the Sectional Appendix
NCN	Network Change Notification – the formal issuing of a Network Change proposal
Network Change	Formal consultation, normally carried out by the IM, proposing change to the Network, the use of which permits the industry to be based on a sustainable footing, from a timetable, capacity or commercial perspective. See Network Code, Part G
Operator	Any public or private undertaking the principal business of which is to provide services for the transport of goods and/or passengers by rail, with a requirement that the undertaking must ensure traction. This also includes undertakings which provide traction only

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OTDR	On-Train Data Recorder – also known as OTMR (On-Train Monitoring Recorder) (a recording unit offering similar functionality to an aircraft flight recorder)
Passive Level Crossing	Footpath, bridleway or private vehicle level crossing which require users to make safe decisions to traverse based on sighting alone or interface with Signallers using telephones (where provided)
Protected Level Crossing	Crossing equipped with stop lights, alarms and/or gates/barriers which warn users of approaching trains
Principal Timetable change date	The date on which the Principal Working Timetable for a given 12-month period starts, being the Sunday immediately after the second Saturday in December
PSR	Permissible Speed Restriction
RDG	Rail Delivery Group
STNC	Short-Term Network Change. A Network Change proposed to apply for a limited period, usually for no more than 2 years (although longer durations can be agreed)
Subsidiary Timetable change date	The date on which the Subsidiary Working Timetable starts, being midnight on the third Saturday in May during the currency of the Principal Timetable. The Subsidiary Timetable allows adjustment of the Principal Timetable
Timing Allowances	Additional time added to train schedules to improve robustness of those schedules. See Timetable Planning Rules documentation. Usually includes: <ul style="list-style-type: none"> i. Engineering Recovery Allowance; ii. Pathing Allowance; iii. Performance Allowance; and iv. Timing Adjustment
TPR	Timetable Planning Rules, normally published by an IM
TPWS	Train Protection Warning System
Train Operator	See Operator
TSR	Temporary Speed Restriction
Vulnerable Users	Users of level crossings whose appreciation of risk may be diminished, e.g. children, elderly, disabled, vision impaired, pushchair users and those with learning difficulties or using mobility aids

4 Background

4.1 Introduction

There are many reasons why an IM might propose a reduction in PSR. This document groups the most common reasons into three categories: mitigating safety risk, management of infrastructure and miscellaneous. Some reasons may fall into more than one category.

4.2 Mitigating Safety Risks

Safety risk mitigation is usually associated with a risk assessment, having considered applicable standards and the likelihood and consequence of a safety event occurring. This may well consider both Operator and IM risks and be informed by participation from Operator and IM representatives. Where a risk assessment already exists, alterations to methodology, calculation or input values associated with likelihood and consequence may cause the understanding of the risk to change and for the need for additional mitigation to be contemplated. One such mitigation may be a proposal to reduce the PSR. Occasionally, enforcement action against the IM by a statutory body may be the reason for a proposed change.

4.2.1	Signal Passed at Danger	Reducing likelihood or consequence of Signal Passed at Danger (e.g. leading to collision or derailment)
4.2.2	Passive Level Crossing Sighting	Providing Level Crossing users with requisite sighting time of an approaching train and to cross safely. Where vulnerable users are present, additional sighting time is required
4.2.3	Protected Level Crossing Equipment	Providing the train driver with requisite sighting time of a locally monitored level crossing to confirm the equipment is working correctly and that the crossing is clear; or Reducing the severity of a collision with road vehicles that have blocked back onto an automatic level crossing; or Permitting the level crossing lowering sequence to be completed within the times prescribed (linked to strike-in points that initiate lowering sequences)
4.2.4	Collision	Reducing likelihood or consequence of collision (e.g. with buffer stops)
4.2.5	Signal Sighting	Providing train driver with sufficient time to view approaching signal and to take appropriate action
4.2.6	Station platforms	Reduction in turbulence caused by passing of trains. Links to platform design and risk of overcrowding
4.2.7	Excessive speed	Reducing likelihood or consequences of a train over-speeding that could lead to derailment or on-board injuries

4.3 Management of Infrastructure

PSR reductions in this category can arise for several reasons, including changes to asset design, or to the standards or legislation applicable to those designs, or a recognition that the asset design is unable to sustain the current speed.

4.3.1	Asset Design	Design of an asset no longer supports original speed
4.3.2	Asset Condition	To reduce ongoing maintenance requirements, preserve remaining asset life prior to renewal or required to permit continued safe passage of trains
4.3.3	Asset Renewal	Inability to reproduce current capability without use of bespoke or more expensive components; or Delay to a renewal (e.g. for affordability or deliverability reasons) leading to a need to sustain asset condition
4.3.4	Structure clearances	Achieving or maintaining gauge clearances for certain types of train
4.3.5	Meeting new or modified standards or legislation	Where the new or modified standard or legislation requires action to be taken retrospectively and that, in turn, affects the design of the asset and hence the PSR
4.3.6	Correcting long-standing deficiencies	Improved compliance with standards or legislation (usually associated with some other intervention that allows, or requires, the tackling of existing non-compliances or derogations)

4.4 Miscellaneous

This category includes other reasons that could give rise to the need to reduce a PSR, primarily for operational or procedural factors.

4.4.1	Reducing signalling overlaps	Provision or preservation of operational or timetable flexibility
4.4.2	Reducing speed differences between the various routing options at facing junctions	Avoiding or reducing the need for, or severity of, signalling approach controls, thereby providing or preserving operational or timetable flexibility
4.4.3	Reducing pressure waves in tunnels	Passenger comfort, freight load integrity and infrastructure asset integrity
4.4.4	Attainable speed profile	Smoothing of speed profile to eliminate unattainable peaks (usually proposed following agreement with Operators)
4.4.5	Correcting long-standing deficiencies	Improved compliance with standards or legislation (usually associated with a re-calculation of parameters that gave rise to the original PSR, e.g. train braking performance)
4.4.6	Removing a Temporary Speed Restriction (TSR)	Allowing a long-standing TSR (one that has been, or is likely to be, in place for longer than six months) to become permanent to allow any timetable, performance of commercial impacts to be identified, analysed and changes made. See also paragraphs 4.5.4 and 5.1.16

4.5 Other

- 4.5.1 Part 5 of this document provides a list of Core Principles for Operators to be aware of. These draw on the main themes identified by Operators.
- 4.5.2 The Core Principles, in turn, inform a series of checklists (Part 6) designed to prompt systematic consideration of some of the more common areas where Operators' businesses could be impacted by a proposal to reduce PSRs. These are grouped by typical functions or activities within Operator organisations.
- 4.5.3 Appendix A provides an illustration of how to use the various checklist questions to inform consideration of one specific example. The example chosen – the use of PSRs to control sighting risks associated with passive level crossings – was considered beneficial following Operator feedback.
- 4.5.4 During 2017 and 2018 the RDG's National Task Force has challenged Network Rail to reduce the overall number of TSRs in place on the network to improve timetable resilience and performance. At the time of drafting, this is causing several long-standing TSRs to be re-examined.

5 Core Principles

5.1 Principles

- 5.1.1 Fundamentally, a proposal to reduce a PSR, is an exercise in:
- understanding the problem that requires to be addressed and what has changed that requires a reduced PSR to be considered;
 - considering whether the reason for the PSR reduction is time-limited and how it fits with broader strategic aims (whether IM-, Operator-, industry- or funder-led);
 - recognising options that have been examined, whether rejected or proposed;
 - determining the timetable, capacity and commercial impacts of the proposal;
 - identifying mitigations to reduce those impacts; and
 - forming a view on whether the impacts that remain are material to the IM's infrastructure, other IMs and to Operators.
- 5.1.2 Operators want to receive proposals that have been well considered, because the proposed outcomes may influence or affect their businesses, potentially for many years in the future. It follows that proposals for change should be well articulated (*i.e.* make a compelling case for change) and accompanied by a summary of the anticipated impacts of the proposal being implemented, together with details of options that have been considered. Where insufficient information is provided or further evidence is required, Operators should identify what they need to properly consider the proposal and ask for this to be supplied.
- 5.1.3 Operators are encouraged to collaborate with IMs when considering industry issues, so that sustainable and cost-effective solutions are developed jointly. Past experiences show that early engagement between IMs and Operators improves the chances of successfully finding solutions that are mutually acceptable, provided that all parties approach such engagement in an open, transparent and pragmatic manner.
- 5.1.4 Although levels of IM funding and expected outcomes from such funding are projected to be constrained in the foreseeable future, it is appropriate that Operators should explore with IMs how best to achieve the outcomes desired and, where necessary, how to mitigate any impacts. The use of technology or innovative solutions should be considered, recognising any constraints that may be in place and any applicable timescales.
- 5.1.5 Operators should be alert to the possibility that an IM may well consider each proposal to reduce a PSR in isolation from others that have been agreed previously or which may be proposed in the future. This creates a risk of increasing cumulative impacts on performance or the timetable, with these becoming significant, even though an individual proposal is deemed inconsequential.
- 5.1.6 Business cases are best developed from an industry perspective, rather than solely considering costs and benefits arising to any one party, and should take due regard of applicable affordability and deliverability criteria, as well as to any strategic outcomes agreed or supported by the industry. Where a reduced PSR is to apply for a limited time, costs associated with reversing the change and restoring previous capability should be included as well as costs incurred by Operators in managing the changed capability.
- 5.1.7 Care is needed that Operator representatives are not perceived or seen to be agreeing to proposals without full consideration of the implications within the

company, and to its suppliers and contractors. Suggestions on how Operators could organise themselves to meet this need can be found in Part 6 of RDG-GN040 “Delivering Good Schemes – Conventional Re-signalling”. Records should be kept of all discussions held and agreements made, to provide an audit trail.

- 5.1.8 In respect of Network Rail, its “...network licence requires the company to accurately describe and maintain (subject to network change) the baseline capability for which it is funded for the benefit of its stakeholders.” For the 2014-2019 Control Period, the Office of Rail and Road considers “...that the baseline capability of the network would be that in place as at 1 April 2014.” (source: Network Rail Monitor).
- 5.1.9 An IM may document and make available to Operators its overall line-speed capabilities. For example, Network Rail produces Network Specifications on a Route basis which can be used to establish the baseline capability that Operators can expect.
- 5.1.10 Proposals to reduce PSRs will change details contained within the Sectional Appendix, will require a change to train driver behaviour and may well require briefing or formal training of train crew. The proposals may also impact on Operators in other areas of their business. As such, proposals should be tabled formally by IMs via a Network Change process, leaving sufficient time for completion of this process before any change is implemented.
- 5.1.11 A Network Change should never come as a surprise to an Operator. Increasingly, IMs are ensuring discussion with Operators before formal proposals are issued. This may be via the issue of a pre-consultation draft, using the same distribution as would apply to a Network Change proposal, but other approaches and engagements may be employed. IMs may well provide opportunities to discuss developing ideas with, and seek feedback from, Operators, either through bespoke meetings or via additional agenda items at existing meetings.
- 5.1.12 Where there is a risk to safe operation, the IM may well have restricted the use of part of its infrastructure or imposed a Temporary Speed Restriction (TSR) to control any risks immediately, to provide time to develop and consider the various options to resolve the problem more permanently and to allow time to engage with Operators. The options considered after imposition of a TSR need not include a permanent reduction of the PSR.
- 5.1.13 Where a restriction of use or TSR is in place, this is usually sufficient to manage the immediate issues involved and permits information to be generated on the anticipated impacts of such a restriction, if made permanent.
- 5.1.14 It is appropriate to note that the speed categories available with a TSR can be limited and that there may be more flexibility of speed categories available in a resulting PSR. In other words, a reduced PSR need not directly replicate the TSR, either in terms of speed or commencement / termination.
- 5.1.15 Different PSRs may apply to differing categories of trains (e.g. passenger/freight differential speeds) or permitting some types of rolling stock to travel faster (e.g. Sprinter speeds).
- 5.1.16 Any TSR or restriction of use likely to be in place for longer than six months should be considered for Network Change (source: Network Code). On its own, the six-month timeframe is insufficient justification for a proposal to permanently reduce a PSR, *i.e.* the proposal should examine root causes and a variety of options.

- 5.1.17 To prevent erosion of industry capability over time, even though Network Change has been followed, Operators should maintain an overview of PSRs that have been reduced and should require IMs to have processes in place to review and where applicable reverse previous decisions. For example, a reduced PSR applied to manage the deferral of a track renewal should be reversed once the renewal has been re-planned and subsequently delivered. The use of the Short-Term Network Change (STNC) process can be helpful in this regard. In some circumstances, the Sectional Appendix can be used to record the Network Change reference which applied a reduced PSR.

6 Checklists

Roles	Consideration	Rationale for consideration
6.1 Operator (all within company <i>(incl. suppliers and contractors)</i>)	1. Trade-offs to limit impacts of proposal	Suggestions and ideas on possible areas for further joint exploration between the parties
	2. Discuss with equivalent roles in other companies to gauge impacts	Alignment of responses or transparency of additional factors for consideration
6.2 Customer	Messaging	How to communicate any worsened journey times or timetable impacts (if applicable), maintaining positive outward-facing approach in keeping with “In Partnership for Britain's Prosperity” principles
6.3 Communications	Support	Support for internal briefings and external messaging, together with materials & explaining the rationale
6.4 Station Management	Platform edge risks (if PSR is adjacent to station platform)	a) Continued applicability of safety risk mitigations to customers; b) Opportunity to reduce clearances to platforms, assisting platform train interface risk mitigation

Continued/

Roles	Consideration	Rationale for consideration
6.5 Performance	1. Continued resilience of timetable	<ul style="list-style-type: none"> a) Need for timetable adjustments to be made (see 6.9); b) Consideration against performance metrics (both industry and Operator); c) Wider performance of route or section of line (e.g. how new PSR might change incidence of sub-threshold delay)
	2. Managing the transition between PSR change being made and adoption within timetable schedules of any changes to TPR	Ensuring correct attribution and understanding of any time loss
	3. Proximity of Hot Axle Box or Wheel Impact Load Detectors, <i>incl.</i> GOTCHA®	Likelihood of increased alarms and trains being stopped following additional braking, also any changes to the operational response to an alarm
	4. Regulating polices & Automatic Route Setting / Traffic Management algorithms	More precise presentation of trains at conflict points may impact on priorities that inform regulating decisions
	5. Seasonal impacts / autumn mitigations	<p>Consideration of Low Rail Adhesion or weather risks, and possible change to agreed or proposed mitigations;</p> <p>Ability of trains to climb gradients with reduced momentum (to avoid stalling) with existing lengths, loads and weights</p>
	6. Schedule 8 impacts	Reduction in delays – should be a positive from proposal
	7. Impact on franchise / concession obligations	Informing review of obligations (e.g. schedule 7.1)
	8. Background information on impact of TSR (where one has been in place)	Source of information on experienced or anticipated impacts

Continued/

Roles	Consideration	Rationale for consideration
6.6 Driver Managers (incl. Operations Standards) (continues next page)	1. Information on anticipated impact of proposed reduction of PSR	a) Driver Managers are a source of advice on experienced or anticipated impacts; b) OTDR downloads before and after any TSR was imposed can assist understanding; c) Consider simulating new PSR to gain OTDR data on anticipated impact
	2. Briefing and training	i. Review / update briefing / training courses and support materials; ii. Additional support required by drivers who sign the route, e.g. at-risk individuals
	3. Driveability of new speed	a) Risks of over-speeding or performance loss; b) Increased coasting to meet professional driving standards; c) Ability of trains to climb gradients with reduced momentum (to avoid stalling) with existing lengths, loads and weights
	4. Signal Passed at Danger / station overrun	i. Risks created or avoided by new PSR, lineside signage, AWS & TPWS provision; ii. Impact on braking trigger points
	5. Signal sighting	Sub-optimal speed of approach may create new risks or allow existing mitigations to be reduced or removed
	6. Impact on signalling approach controls & flashing aspects	Sub-optimal speed of approach, potentially giving rise to increased safety risk or exacerbating time loss through later triggering of controls
	7. Impacts on route knowledge	Also consider diversionary routes
	8. Conductor rail gaps or overhead line neutral sections	Sub-optimal speed of approach, potentially giving rise to increased risk of trains becoming stranded
	9. Power changeover, <i>incl.</i> Automatic Power Changeover (APCO) balises	Sub-optimal speed of approach, requiring changes to siting of equipment and lineside reminders
	10. TPWS grids & AWS ramps	a) PSR may introduce new or re-locate existing provision, or cause trigger speeds to be altered; b) Effect on stopping points at signals / stations

Continued/

Roles	Consideration	Rationale for consideration
6.6 Driver Managers (incl. Operations Standards) - continued	11. Automatic Selective Door Operation (ASDO) and Enhanced Permissible Speed (EPS) balises	Sub-optimal speed of approach, potentially giving rise to increased safety risk or exacerbating time loss through later triggering of controls
	12. Retention of corporate knowledge	Ability to access records, data and other evidence, to <ol style="list-style-type: none"> i. Understand why PSR is in place; ii. Inform company response to any further proposal to alter PSR in the vicinity; iii. Inform any future challenge to IM over why a reduced PSR continues to apply
6.7 Control	1. Impact on contingency plans	Significant increase in running time; use of line as diversionary route
	2. Background information on impact of TSR	Controllers are a source of information on experienced or anticipated impacts
	3. Very Short-Term Planning bids	Impact of any TPR changes, <i>incl.</i> those implemented after any PSR change is introduced (<i>e.g.</i> after Principal or Subsidiary timetable change dates)
6.8 Engineering and Fleet	1. Maintenance or overhaul impacts	<ol style="list-style-type: none"> a) Additional wear and tear (<i>e.g.</i> braking and engine / motor wear) and required changes to maintenance regimes; b) Ongoing budgetary provision
	2. Software updating for ETCS or Driver Advisory System equipped trains	If anything is required, how is this to be achieved and by whom? Remote upload or manual; over how long?
	3. Increases in energy consumption	Ongoing budgetary provision
	4. Rolling stock route acceptance	Removal or easement of any current restrictions

Continued/

Roles	Consideration	Rationale for consideration
6.9 Timetable and Access Planning	1. Assurance over timetable impacts proposed by NCN	Compare NCN proposed modelled impacts versus actual, <i>incl.</i> analysis of available modelling data, both IM- or company-provided
	2. Timetable impacts	<ul style="list-style-type: none"> i. Are all currently specified trains still able to operate? What about future additional services that Operator has obligation / reasonable expectation / aspiration to operate? Consider both long- and short-term timetable bids & offers, <i>incl.</i> spot bids; ii. Changes to TPR (<i>incl.</i> Sectional Running Times, headways and junction margins). Consider impacts both on individual and on successive, close-running trains; iii. Consider possibility of adjusting Timing Allowances to reduce identified impacts; iv. Ability of trains to climb gradients with reduced momentum (to avoid stalling) with existing lengths, loads and weights; v. Potential impacts on operations over another IM's infrastructure (<i>incl.</i> depots, terminals and sidings)
	3. Managing the transition between PSR change being made and adoption within timetable schedules of any TPR changes	Mid-timetable changes versus next Principal or Subsidiary timetable change date – consider both long- and short-term timetable bids & offers, <i>incl.</i> spot bids
	4. Resources required to support timetable	Required changes to diagrams and resource levels, <i>incl.</i> relief points, break or rest times and/or locations
	5. Timetable resilience	Is this improved or made worse?
	6. Engineering access	<ul style="list-style-type: none"> a) Access required to deliver proposal; b) Any changes to overall strategy required to deliver timetable plan?
	7. Contractual or franchise / concession obligations	Ability to meet obligations (e.g. maximum journey times or payloads)
	8. Implications for Exceptional Load conveyance	Impact on Exceptional Load authority documentation, <i>incl.</i> removal of any current restrictions

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Roles	Consideration	Rationale for consideration
6.10 Commercial	1. Meeting representation	<ul style="list-style-type: none"> a) Determining and monitoring Operator representation at contractual meetings; b) Making clear to others within the Operator organisation (<i>incl.</i> suppliers and contractors) the limits of their authority
	2. Revenue and cost impacts	<ul style="list-style-type: none"> i. Effect of adverse (longer) journey times (via revenue allocation and sharing systems); ii. Reduction in train length or trailing weight required to ensure trains climbing gradients with reduced momentum do not stall; iii. Balance additional costs by any savings the Operator may make; iv. Ensuring claims under Schedule 4 or 8 are progressed
	3. Discussion with IM	<ul style="list-style-type: none"> a) Working with the IM on business case and option selection; b) Potential impacts on operations over another IM's infrastructure; c) For STNC, the IM's costs should include an estimate for restoring the infrastructure capability once the STNC has expired
	4. Discussion with other Operators	Alignment of responses or transparency of additional factors for consideration
	5. Impact on franchise / concession obligations	Check obligations (<i>e.g.</i> schedule 7.1)
	6. Responding to NCN proposal	<ul style="list-style-type: none"> i. <i>Incl.</i> making any counter-proposal or seeking clarification; collating costs and pursuing any claims under part G of Network Code; ii. Consideration of whether STNC would be appropriate
	7. Internal and external sign off	Attaining necessary agreements to proposal, <i>incl.</i> those required from third parties (<i>e.g.</i> franchise or concession authority, owning group or customer)
	8. Escalation / mediation	Managing process of taking proposal to dispute or escalation
	9. Retention of corporate knowledge	<p>Ability to access records, data and other evidence, to</p> <ul style="list-style-type: none"> a) inform company response to any further proposal to alter PSRs in vicinity; b) inform any future challenge to IM over why a reduced PSR continues to apply; c) maintaining contact with the IM over any STNC expiry dates

7 References

“Enhancing Level Crossing Safety 2018 – 2028”, to be published by Network Rail (seen by the author in final draft)

“In Partnership with Britain’s Railways”, published by the RDG in 2017

Railway Group Standard GO/RT3407 “Train Operation – Exceptional Load Documentation”, published by the Rail Safety and Standards Board (RSSB) in September 2015

RIS-0713-CCS “Lineside Signalling Layout Driveability Assessment Requirements”, published by the Rail Safety and Standards Board (RSSB) in March 2018

RDG-GN040 “Delivering Good Schemes – Conventional Re-signalling”, published by the RDG in April 2017

RDG-GN/NTI/001 “Delivering Good Schemes – ETCS”, published by the RDG in December 2017

“Network Code”, sponsored by the [Office of Rail and Road](#)

“Network Rail Monitor”, published by the Office of Rail and Road

“Network Specifications”, published by Network Rail on a Route basis

“Timetable Planning Rules”, published by Network Rail and subject to industry agreement under part D of the Network Code

Appendix A

Illustration (non-exhaustive) of applying the provisions of this document to a specific example

Problem being addressed: Passive level crossing, where non-vehicular crossing users require sufficient time to observe approaching trains, make an informed choice on whether to cross (from a safe position) and can complete a safe passage over the crossing.

A1: Is there a clear articulation of the proposal, its justification and supporting evidence? Are details of the anticipated impacts of the new PSR clearly set out and can these be evidenced?

Risk

A2: Does the proposal support the Narrative Risk Assessment (NRA) for the level crossing? Was that NRA agreed with Operators and is it up to date?

A3: Is it clear why a speed restriction is required, what risks it is addressing and why other risk mitigations are insufficient or not seen as appropriate? Has something changed which requires consideration of additional mitigations?

A4: Have the options to improve level crossing risk without the need to reduce the PSR been explored sufficiently? Does this include the use of new and available technology, e.g. products such as VAMOS or COVTEC? Can the crossing be re-designed to improve user sighting, or reduce risks whilst users re-position to allow better sighting? Were the options explored consistent with the risks being managed? Note that closure of crossings is unlikely to be achievable in the short-term, even if sufficient funding is available.

A5: Has there been any consideration of additional risk to users created by the application of a reduced PSR, i.e. might a lower speed encourage users to cross in front of trains?

A6: Where level crossings are in close proximity, what impacts will be seen at adjacent crossings and their risk profiles, caused by a reduced PSR at a single location?

A7: Do the proposals accord with the principles of any level crossing safety strategy published by the IM or meet any expectations placed upon the IM by external agencies or regulatory authorities?

Location

A8: What new speed(s) is/are to be applied and which direction of train movement do they apply to? Why have these been chosen? Have opportunities for differential speeds been considered?

A9: Is it clear where the Commencement and Termination boards will be sited? For level crossing sighting risks, there is normally little justification for the Termination board to be some distance beyond the crossing. Do Rule Book provisions permit trains to accelerate immediately the crossing or Termination board is reached or can a special instruction be considered to permit this?

A10: Is a revised driveability assessment required to understand driver reaction to a lower PSR and has one been carried out? For instance, will drivers coast more to ensure trains are driven professionally, exacerbating any potential timetable impacts? What effect would a reduced PSR have on signal approach control or the opportunity to benefit from flashing aspects?

A11: Would a reduced PSR create additional operational risks, e.g. proximity to existing lineside signs or signals, Hot Axle Box or Wheel Impact Load Detectors, conductor rail gaps, overhead line neutral sections? Consider also seasonal risks, e.g. Low Rail Adhesion sites. Is there an increased risk of heavy or long trains stalling or becoming over-powered when climbing gradients with reduced momentum?

Timetable & Performance

A12: Have Timetable Planning Rules and timetable impacts been assessed and what will the process be for agreeing changes? If evidence of Sectional Running Time impact is required, consider several trial runs, under controlled conditions, to compare passage of trains at existing PSRs with those at the new lower PSR – the empirical evidence gained then needs to be interpreted by Planners to allow for rounding of values.

A13: Can Timetable Planning Rules or timetable impacts be neutralised by adjustment of timing allowances or by consideration of line speed improvements elsewhere (especially if this is a cheaper option overall)?

A14: Do Timetable Planning Rules or timetable impacts that cannot be neutralised meet journey time obligations, operator reasonable requirements and longer term strategic direction for the line or route? Can timetable continue to work efficiently, or are extra resources required?

A15: Which timetable will any revised TPR apply from and how will delays (including sub-threshold) due to a reduced PSR be attributed until train schedules can be amended?

A16: Will the application of revised TPRs result in a more resilient timetable and reduced attributable and sub-threshold delays? If the answer here is "No" then there is an argument that the proposal has not been thought through sufficiently.

Business Case

A17: Does the proposal summarise the business cases for the options that were considered, and do these fully account for industry costs and any costs associated with PSR restoration in the future? How have decisions on affordability been made and what rates of return are expected? Where funding gaps have been identified, what attempts have been made to address these? In urban areas, where diesel operations are prevalent, how does the business case account for any costs associated with increased emissions or noise from accelerating trains?

A18: Is proposal best addressed through STNC, especially where the IM has an intention to provide additional works at a future date and these can be planned. Even if this is not the IM's intention, Operators may wish to promote the use of STNC to ensure the proposal remains an open consideration and to allow an audit trail, with clear timescales for such further consideration to be concluded.