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Issue:	1
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Level 3

Road vehicle incursions: risk assessment of public and non-public bridge and neighbouring sites

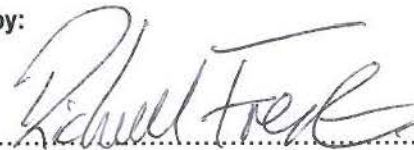
Endorsement and Authorisation

Endorsed by:



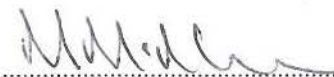
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User information

This Network Rail standard contains colour-coding according to the following Red–Amber–Green classification.

Red requirements – *No variations, could stop the railway*

- **Red requirements shall** always be complied with and achieved.
- Red requirements shall be presented in a red box **with the word “shall” or expressed as a direct instruction**.
- Accountability for the efficacy of red requirements lies with the Professional Head/Standard Owner.
- Red requirements are monitored for compliance.
- Corrective actions shall be enforced if variations are discovered through functional checks (e.g. engineering verification visits, audit or Operations Self-Assurance).

Amber requirements – *Controlled variations, approved risk analysis and mitigation*

- **Amber requirements shall** be complied with unless variation has been approved in advance.
- Amber requirements shall be presented with an amber sidebar **and with the word “shall” or expressed as a direct instruction**.
- Accountability for the efficacy of these requirements lies with the Professional Head/Standard Owner, or their nominated Delegated Authority.
- Amber requirements are monitored for compliance.
- Variations **may** be permitted. Variations are approved by the Standard Owner or through existing Delegated Authority arrangements.
- Corrective actions shall be enforced if **non-approved** variations are discovered through functional checks (e.g. engineering verification visits, audit or Operations Self-Assurance).

Green – *Guidance*

- Guidance is based on good practice. Guidance represents supporting information to help achieve **Red** and **Amber** requirements.
- Guidance shall be presented with a dotted green sidebar **and with the word “should” (usually in notes) or as a direct instruction**.
- Guidance is **not mandatory** and is not monitored for compliance.
- Alternative solutions may be used. Alternative solutions do not need to be formally approved.
- Decisions made by a competent person to use alternative solutions should be backed up by appropriate evidence or documentation.

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Issue record

Issue	Date	Comments
1	June 2015	Incorporates content of NR/GN/CIV/00012. Now includes requirements for managing the risk of vehicle incursion from non-public sites.

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 05 September 2015.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 3 (Option Selection) to continue to comply with the issue of any relevant Network Rail standards current when GRIP Stage 3 was completed and not to comply with requirements contained herein, unless stipulated otherwise in the scope of this standard.

Reference documentation

Disclaimer

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1 Purpose

This standard sets out methodologies to establish the risk of road vehicle incursion at public and non-public sites in the following scenarios:

- Overbridge sites carrying single carriageway roads, dual-carriageway roads and motorways;
- Neighbouring sites where road and rail are beside each other;
- Areas adjacent to a railway line where vehicles regularly park.

2 Scope

This standard specifies:

- The risk-ranking tools and their applicability;
- How to prioritise sites for initial application of the risk-ranking tools;
- How to apply the risk-ranking tools;
- How to interpret results from application of the risk-ranking tools;
- How to carry out a detailed assessment of risk at high-risk sites;
- How to identify cost-effective risk control measures.

3 Definitions

For the purpose of this standard, the following terms and definitions apply.

Adjacent Areas Where Vehicles Regularly Park

A site where vehicles regularly park that is coincident to a length of running line. For example supermarket car parks, station car parks, maintenance yards, private car parks, delivery depot car parks. This definition also specifically includes infrastructure maintenance vehicular access points where vehicles may park irregularly, due to the number of historic incidents at such sites.

NOTE: This term excludes sites where vehicles park on roads

Deficiency

A condition of a bridge, fence, sign or road marking that deviates from the designed intent, such that it is not capable of performing the function for which it was originally provided.

High-Risk Site

A bridge or neighbouring site scoring 90, or more, when the appropriate risk-ranking tool is applied.

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Highway Authority

A body responsible for the maintenance of public roads (e.g. Local Highway Authority, Highways England, Scottish Executive, Welsh Assembly or Transport for London)

Incursion

An encroachment of a vehicle or part of a vehicle over the boundary between Network Rail and any third party at an overbridge or neighbouring site.

Neighbouring Site

A coincident length of railway and public and non-public road that run beside each other, where accidental road vehicle incursion onto the railway is a realistic possibility.

NOTE Those sections where the railway is at a significantly higher level than the road would not constitute a neighbouring site, using this definition.

Non-Public Road

A road owned and maintained by a private individual, organisation, or company (including Network Rail), rather than at the Public's expense.

Non-public road-over-rail Bridge

A bridge carrying a non-public road or vehicular access over the railway.

Non-Public Sites

A collective term encompassing 'non-public road' sites, 'non-public road over rail bridges' and 'adjacent areas where vehicles regularly park'.

Overbridge Site

A road over rail bridge and the rail and road approaches to it.

Public Road

A road maintained at the Public's expense.

Public Road Overbridge Site

A bridge carrying a public road or track (including unmetalled) over the railway.

Single-carriageway (Road)

Any road maintained at the Public's expense that is not a motorway or dual carriageway.

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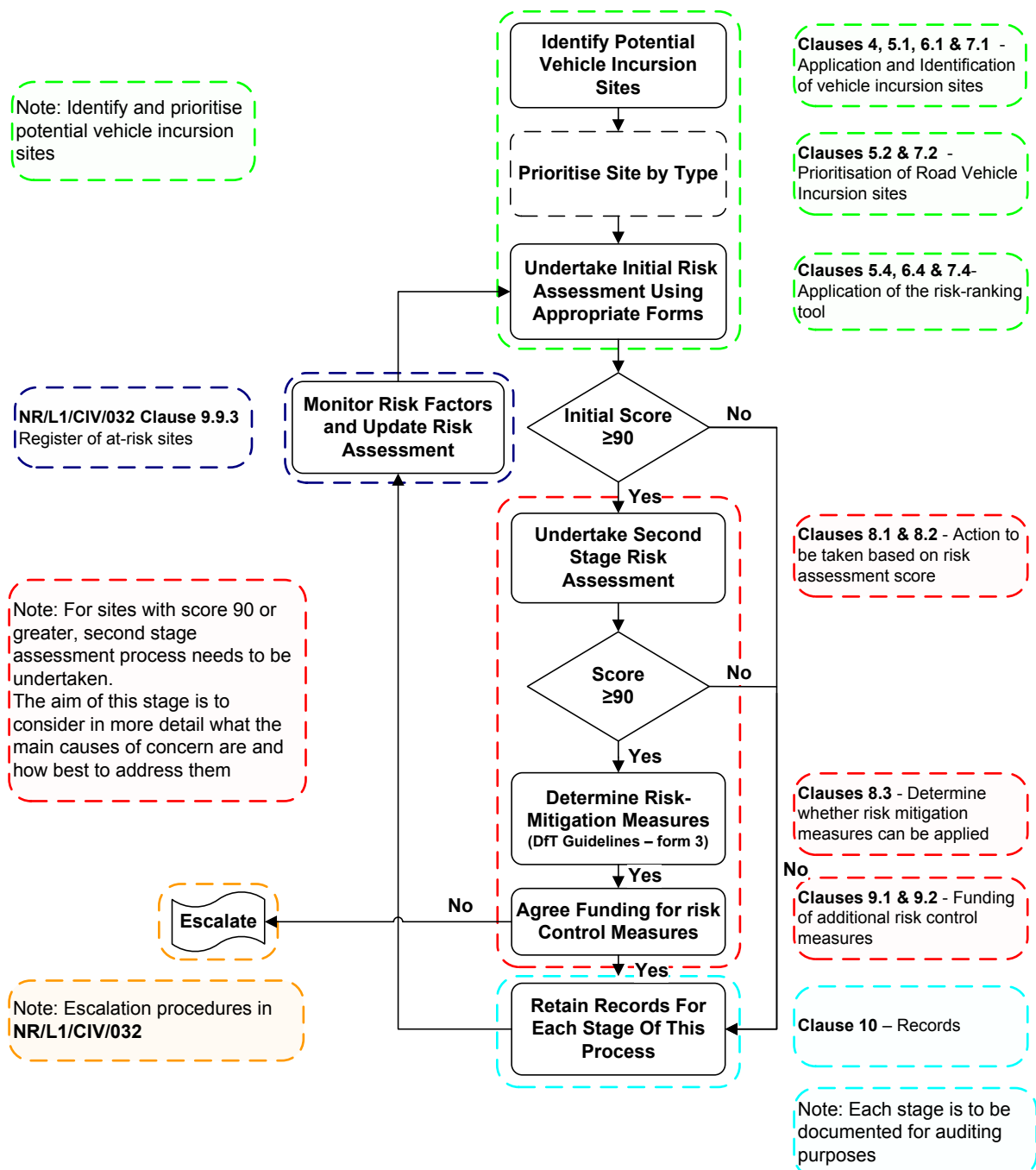


Figure 1 – High level risk assessment process for vehicle incursion

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	Type of Site	Appendix	Form	
			Joint site visit	Network Rail only site visit
Public road overbridge sites	Single-carriageway	A	NR/L3/CIV/00012/F001 Agree score with Highway Authority representative	NR/L3/CIV/00012/F001 Send completed form to Highway Authority
	Motorway and all purpose dual-carriageway	B	NR/L3/CIV/00012/F002 Agree score with Highway Authority representative	NR/L3/CIV/00012/F002 Send completed form to Highway Authority
Public road neighbouring sites	Road/rail neighbouring site	C	NR/L3/CIV/00012/F003 Agree score with Highway Authority representative	NR/L3/CIV/00012/F003 Send completed form to Highway Authority
Non-public sites	Non-public over rail bridges	D	NR/L3/CIV/00012/F004 Agree score with person responsible for adjacent site	NR/L3/CIV/00012/F004 Send completed form to person responsible for adjacent site
	Adjacent areas where vehicles regularly park	E	NR/L3/CIV/00012/F005 Agree score with person responsible for adjacent site	NR/L3/CIV/00012/F005 Send completed form to person responsible for adjacent site
	Non-public road/rail neighbouring site	F	NR/L3/CIV/00012/F006 Agree score with person responsible for adjacent site	NR/L3/CIV/00012/F006 Send completed form to person responsible for adjacent site

Table 1 – Risk-ranking tools

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4 When to apply the risk-ranking tool

Apply the risk-ranking tool:

- Following a vehicle incursion;
- Following a change in circumstances with the potential to increase risk at or near the site;

NOTE This includes changes in traffic flows and characteristics, as well as changes in the type and volume of rail traffic.

- Every three years at sites with control measures;
- Every 6 years at sites without control measures.

NOTE This may be undertaken as part of a detailed bridge examination.

5 Public road overbridge sites

5.1 Identification of public road overbridge sites

Identify public road overbridge sites.

NOTE Implement measures to keep the register of identified sites up to date to reflect the construction and disposal of assets and changes to road layout. This might be done using the structures asset register and other available sources.

5.2 Prioritisation of public road overbridge sites for application of the risk-ranking tools

Sites should be prioritised using Table 2.

NOTE This is an idealised approach to prioritisation. Routes may arrange their programmes to optimise the number of bridges that can be risk-ranked in one session.

Priority	Description	Appendix
1	Any overbridge site where there has been more than one incursion since the beginning of 1997	A - B
2	Any overbridge site where there has been an incursion since the beginning of 2001	A - B
3	Any overbridge site where the following <u>all</u> apply: a) A high volume of road traffic (12500 vehicles or 1000 HGVs per day) b) A high volume of rail traffic (more than 50000 trains per year some of which travels at speeds greater than 90 mph)	A - B
4	Any overbridge site where <u>only one</u> apply: a) A high volume of road traffic (12500 vehicles or 1000 HGVs per day) b) A high volume of rail traffic (more than 50000 trains per year some of which travels at speeds greater than 90 mph)	A - B
5	Any remaining overbridge sites that do not meet criteria for priorities 1-4	A - B

Table 2 – Prioritisation of public road overbridge sites for application of the risk-ranking tools

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5.3 Planning risk-ranking site visits

Agree a programme of site visits with the Highway Authority.

For each site visit, decide whether the assessment will be carried out by:

- A joint visit carried out by Network Rail and the Highway Authority;
- A representative from Network Rail;
- A representative from the Highway Authority.

NOTE Ideally, assessments will be carried out as part of a joint site visit by Network Rail and the Highway Authority. If this is not possible, Network Rail may agree to undertake site visits without the Highway Authority. In these cases, undertake a number of joint exercises to agree a common understanding of how the risk-ranking tools should be applied.

Site visits should commence within two months of initial contact with the Highway Authority.

5.4 Competence of assessors

It is recommended assessors should have the following knowledge and experience:

- Knowledge of road signage and layout;
- Knowledge of vehicle containment systems;
- An understanding of risk assessment procedures;
- A background in managing the specific type of site as set out in Table 3.

The Director, Route Asset Management shall determine the level of the competence of their assessors and their background.

Type of Site		Background
Public road overbridge sites	Single carriageway	Structures engineer
	Motorway and all-purpose dual carriageway	Structures engineer
Public road neighbouring sites	Road/rail neighbouring site	Off-track engineer Operations manager Safety Specialist/Advisor
Non-public sites	Non-public road-over-rail bridges	Structures engineer
	Adjacent areas where vehicles regularly park	Off-track engineer Operations manager Safety Specialist/Advisor
	Non-public road/rail neighbouring site	Off-track engineer Operations manager Safety Specialist/Advisor

Table 3 – Competence of assessors

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5.5 Application of the risk-ranking tool

For each site, select the risk-ranking tool using Table 1.

NOTE Apply the priority decided in 5.2.

Apply the selected risk-ranking tool at each site.

Record the risk assessment scores on the form shown in Table 1.

NOTE Each site is assessed against 14 risk factors to give a total risk score.

5.6 Dealing with obvious deficiencies

If obvious deficiencies are found during a site visit, follow Table 4.

Fault in part of overbridge site that is Network Rail's responsibility	Fault in overbridge site that is Highway Authority's responsibility	
	Joint site visit	No representative from Highway Authority present on site visit
Put arrangements in place to rectify fault. Note fault on risk assessment form and capture in database. Depending on the severity and extent of the deficiency consider raising Close Call and/or faulting through Route Control.	Confirm that the Highway Authority representative has recorded the deficiency. Note this on form. Seek commitment to rectify the defect from the Highway Authority representative.	Immediately notify the Highway Authority. Ask the Highway Authority to rectify the fault.

Table 4 – Action for obvious deficiencies found in public road overbridges

6 Public road neighbouring sites

6.1 Identification of neighbouring sites

Identify neighbouring sites.

NOTE This might be done using geospatial analysis techniques. This technique might list non-public sites that have not previously been dealt with; these should be scored using neighbouring public site tools.

NOTE Implement measures to keep the register of identified sites up to date to reflect the construction and disposal of assets and changes to road layout.

6.2 Prioritisation of public road neighbouring sites for application of the risk-ranking tools

There is no requirement to prioritise neighbouring sites.

6.3 Planning risk-ranking site visits

Agree a programme of site visits with the Highway Authority.

For each site visit, decide whether the assessment will be carried out by:

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- a) A joint visit carried out by Network Rail and the Highway Authority;
- b) A representative from Network Rail;
- c) A representative from the Highway Authority.

NOTE Ideally, assessments will be done as part of a joint site visit by Network Rail and the Highway Authority. If this is not possible, Network Rail may agree to undertake site visits without the Highway Authority. In these cases, undertake a number of joint exercises to agree a common understanding of how the risk-ranking tools should be applied.

Any planned joint site visits should commence within two months of initial contact with the Highway Authority.

6.4 Competency of assessors

Assessors should have the competency shown in 5.4 and Table 3.

6.5 Application of the risk-ranking tool

For each site, select the risk-ranking tool using Table 1.

NOTE There is no requirement to prioritise neighbouring sites.

Apply the selected risk-ranking tool at each site.

Record the scores on the form shown in Table 1.

NOTE Each site is assessed against 14 risk factors to give a total risk score.

6.6 Dealing with obvious deficiencies

If obvious deficiencies are found, follow Table 5.

Fault in part of neighbouring site that is Network Rail's responsibility	Fault in neighbouring site that is Highway Authority's responsibility	
	Joint site visit	No representative from Highway Authority present on site visit
Put arrangements in place to rectify fault. Note fault on form. Depending on the severity and extent of the deficiency consider raising Close Call and/or faulting through Route Control.	Confirm that the Highway Authority representative has recorded the deficiency. Note this on form. Seek commitment to rectify the defect from the Highway Authority representative.	Immediately notify the Highway Authority. Ask the Highway Authority to rectify the fault.

Table 5 – Action for obvious deficiencies found in public road neighbouring sites