



Road Safety Audit (RSA) Guidance


CALL
0121 214 7107


EMAIL
info@lrssb.co.uk


WEB
www.lrssb.org


TWITTER
[@LightRailSSB](https://twitter.com/LightRailSSB)


LINKEDIN
[@lightrailssb](https://www.linkedin.com/company/lighttrailssb)

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THIS DOCUMENT PROVIDES GUIDANCE ON ROAD SAFETY AUDITS (RSAs)				
EXPLANATORY NOTE:				
LRSSB is not a regulatory body and compliance with this guidance document is not mandatory. This document reflects good practice and is advisory only. Users are recommended to evaluate this guidance against their own arrangements in a structured and systematic way, noting that parts of this guidance may not be appropriate to their operations. It is recommended that this process of evaluation and any subsequent decision to adopt (or not adopt) elements of this guidance should be documented. Compliance with any or all of the contents herein, is entirely at an organisation's own discretion.				
SOURCE / RELATED DOCUMENTS:				
LRG 1.0 Tramway Principles and Guidance (TPG) (LRSSB) LRG 2.0 Guidance on Tramway Crossings for Non-Motorised Users (LRSSB) LRG 4.0 Signing and Marking of Tramways Guidance (LRSSB) LRG 19.0 Cycle Tramway Interface Guidance (LRSSB) LRG 24.0 Pedestrian Safety Guidance (LRSSB) GG 119 Road Safety Audit				
RELATED TRAINING COURSES:			RELATED LEGISLATION:	
As required			Directive (EU) 2019/136 of the European Parliament and of the Council of 23 October 2019 amending Directive 2008/96/EC on road infrastructure safety management (RSIM) Health and Safety at Work Act 1974 The Management of Health and Safety at Work Regulations 1999 Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS) (as amended)	
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TERMS AND ABBREVIATIONS

Table A – Terms

Term	Definition
Duty Holder	Person in charge of infrastructure or operational activities at a particular time.
Highway Scheme	All works that involve construction of new highway or permanent change to the existing highway layout or features. This is also considered to include the EC Directive 2008/96/EC 2008/96/EC term 'Infrastructure Project'.
Overseeing Organisation	The party that has agreed to lead the RSA process. This can either be the transport authority promoting a tramway scheme or the highway authority / roads authority at the location where the tramway scheme is located.
Responsible Person	A person or body responsible for safety in the absence of an operator for a system.
Road User	Any road vehicle and / or pedestrian on the road / pavement including equestrians, cyclists and those riding scooters.
Specialist Advisor	A person approved by the Overseeing Organisation (OO) to provide specialist independent advice to the RSA team where the scheme includes features outside the experience of the RSA team.
Tramway Scheme	A scheme that either: • Introduces a tramway to the highway; or • Makes improvements or alterations to the layout of an existing tramway, specifically where this change could impact on road user behaviour, tram driver behaviour or result in a change to the outcome of a collision.

Table B – Abbreviations

Abbreviation	Definition
DO	Design Organisation
LRSSB	Light Rail Safety and Standards Board
OO	Overseeing Organisation
RAIB	Rail Accident Investigation Branch
ROGS	Railways and Other Guided Transport Systems (Safety) Regulations 2006 (as amended)
RSA	Road Safety Audit
TPG	Tramways Principles and Guidance
UK	United Kingdom

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1. Introduction

- 1.1. This guidance supports the high level principles set out in LRG 1.0 Tramway Principles and Guidance (TPG) published by the Light Rail Safety and Standards Board (LRSSB).
- 1.2. This document provides high level guidance for tramway (Light Rail system) operators, owners and infrastructure managers on the undertaking of Road Safety Audits (RSAs) based on line of sight operations only. As with all guidance, this document is not prescriptive and is intended to give advice not to set a mandatory industry standard, and it is based upon goal setting principles as good practice.
- 1.3. Much of this guidance is based on the experience gained from good practice from RSAs of tramway and complex highway schemes in the UK. It also builds on the good practice procedures adopted by a number of local highway authorities in the UK for RSAs. It does not prescribe or endorse particular arrangements adopted by any existing UK tramway and is intended to give guidance and advice.
- 1.4. This guidance is not intended to be applied retrospectively to existing UK tramways. However, owners and operators should consider and assess any implementation of this guidance and / or any subsequent revision to ensure continual improvement in reducing risks, so far as is reasonably practicable.
- 1.5. The purpose of this document is to address Recommendation 3 of the Rail Accident and Incident Board (RAIB) report '*Collision between a tram and a cyclist, near Audenshaw tram stop, Manchester 1 September 2021*'¹.

¹

https://assets.publishing.service.gov.uk/media/63039e6e8fa8f55362c0a8e6/R082022_220825_Audenshaw.pdf

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2. Scope

- 2.1. The aim of this document is to provide Light Rail system tramway system designers, owners and maintainers with practical guidance on how to improve road user safety in the operational system through the tramway design process and into early operation. It may also be of interest to local highway authorities who are developing highway schemes which interface with an existing tramway and are thus tramway schemes.
- 2.2 This guidance is based on the application of the RSA process (described in GG 119²) to a tramway scheme. GG 119 is the benchmark UK standard for RSA and although many other local variants of the RSA process exist, some of these allow relaxations in the process which are not considered appropriate for a tramway scheme. This document either provides guidance on the specific requirements in GG 119 to outline how they should be met on a tramway scheme, or outlines where they should be exceeded. Where local processes exceed what is stated here, these should continue to be used.
- 2.3 This document provides supplementary guidance to inform Light Rail system duty holders / owners / responsible persons of the need for RSAs. This includes the application of RSA during the development of a tramway scheme and the requirements of the appointment of competent road safety auditors regarding the tramway and highway interface.
- 2.4 This document also provides outline guidance on the application of RSA on tramway schemes, giving supplementary information related to the RSA process and how it is specifically applied to highway interfaces with UK tramway networks.
- 2.5 This guidance follows the steps outlined in Figure 1.3 (*'Road Safety Audit Process Overview'*) contained within GG 119.

² <https://www.standardsforhighways.co.uk/search/710d4c33-0032-4dfb-8303-17aff1ce804b>

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3. Applicability to RSA

- 3.1 The aim of the RSA process is to provide an effective, independent review of the road safety implications of engineering interventions on the highway for all road users. The RSA process should be applied for tramway schemes and improvement projects that interface with the highway network, or highway projects that interface with the tramway network.
- 3.2 The objective of an RSA is to identify aspects of engineering interventions that could give rise to road safety problems and to suggest modifications that could improve road safety. The timely undertaking of RSA can identify hazards and control risks at the design stage.
- 3.3 It is important to note that an RSA is not intended to be a technical check of compliance with design requirements, nor is it intended to assure safety. (Refer to GG 119 to confirm the scope of an RSA.) Even with the careful application of design standards by competent professionals, the design process will not necessarily remove all hazards for road users.
- 3.4 The completed RSA does not constitute a risk assessment, but is an important tool for reviewing the highway related risks resulting from change and identifying recommendations to address these risks. The duty holder / responsible person is still required to undertake their risk assessment duties under ROGS³ and the Health and Safety at Work Act 1974⁴, using the findings of the RSA as an input.
- 3.5 An RSA is undertaken by staff with experience of collision data analysis, road safety engineering and a reasonable understanding of highway design principles such as design requirements and good practice. 2008/96/EC⁵ mandates the RSA process and associated qualification requirements across the European Community which are detailed in GG 119. RSA is undertaken at key stages in the design, construction and early operation of a tramway scheme that impacts the highway.
- 3.6 The RSA process and this guidance should be applied to all tramway projects that impact the highway. Although this guidance is not intended to be applied retrospectively to existing operational tramways, there will be circumstances where a proposed tramway scheme could result in physical changes to the highway layout with an existing tramway. If this change could impact on road user behaviour, tram driver behaviour, or result in a change to the outcome of a collision, then an RSA should be undertaken.
- 3.7 The RSA process is structured around the actions of the following three distinct parties:
- The Overseeing Organisation (OO);
 - The Design Organisation (DO); and
 - The RSA team.
- 3.8 The OO initiates the RSA process and is typically the body promoting the tramway scheme, such as the public transport body or the highway authority where the tramway scheme is located. Where there is a highway change impacting an existing operational tramway, the OO's role would typically be the highway authority.

3 <https://www.legislation.gov.uk/ukxi/2006/599/made/data.pdf>

4 <https://www.legislation.gov.uk/ukpga/1974/37/data.pdf>

5 Directive 2008/96/EC of the European Parliament and of the Council of 19 November 2008 on road infrastructure safety management: <https://www.legislation.gov.uk/eudr/2008/96/contents>

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- 3.9 Prior to commencement of the RSA process, the parties fulfilling each function should be agreed.

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4. The RSA Team

- 4.1 The effectiveness of the RSA process is reliant on the RSA team having the necessary competency to identify both the road safety issues resulting from engineering changes, as well as making the appropriate recommendations.
- 4.2 GG 119 provides general advice on the minimum levels of training, continuous professional development and experience. However, there is an additional need for the RSA team to understand how a tramway operates.
- 4.3 The OO has a responsibility to review and approve the qualifications and relevant experience of the proposed RSA team on a scheme-by-scheme basis. This is often provided in the form of a CV (curriculum vitae). This review should consider both GG 119 advice and the individual's experience in tramway schemes. It is recommended that the tramway promoter and / or operator should have a role in the review and approval of the RSA team.
- 4.4 The RSA team leader and RSA team members assessing a tramway scheme should have the certificate of competency in RSA. The certificate of competency in RSA is an additional accreditation that road safety auditors can attain based on a specified syllabus. This additional accreditation means that all members of the RSA team have been subject to a review of their experience in accordance with GG 119.
- 4.5 The approved RSA team should have some or all of the following:
- Experience of tramway design and / or operation;
 - Training on the design and operation of tramways; and
 - Experience of undertaking RSA of tramway schemes.

Specialist Advisor

- 4.6 All stages of RSA on a tramway scheme should include a specialist adviser to inform the RSA team when technical and operation queries arise. Although the specialist adviser should have experience of the operation of a tramway, they do not need to be a road safety auditor, as their role is to advise the RSA team on the operational aspects of the tramway only. As such, the specialist adviser should be approved by the OO. The specialist adviser can accompany the RSA team on the site visit but will not form part of the RSA team.

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5. The RSA Process

- 5.1 Clear and effective communication between the three key parties involved in the RSA process is necessary for road safety benefits to be realised.
- 5.2 The RSA team are reliant on receiving clear and relevant information on the tramway scheme to facilitate their audit in the form of an RSA brief. Whilst the RSA team is required to be independent from the development of designs and decision making, there should be an opportunity for them to ask questions of the other parties involved, including requests for additional information. This would help reduce the likelihood of the RSA report including problems related to missing or unclear information which makes the process less effective in reducing road user risk.
- 5.3 The DO has responsibility for preparing the RSA brief at each stage of the RSA. Irrespective of who the DO is, the tramway operator should also be involved in the development of the RSA brief. It may be beneficial for an accredited road safety auditor to advise on the production of the brief. However, that would then preclude them from forming part of the RSA team.
- 5.4 The OO is responsible for approving and issuing the RSA brief.
- 5.5 The RSA brief should include the information shown in Appendix C of GG 119. However, in relation to tramways, the following information should also be included (not exhaustive):
 - Hazard logs;
 - Deviations and derogations;
 - Visualisations of the proposals;
 - Proposed vehicle types;
 - Anticipated, or actual, tram speed profiles including stopping distances;
 - Hostile vehicle mitigation measures;
 - Emergency procedures;
 - Incident and near miss data;
 - Information on service frequency and hours of operation;
 - Tramway crossing risk assessments;
 - Tramway operator details; and
 - The design principles or standards applied in the design process.
- 5.6 If there are any areas of concern and issues that would not be immediately apparent to the RSA team, they should be highlighted in the RSA brief.
- 5.7 Some form of presentation to the RSA team by the DO may assist in raising queries and improving the RSA team's understanding of the tramway scheme. This presentation should be agreed with the OO.

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- 5.8 Prior to commencement of the RSA process on any tramway scheme, the OO should agree and document the following with the highway authority, tramway operator, tramway promoter and transport authority:
- The scope of the RSA;
 - The need to split roles in the process on a section-by-section basis;
 - The involvement of parties, beyond the OO and DO in the RSA Response Report; and
 - Funding to complete all stages of RSA into operation.

RSA Response Report

- 5.9 Following RSA Stages 1, 2 and 3, the DO produces an RSA response report. This should include responses from the DO, OO and duty holder / responsible person to each problem and recommendation raised in the RSA, and an agreed action.
- 5.10 A risk assessment can form the basis of the RSA Response Report, which is required at RSA Stages 1, 2 and 3. The RSA team cannot support the duty holder / responsible person in undertaking a risk assessment following an RSA. The completed RSA Reports and RSA Response Reports should be retained by the OO, duty holder and / or responsible person.
- 5.11 The RSA Response Report, along with the RSA Brief, RSA Report, and BIM (Business Information Model) (where this exists) should be retained as part of the Health and Safety File.

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6. Undertaking the RSA

6.1 An RSA is undertaken at the following four distinct stages in a project lifecycle. Full details of each stage are provided in GG 119:

- Stage 1: the completion of preliminary design;
- Stage 2: the completion of detailed design;
- Stage 3: the completion of the scheme; and
- Stage 4: as a post-opening monitoring exercise.

6.2 The above stages are typical and could be applied to all relevant tramway schemes. This includes repeating an RSA stage where the OO considers this is necessary, i.e. if there has been some redesign. In these instances, the RSA is only concerned with those elements of the scheme that have been changed. Nonetheless, there are some additional considerations when applying them to a tramway scheme.

6.3 Appendix B of GG 119 provides a non-exhaustive checklist for the RSA stages; this may need to be supplemented for explicit consideration of the tramway.

Stage 1 and Stage 2

6.4 A Stage 1 RSA should not be combined with a Stage 2 RSA on a tramway scheme.

6.5 At Stage 1 and Stage 2 the RSA team should be given access to any driver simulation or tramway scheme visualisation that is available. The RSA team should have the opportunity to see the tramway scheme from the driver's cab, where feasible. This could also be achieved by the RSA team being provided with a route video or by riding with the driver.

Stage 3

6.6 Where the tramway scheme is a new tramway, the following Stage 3 RSA site visits should be undertaken to inform the Stage 3 RSA report:

- Prior to the tramway scheme opening;
- During the commissioning; and
- Within a month of the tramway scheme becoming fully operational.

6.7 The tramway operator should be invited to the site visit at RSA Stage 3 alongside the local highway authority / maintaining agent for the highway (where applicable) and the police. Adequate notice should be provided to all participants in the site visit, with a minimum of one week to facilitate their attendance.

6.8 The RSA team should have the opportunity to see the tramway scheme from the driver's cab, where the RSA stage and timing of the tramway scheme allows.

Stage 4

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- 6.9 A Stage 4 RSA should always be undertaken on a tramway scheme at a point when full details of any collisions are available for a period of one year after operation of the tramway has commenced. Whilst local operational collision data should be used, the data should be checked against the validated STATS19 (road accident statistics) data.
- 6.10 As well as relevant highway collision data, operational data such as incident data, driver logs, near miss reports etc. should be reviewed as part of the Stage 4 RSA. This should include any pertinent information from the Tram Accident and Incident Reporting (TAIR) database.
- 6.11 A Stage 4 RSA Report should be produced unless there are no reported collisions, incidents or near misses of any kind.