Transport for London
Surface Transport

Management System Document – Procedure

Road Safety Audit

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1 Purpose & Scope

1.1 This document describes the Transport for London (TfL) Procedure for carrying out Road Safety Audits (RSAs) on the Transport for London Road Network (TLRN), and must be followed without exception to identify when schemes require a Road Safety Audit and set the standard for carrying out RSAs for, or on behalf of, Transport for London.

1.2 Policy 19 of the 2010 Mayors Transport Strategy highlights the Mayor's commitment to reducing the number of people killed or injured on London's roads. Building upon this commitment, Safe Streets for London (The Road Safety Action Plan for London 2020) specifies TfL's intention to "ensure worldwide best practice in Road Safety Audit is defined by London".

1.3 To facilitate the commitments specified in Paragraph 1.2 above, this Procedure shall be subject to an annual review. Users of this Procedure are expected to check TfL's website periodically to ensure they are using the most recent version. TfL is developing a mailing list to notify of any future changes to this Procedure, please e-mail TfLSafetyAudit@tfl.gov.uk if you wish to be included on this list.

1.4 This Procedure must be followed by all persons who have involvement in the planning, design or construction of changes to the TLRN and those who are commissioned to undertake RSAs for, and on behalf of, TfL.

1.5 With consideration to paragraph 1.6 below, this Procedure shall apply to all measures proposed on the TLRN that involve permanent changes to the highway. This includes work carried out under agreement with TfL resulting from developments alongside or affecting the TLRN.

1.6 This Procedure must be followed when TfL undertakes RSAs on non-TLRN schemes (e.g. Borough schemes), with the exception of Trunk Road schemes when Paragraph 1.7 below applies. This Procedure is commended to all others involved in commissioning and undertaking RSAs on non-TLRN schemes in London.

1.7 This Procedure does not apply to Trunk Roads including motorways. RSAs for schemes on these highways must be carried out in accordance with the latest Road Safety Audit Standards in the Design Manual for Roads and Bridges (DMRB), currently HD19/03 and Interim Advice Note 152/11 and any forthcoming revisions.

1.8 RSAs conducted on the TLRN, but to the Terms of Reference contained within HD19/03, will not be accepted unless Paragraph 1.7 above applies.

1.9 Definitions relating to Road Safety Audit are contained within Appendix A.

1.10 Roles and Responsibilities relating to Road Safety Audit are contained within Appendix B.

2 Road Safety Audit Overview

2.1 A Road Safety Audit considers the road safety implications of all measures, their impact on the network under all anticipated operating conditions, and their road safety implications on all types of road user.

2.2 Fundamental to the principle of an RSA, for or on behalf of TfL, is ensuring that due consideration is given to the effects of any proposal on all road users and especially all vulnerable user groups, for example the very young, the elderly, people with a disability and generally, pedestrians, cyclists and riders of powered two wheeled vehicles.

2.3 Whilst an RSA is applicable to an individual junction or section of the network, it is important that the road safety implications of the measures as they interface with other parts of the highway network are given due consideration as part of the RSA process.

2.4 Temporary traffic management schemes will not generally require auditing. However, where a temporary traffic management scheme is to remain in operation for a period of six months or more, then an RSA must be undertaken. Consideration should also be given to auditing temporary traffic management schemes that are to remain in operation for a period of less than six months if a significant impact on the highway network is anticipated or road safety concerns have been identified. Phased traffic management schemes where each phase is less than 6 months, but the combined total of all phases exceeds 6 months, must be audited.

2.5 RSAs are not necessary for maintenance works that solely involve a like-for-like replacement or refurbishment of existing street features. However, this Procedure will apply to highway alterations that are proposed as part of the maintenance scheme.

2.6 An RSA will not consider non-road safety related issues and is not a technical check to confirm compliance to standards.

2.7 An RSA will not cover issues relating to the stability of any structure, nor the structural integrity of any proposed element or method of construction.

2.8 An RSA must not be used as a means of selecting between various design options that are under consideration. An RSA may be conducted on separate options but no definitive judgement on which option is preferable will be given. The RSA Team will assess each option individually and make recommendations accordingly. The decision on which option to develop will remain entirely with the Client Organisation.

2.9 The RSA is not an opportunity to;

a) query why other measures are not being proposed;

b) comment on the operational characteristics of the proposals where there are no adverse safety implications;

c) suggest alterations or additions to the proposals which are not as a result of a specified safety concern.

2.10 No part of an RSA report should be regarded as a direct instruction to include, remove or amend any scheme element. Responsibility for designing the scheme lies with the Design Organisation and as such the Audit Team accepts no design responsibility for any changes made to a scheme following the completion of an RSA Report.

2.11 Road Safety Audit is not a process required by current Construction Design and Management (CDM) Regulations. In principle the RSA is concerned with the future operational road safety of the scheme and does not deal with construction or maintenance issues relating to the project. Where a redesign is required as a consequence of an RSA, the Design Organisation should conduct a further assessment of the hazards as required by the CDM Regulations.

2.12 TfL Procedure SQA-0646 ‘Safety Auditing of Signal Schemes’ (currently Issue 3), details the design / safety checks carried out on signal schemes to ensure that all aspects of safety are considered during the design stage so that the scheme can be implemented, operated, maintained and decommissioned in a safe manner and the design accords with the requirements of the CDM. Those design / safety checks do not replace the necessity for an RSA in accordance with this Procedure.

2.13 An RSA Team must consist of at least two members, one of which will be appointed as the Audit Team Leader, the other shall be appointed as the Team Member. The requirements of the Audit Team appointment are referenced in Section 5.

2.14 All pre-construction RSAs have a maximum shelf life of two years, and should be repeated if the scheme changes significantly. Where a scheme has not begun the next stage in its development within two years of the completion of the RSA, the scheme must be re-audited. Reference should be made to Section 7 of this report, Road Safety Audit Shelf Life.

3 When to Road Safety Audit

3.1 Road Safety Audit is not a single Procedure undertaken once for each scheme. A RSA and its subsequent actions shall be undertaken following completion of specific stages of a scheme's development. These stages are:

a) Stage 1: Completion of Preliminary Design / Conceptual Design

As soon as practicable following completion of the preliminary design. The scheme design must be sufficiently progressed such that all significant features are clearly shown.

b) Stage 2: Completion of Detailed Design

As soon as practicable following completion of detailed design. At this stage, the RSA Team will consider all the detailed aspects of the scheme. The scheme design must be sufficiently progressed such that it could be constructed without further development.

As a guide, the following information should be provided as appropriate:

- General arrangement details,
- Site clearance details,
- Traffic signs and road markings,
- Drainage alterations,
- Street lighting alterations,
- Traffic signal details and traffic signal staging alterations,
- Carriageway and footway level alterations,
- Swept path analysis,
- Surfacing and material details / specifications.

c) Stage 3: Completion of Construction

As soon as practicable after the works are complete. The Client Organisation may also deem it prudent to carry out an RSA on a scheme prior to full completion, so that any significant issues arising can be addressed with immediacy. Where an RSA is carried out before the scheme is complete, a further RSA will also be carried out as soon as practicable upon completion.

Under normal circumstances a Stage 3 RSA should be completed within 3 months following completion of the scheme.

d) Stage 4: Monitoring

Stage 4 RSAs are not routinely undertaken on TfL internally promoted schemes. TfL monitors the performance of highway engineering schemes through the Traffic Accident Diary System (TADS). Where TADS identifies an emerging collision problem, the Client Organisation should commission a Stage 4 RSA.

The Stage 4 RSAs, where undertaken, will be at defined stages following implementation of a scheme and when the required post-construction collision data is available:

- Stage 4a

A Stage 4a RSA will be prepared using 12 months of collision data from the time the scheme became operational and 36 months of collision data from prior to the commencement of construction works. A scheme is regarded to be operational from the date construction ceases on site, the location is open to the general public and all traffic management has been removed.

The collision records are analysed in detail to identify:

- locations at which personal injury collisions have occurred;
- personal injury collisions that appear to arise from similar causes or show common factors;
- how the scheme may have affected collision patterns and rates.

- Stage 4b

The Client Organisation must decide if a Stage 4b RSA needs to be prepared. The Client Organisation's decision is led by the results of the Stage 4a report, the scale of changes instigated by the original scheme, TADS outputs and any issues highlighted since the completion of the scheme. A Stage 4b RSA is prepared using 36 months of collision data from the time the scheme became operational and collision data for the 36 months prior to the commencement of works.

e) Supplementary Road Safety Audit Stages

In addition to the defined stages specified above, it may at times be beneficial to conduct Interim or combined Stage 1/2 audits as follows:

- Interim Road Safety Audit

For large, complex schemes, particularly with accelerated programmes, the Client Organisation may consider at any time during the preliminary and detailed design stages, that it is appropriate to undertake an Interim RSA. Aside from being undertaken at an interim stage, Interim RSAs shall be carried out following the same Procedure as for the formal Audit stages. Interim RSAs do not replace the formal audit stages, which must still be undertaken in full.

- Combined Stage 1 and 2 Audits (Stage 1/2)

For some smaller and simpler schemes, combined stage 1/2 RSAs can be carried out on the overall design of the schemes. It must be recognised, however, that a combined stage 1/2 RSA has the disadvantage of identifying potential safety issues late in a schemes development when corrective action may be more difficult.

It is envisaged that schemes such as road marking alterations, traffic signing schemes and small footway modifications would fall under this category.

4 Initiating the Road Safety Audit

4.1 Road Safety Audits on the TLRN may only be undertaken by Auditors who have passed TfL's verification process and receive approval prior to undertaking an RSA on the TLRN. For information on this process please refer to Section 5.

4.2 The Client Organisation is responsible for initiating the RSA, ensuring that sufficient time is available to complete the full process. This must include an allowance for the incorporation of changes into the design that may arise from the RSA.

4.3 TfL's in-house RSA Team must be notified of the intention to undertake an RSA on the TLRN so that vetting of the Audit Team can be undertaken and recorded. Sufficient advance notification of the Audit should be provided so the in-house RSA Team has time to respond before the Audit is commenced. This is TfL's position for all schemes on the TLRN and includes all developer schemes and private residential improvements affecting the TLRN. The in-house RSA Team will also liaise with the Client Organisation or Highway Authority, to advise whether the Audit should be undertaken in-house, whether the in-house service would like to assist an additional external resource or if an alternative RSA provision should be instructed by the Client Organisation. Scheme information should be submitted to the RSA inbox at TfLSafetyAudit@tfl.gov.uk.

4.4 An RSA is initiated by the submission of the Audit Brief to the Audit Team at the appropriate stages of a scheme's development. A template document may be obtained through e-mail at TfLSafetyAudit@tfl.gov.uk. The submission of an Audit Brief is a mandatory requirement.

4.5 An overview of the information required when completing an Audit Brief is contained within Appendix C.

4.6 The Audit Team Leader considers the Audit Brief and will direct any requests for clarification of (or inadequacies in) the Brief to the Client Organisation. If any points raised or the inadequacies are not resolved then the Audit Brief may ultimately be either rejected or, if appropriate, an earlier stage of RSA undertaken.

4.7 Where the Client Organisation considers it unnecessary for an RSA to be carried out, then a note must be put on file stating why an RSA is not considered necessary. A template document may be obtained through e-mail at TfLSafetyAudit@tfl.gov.uk.

5 Appointing the Road Safety Audit Team

5.1 The Road Safety Audit Team will only be made up from individuals that have the necessary qualifications, adequate and relevant training, skills and experience. This will be assessed, without exception, through a formal verification process demonstrated by the submission of the Auditor verification form or the submission of a curriculum vitae (CV) to TfL's in-house RSA Team at TfLSafetyAudit@tfl.gov.uk.

5.2 All those wishing to undertake RSAs on the TLRN must undergo the verification process and receive approval of suitability prior to undertaking any RSA on the TLRN. This includes Auditors on TfL's Framework Contracts and Auditors for private developers. Audits completed by Auditors who have not passed this verification process will not be accepted.

5.3 When assessing the competency of an Audit Team, details of both the Audit Team Leader and the Audit Team Member are required in all instances.

Their CVs must:

- demonstrate the individual meets the minimum requirements set out within this section;
- consist of no more than two pages of information;
- clearly demonstrate that the experience and training in Road Safety Audit, Collision Investigation or Road Safety Engineering is relevant to the scheme to be audited in terms of scheme type and complexity;
- include details of the individuals Continuing Professional Development (CPD) record, focusing on Road Safety Audit, Collision Investigation and Road Safety Engineering;
- detail any other relevant CPD covering areas such as highway design, traffic management and highway maintenance;
- detail the individual's membership of any Professional Institutions, Groups or Societies.

5.4 All members of the RSA Team must be current Members (or Fellows) of the Chartered Institution of Highways and Transportation's (CIHT) Society of Road Safety Auditors (SoRSA).

5.5 TfL will check with CIHT that every member of the Audit Team is a current Member or Fellow of SoRSA before approval to undertake audits on the TLRN will be given.

5.6 TfL will also accept Auditors who are a member of a recognised Professional Institute or Institution specific to Road Safety Audit if membership is subject to a review process which checks candidates meet the minimum qualifications and experience on an annual (or more frequent) basis. Currently, the Institute of Highways Engineers (IHE) Register of Road Safety Auditors is not subject to an annual review, therefore, members of that Institute will not be accepted unless they are also current Members (or Fellows) of SoRSA.

5.7 It is understood that the annual review process is only a snapshot of experience at the time the review is conducted. Auditors on the TLRN are expected to ensure they meet the minimum entry requirements for SoRSA continuously throughout the year, particularly in terms of CPD and number of audits completed in the previous 12/24 month period.

5.8 The minimum qualifications and experience for RSA Team Leaders and Team Members is as follows:

- Attendance of a 10-day formally structured and recognised Collision Investigation or Road Safety Engineering course. A condensed course following the same syllabus is deemed satisfactory to meet this requirement,
- A minimum of 4 years Collision Investigation or Road Safety Engineering experience (Team Leader), or a minimum of 2 years Collision Investigation or Road Safety Engineering experience (Team Member),
- Completion of at least 5 Road Safety Audits in the past 12 months as an Audit Team Leader or Audit Team Member (Team Leader), or, completion of at least 5 Road Safety Audits in the past 24 months as an Audit Team Leader or Audit Team Member (Team Member),
- A minimum of 2 days certificated Continued Professional Development (CPD) in the fields of Road Safety Audit, Collision Investigation or Road Safety Engineering in the past 12 months.

5.9 Audits completed by Auditors who are members of SoRSA but have not kept up to date with Continuous Professional Development or Audit experience will not be accepted.

5.10 It is expected that those completing Audits on the TLRN will be conversant with this Procedure and its requirements; therefore, retrospective approval will not be given to Auditors who have not followed this Procedure, except in exceptional circumstances.

5.11 TfL reserves the right to check the validity of any information submitted as part of the verification process. This may include checking education and employment history as deemed appropriate. At the discretion of TfL, candidates may be requested to provide evidence of any document detailed upon a CV such as Certificates, Audit Reports, Collision Studies and evidence of CPD. It is recommended that candidates retain up-to-date records of experience should this information be requested. CV's should only be submitted for verification if the candidate is happy for its contents to be verified.

5.12 Membership of SoRSA (or equivalent as appropriate) does not guarantee that Auditors will be given approval in all cases. The Auditor must demonstrate they have experience relevant to the scheme being audited before approval will be given.

5.13 It is appreciated that Auditors who wish to continue working on the TLRN but are not members of SoRSA will need time to complete the application process to achieve membership. On this basis the mandatory requirement for Auditors to be a member of SoRSA will come into effect on 1st January 2015; Audits will not be accepted by Auditors who are not members of SoRSA after this date. All other requirements within this Procedure are effective from the date of publication.

5.14 In accordance with Road Safety Audit best practice, when an Audit is completed on the Trans European Road Network (TERN) one member of the Road Safety Audit Team will have obtained a Certificate of Competency (CoC) to Interim Advice Note IAN 152/11. It is understood that DMRB HD19/03 is due to be updated later this year. With respect to the CoC, TfL intends to align itself with the requirements for a CoC in the forthcoming revision.

5.15 If there are any unusual or specialist measures to be audited, then the Audit Team Leader may elect to appoint an appropriate specialist to advise the RSA Team.

5.16 On occasions an individual with the appropriate training, skills and experience may accompany the RSA Team as an Observer in order for them to gain experience of the Audit process. The RSA Team Observer is encouraged to contribute actively to the Audit process.

5.17 An Audit observer must have acceptable levels of training, skills and experience prior to accompanying the RSA Team in order that they gain worthwhile experience from the Audit. As a minimum, an RSA Team Observer must have undertaken a 10-day formally structured and recognised Collision Investigation or Road Safety Engineering course and have a minimum of 1 years Collision Investigation or Road Safety Engineering experience.

5.18 The Police, specialist advisors and Audit Team Observers do not form part of the formal Audit Team, but assist the Audit Team in the completion of the Audit. These individuals are not required to be Members of SoRSA.

6 Independence of the Road Safety Audit Team

6.1 It is fundamental to the auditing process that no member of the RSA Team has had any design involvement with the measures being audited and will maintain this independence throughout the Audit process. The Client Organisation must be satisfied as to the independence and competence of the Audit Team to undertake the RSA. The use of personnel from previous RSA work does not guarantee their suitability to undertake future Audits on the TLRN.

6.2 The requirement for the RSA Team's independence does not preclude direct contact between the RSA Team, Client Organisation and Design Organisation. There may be times where there is clear benefit in allowing this to happen; for example in clarifying the Audit Brief. Alternatively, direct contact may be unavoidable if the RSA Team Organisation and Design Organisation are one and the same. It is of paramount importance, however, that the RSA Team maintains its independence. The Client Organisation and Design Organisation must not in any way influence the outcome of the Audit by discussing any design considerations or issues with the RSA Team.

6.3 Neither the Client Organisation nor the Design Organisation shall petition the RSA Team to change the content of the RSA report.

6.4 The Audit Team Leader may find it pertinent to document and store on file any important discussions between the Client Organisation, Design Organisation and the RSA Team.

6.5 The RSA Team is not permitted to go beyond making recommendations in broad terms. In making detailed recommendations the RSA Team may be seen to be taking on design responsibilities and hence, lose its independence from the design process.

7 Road Safety Audit Shelf Life

7.1 All pre-construction RSAs have a maximum shelf life of two years. Where a scheme has not begun the next stage in its development within two years of the completion of the RSA, the scheme must be re-audited. This is to ensure that due consideration has been given to the schemes interface with the current highway network and its current usage.

7.2 RSAs should be repeated if any element of a scheme is significantly changed, or the highway layout is substantially altered, subsequent to an RSA having been undertaken.

8 Performing a Stage 1, Stage 1/2, Stage 2 or Stage 3 Road Safety Audit

8.1 All those undertaking RSAs on the TLRN must undergo a verification process and receive approval prior to undertaking an RSA on the TLRN. For information on this process please refer to Section 5.

8.2 When an Audit is intended to be undertaken on the TLRN by a team external to TfL, TfL's in-house RSA Team must be advised in advance of the Audit being carried out. Depending on the scheme to be audited, TfL's in-house Audit Team may decide to attend to assist the Audit Team in completing the Audit. The attendance of the in-house Audit Team is intended to ensure consistency across Audits completed by different suppliers, ensure that Audits are completed correctly and to provide additional information regarding the site and auditing in London generally which may not be known by the Audit Team. All notifications should be sent to TfLSafetyAudit@tfl.gov.uk and the in-house team will advise if they would like to attend.

8.3 To ensure the requirements of this Procedure have been met, TfL's in-house RSA Team reserve the right to request a draft copy of any RSA report to review prior to it being issued as final. The Audit Team undertaking the Audit will be notified if TfL's in-house RSA Team requests a draft copy of the Audit for review.

8.4 The RSA Team must consider the measures from the perspective of all the road users that may be anticipated to use the scheme. Where appropriate, a combination of driving, walking and cycling through the scheme may be used to assist their evaluation and ensure they have a comprehensive understanding and appreciation. The RSA Team should also consider the effects of different weather conditions and site conditions that may affect the operation of the scheme.

8.5 As part of the RSA process, the Audit Team must obtain up-to-date collision data for the proximity of the scheme, and undertake an assessment to gain an overview of current collisions. This data is to be used to determine current safety concerns which may not be discernible from the site visit alone and build a greater appreciation of the future operation of the proposals. In Greater London collision data may be obtained from TfL's Strategy and Planning department.

8.6 At each stage of the RSA process, all members of the RSA Team must visit the site of the scheme together during daylight hours.

8.7 At Stage 3 and in addition to the daylight site visit, all members of the RSA Team should visit the site of the scheme together during the hours of darkness to identify hazards particular to night-time operation. Seasonal variation will sometimes necessitate undertaking night-time site visits at a late hour. In such cases the Audit Team Leader may elect to defer the night-time site visit, particularly if the personal safety of the RSA Team is considered to be an issue. When deferring the night-time site visit, the RSA report will be issued in interim form until such time as the night-time visit is undertaken.

8.8 At the Audit Team Leader's discretion, and in consultation with the Client Organisation and TfL's in-house RSA Team, the site may not require a visit during the hours of darkness. In such instances the reasons for not visiting the site at night must be stated within the Road Safety Audit Report.

8.9 With reference to Paragraph 5.18, the Audit Team Leader shall invite representatives from the Police to accompany the RSA Team to offer their views for the Stage 3 Audit. Where it proves not to be possible to arrange a mutually convenient time, the Police will be invited to submit their views in writing. To expedite the Audit process, the Audit Team may visit the site and compile the Audit report in advance of the Police visit, at which time the Audit may be issued as 'Interim'.

8.10 Issues with an immediate safety concern that may be identified at any RSA stage should be notified to the Client Organisation as soon as reasonably practicable. This is to give the best chance for resulting modifications to be undertaken at the earliest opportunity or to ensure that expeditious action can be taken to remedy a potentially hazardous situation. This is particularly important for problems identified during the Stage 3 RSA.

8.11 In exceptional circumstances, such as when auditing unique and complicated schemes to tight deadlines, it is permissible to deviate away from this Procedure to suit local circumstances. The decision to change the way in which Audits are undertaken can only be made by TfL's in-house RSA Team without exception. In such cases, the reasons for not adopting TfL's standard Procedure must be stated within the RSA report.

9 Performing a Stage 4 (a or b) Road Safety Audit

9.1 Only when requested by the Client Organisation will a Stage 4 RSA be undertaken. If required, it will comprise of the following:

a) a comparison of the collision data before the scheme was built with the 12 months (4a) or 36 months (4b) post completion data to identify changes in collision patterns in terms of number, types, and other collision variables, and comparisons with control data (such as Levels of Collision Risk in Greater London);

b) an analysis of the collision data to identify the impact of problems and recommendations identified at previous Audit stages;

c) details of other notable events that have occurred since construction where this is known by the Audit Team;

d) the Stage 4 reports should identify any road safety problems linked to the scheme and indicated by the data analysis and observations during any site visits undertaken. The reports should make recommendations for remedial action. The Stage 4 Audit report template may be obtained through e-mail at TfLSafetyAudit@tfl.gov.uk.

9.2 It may be prudent to consider a night time site visit supplementary to the daytime visit if collision trends are identified during the hours of darkness.

10 Performing an Interim Road Safety Audit

10.1 If it is decided that, at any time during the preliminary and detailed design stages, an interim RSA is required, the Client Organisation will submit an Audit Brief, containing as many of the items identified in Appendix C as are available. Where applicable, the Audit Team, Client Organisation and Design Organisation can meet if considered necessary to enable the Design Organisation to explain their designs and the Audit Team to explain any identified problems and recommendations.

10.2 Interim RSAs must be laid out identically to the corresponding full Audit; however, Audit reports must be marked as ‘Interim’.

11 Completing the Road Safety Audit Report

11.1 For each scheme presented, the RSA Team carries out the Audit and prepares a written RSA report.

11.2 For consistency, all RSA reports must follow TfL's specific report layout without exception. It is intended that all suppliers provide reports following the same layout and structure to ensure consistency in delivery. It is acceptable to modify the visual appearance of the front cover to include corporate branding and internal quality assurance information as appropriate. However, the report structure must follow TfL's standard layout.

11.3 Templates for RSA reports may be obtained through e-mail at TfLSafetyAudit@tfl.gov.uk.

11.4 Details of TfL's standard report layout are contained in Appendix D.

11.5 The problems and recommendations in the Audit Report should be set out in a logical sequence. The use of headed sections, and the details of those headed sections are at the Audit Team's discretion. The Audit Team must avoid the use of superfluous headings for features or road users for which no issues have been identified.

11.6 In some cases, particularly when auditing innovative schemes, the auditor may find it prudent to make a recommendation using the words 'consider' or 'monitor'. Whilst use of this wording should be avoided where possible, in some cases it may be unavoidable. It is appreciated some Clients may overlook these problems as the recommendation may be seen as too weak, hence, these problems should be given greater emphasis within the Audit report.

11.7 RSAs must be concise and understandable by those without a background in the field. The use of complicated engineering terminology should be avoided.

11.8 The RSA report is submitted directly to the Client Organisation. In some instances to expedite the process it may be beneficial to include the Design Organisation in this correspondence. Once issued, the RSA Team's input into the Audit report is complete unless stated otherwise and all issues raised in it must be addressed by way of the formal response, except where a Stage 3 night-time site visit is deferred. When a Stage 3 night-time site visit is deferred, the RSA report should be issued in Interim form until such time that the site visit has been carried out. It should be noted that when an interim report is issued, the Client Organisation and Design Organisation are encouraged to complete their responses within the report and action accordingly in advance of the final report being issued.

11.9 Road Safety issues that are beyond the scope of the RSA but that the RSA Team believes should be brought to the attention of the Client Organisation, may be included within Section 4 of the RSA report. These issues could include areas where repair or renewal may be required, operational concerns or existing poor provision. Such issues should be clearly identified as being beyond the scope of the RSA and should not be integrated into the main Problem and Recommendation section of the report.

11.10 Section 4 of the RSA report is not intended as an opportunity for the Audit Team to provide a record of inspection of the existing site conditions, and only issues that are regarded by the Audit Team as significant should be included. A large number of superfluous issues within this Section may dilute the RSA and remove focus from the genuine issues of concern and should hence be avoided. It may be preferable to provide such information by e-mail to the Client Organisation separate to the RSA report.

11.11 Existing issues and problems identified beyond the geographical extent of the scheme should not normally be included within Section 4 of an RSA report unless those issues impact directly on the operation or delivery of the scheme as presented.

12 Responding to the Road Safety Audit Report

12.1 In recent times TfL has become aware that Designer and Client responses are not being completed despite it being a mandatory requirement, particularly for developer and private residential schemes. RSA reports are increasingly subject to Freedom of Information requests, and are often provided without Designer's and Client Organisation's responses highlighting the full design process.

12.2 To mitigate against this problem, all RSA reports completed on the TLRN must have the Designer's and Client Organisation's response incorporated within the body of the RSA report in accordance with TfL's standard layout. Hence, it is clear to any reader of an Audit report whether the Designer and Client Organisation have given due consideration to the problems raised in the report and any intended actions. It will also be clear if this process has not been completed.

12.3 The Client Organisation seeks the Design Organisation's response to each problem identified in the RSA report and this is recorded in the Designer's response areas of the RSA report. The response will contain details of how the problems identified in the RSA report will be resolved. Where the Design Organisation disagrees with the problems or recommendations identified in the RSA report, or decides that the solutions recommended are not appropriate, the response justifies the alternative action to be taken.

12.4 It is the responsibility of the Client Organisation to review the RSA report and ensure that each problem identified is given due consideration.

12.5 The Client Organisation adds comments in the relevant sections of the RSA report as appropriate.

12.6 The RSA report incorporating the Designer's and Client Organisation's comments is signed off by the Client Organisation and a copy is forwarded to the Audit Team Leader for information.

12.7 The RSA report is not an opportunity for the Client and the Designer to document their differences. Any disagreements relating to the progression of the proposals should be discussed and agreed separate to the RSA report, and the final way forward on which the Client and Designer are agreed should be documented within the Designer's response section. The Client Organisation is encouraged to use the Client section to provide background information to complement the Designer's decisions that may be beneficial to those reading the RSA report.

12.8 With the prior agreement of TfL's in-house RSA Team, alternative response / comment / sign-off roles and arrangements may be considered to suit local circumstances, but only with the approval of all parties involved.

12.9 The Client Organisation commissions the Design Organisation or others if applicable, in respect of changes required to the scheme arising from the RSA response. A scheme should be submitted for RSA again if significant changes are made to it as a result of an RSA.

12.10 The RSA response sections of the RSA report must be completed before the next stage in the schemes development is begun.

13 Risk Assessments within Road Safety Audits

13.1 TfL's in-house Road Safety Audit Team has given consideration to the provision of a risk assessment based approach to the auditing process and the adoption of a scoring based criteria for the prioritisation of RSA problems. It is the view of TfL's in-house Road Safety Audit Team that the introduction of such a method would be misleading and contrary to the aims of RSA in general.

13.2 Based upon a review of current literature, TfL's in-house Road Safety Audit Team is not aware of any tangible benefit in undertaking this assessment. This opinion is backed up by the Chartered Institution of Highways and Transportation guidance document 'Road Safety Audit (2008)' which states "The comprehensive research carried out prior to the publication of HD 19/03 included a section on the possible use of risk assessment within Road Safety Audit. Trials were carried out, but the idea was dropped, following an inconsistent result in the trial". (Paragraph 6.5.3)

13.3 Contained within Manual for Streets is the statement "One area of concern with the existing system is that RSAs may seek to identify all possible risks without distinguishing between major and minor ones, or quantifying the probability of them taking place. There can also be a tendency for Auditors to encourage designs that achieve safety by segregating vulnerable road users from road traffic. Such designs can perform poorly in terms of streetscape quality, pedestrian amenity and security and, in some circumstances, can actually reduce safety levels" (paragraph 3.7.11).

Furthermore, "It would therefore be useful if RSAs included an assessment of the relative significance of any potential safety problems. A risk assessment to consider the severity of a safety problem and the likelihood of occurrence would make it considerably easier for decision makers to strike an appropriate balance" (paragraph 3.7.12).

13.4 TfL's in-house Road Safety Audit Team does not agree with the statement outlined in 13.3 above for the following reasons:

- With reference to RSA best practice, the audit process is only intended to identify problems for which injury may occur. Problems for which injury is not a probable outcome should not be raised within an RSA report. Categorisation in terms of severity may only therefore fall into the three prescribed severity criteria (fatal, serious and slight). Collision severity is based upon a range of contributing factors, and identical collisions in identical circumstances can result in a different severity outcome. This is particularly true for serious and fatal collisions. Taking this into account, any severity criteria must allow for this potential differentiation, therefore, the assessment criteria would have to be defined in terms of 'low severity' and 'high severity'. If this criteria were to be adopted, collisions resulting in 'low severity' are likely to be disregarded, and not given due consideration.

- Any scoring matrices would require an assessment of collision frequency, or the likelihood of any collision occurring. This can only be ascertained through the use of control data for similar sites in London, which currently does not exist to the level of detail required to make it viable. As a result, an Auditor would be required to make an approximation based upon experience, making the process highly subjective. There may also be a tendency to over-estimate a collision frequency, particularly for collisions resulting in 'low severity'.
- Fundamental to the use of any scoring system is the consistent application across all schemes. The highly subjective nature of a scoring system makes consistency impossible, and the same assessment undertaken by different Auditors is likely to result in different outcomes.
- There is an inference that in some cases an increase in collision rate could be acceptable if the likelihood and severity are not 'high'. This method is inherently weighted against less vulnerable modes which are less likely to sustain a 'high severity'. This implication goes against the aims of the Road Safety Audit process in reducing the likelihood and severity of all collisions.
- The determination of risk, and whether any given risk is acceptable in delivering the aims of any given project lay with the Design Organisation. A Road Safety Auditor undertaking this assessment may be seen to dilute this responsibility and imply a prioritisation between different design options.
- Under CDM, the designer is required to manage and document risk. The provision of a risk assessment within an RSA may be seen as duplication and lead to ambiguity if the Auditor and Designer are in disagreement as to the level of risk for any given problem.
- The provision of a risk assessment is likely to increase the cost and duration of RSAs, although this is not a defining factor.
- It is highly probable that the Auditor, Designer and Client Organisation will have differing opinions regarding the quantification of any given risk. This may provide greater incentive for the Design Organisation and Client Organisation to petition the Audit Team to reduce the risk rating to be more favourable.
- It is the view of the TfL's in-house Road Safety Audit Team that the quantification of risk, and the subsequent decision to introduce or amend a proposal lay with the Designer, and should be documented through the Designer's response sections within an RSA report.

14 Retention of Records

14.1 In accordance with TfL's document retention Policy for Road Safety Audit reports and related information, these records must be retained for a period of 21 years from the date the report is issued.

14.2 It is the responsibility of any Client Organisation's external to TfL to ensure all Road Safety Audits are retained in accordance with their own Policy.

14.3 The Audit Team Leader ensures that all working documents supplied as part of the Audit Brief, including plans and maps are collated and retained.

14.4 It is the responsibility of the Client Organisation to retain a copy of the signed final Road Safety Audit Report incorporating the Road Safety Audit Response.

14.5 Filing and retention arrangements for Road Safety Audits must pay due regard to complying with the Freedom of Information Act.

14.6 The record of Road Safety Audits held by the Road Safety Audit Team for reference should not be relied upon as a master record.

15 References

15.1 Design Manual for Roads Bridges (DMRB) Volume 5 Section 2, Part 2, HD19/03: (2003) [Department for Transport]

15.2 Interim Advice Note 152/11, Road Safety Audit – Compliance with EC Directive 2008/96/EC: (December 2011) [Department for Transport]

15.3 Mayors Transport Strategy (May 2010) [Transport for London]

15.4 Safe Street for London, The Road Safety Action Plan for London 2020: (June 2013) [Transport for London]

15.5 Construction (Design and Management Regulations) (2007) [Health and Safety Executive]

15.6 Manual for Streets (2007) [Department for Transport]

15.7 Levels of Collision Risk in Greater London [Transport for London]

16 Document Control

Issue	Date	Change Summary	Author	Checker	Approver
6	Aug 13	Amended following review, reformatted and issued for use	M Borrett	A Coventry	M Borrett
7	Dec 13	Roads references amended to AMD. Internal hyperlinks removed	R Pierson	J Fraser	J Fraser
8	20 May 2014	Amended following review to current practices	A Coventry	TfL RSA	TfL RSA

Appendix A - Road Safety Audit Definitions

1. Road Safety Audit (RSA)

An RSA is the staged evaluation of the safety of changes to the highway during design, implementation and subsequent operation. It seeks to identify potential safety hazards that may result in personal injury for any type of road user and to suggest measures to eliminate or mitigate those problems. This evaluation is carried out during the design stages (Stages 1 & 2), as closely as possible after the measures become operational (Stage 3), and at 12 and 36 months after the measures become operational (Stages 4a & 4b respectively).

2. Interim Road Safety Audit

An Interim RSA is the application of RSA to a scheme at intermediate stages during the preliminary design, detailed design or construction stages. It is not a substitute for the formal stages of Audit.

3. Audit Brief

The Audit Brief is the information provided to instruct the RSA Team to undertake the Audit. It defines the scope of the Audit and provides sufficient supporting information that the RSA Team can carry out the Audit.

4. Road Safety Audit Report incorporating the response from the Designer

The RSA report is the report prepared by the RSA Team, which describes potential safety problems identified within the proposals and recommends actions to overcome or mitigate them. Built into the RSA report is the Designer's response which describes how the Client Organisation will implement the recommendations made in the RSA report and/or why any of the recommendations made in the RSA report cannot or will not be incorporated into the proposals.

5. Highway Improvement Scheme

A Highway Improvement scheme includes all works that involve construction of new highway or permanent change to the existing highway layout or features. This includes but is not limited to, changes to road layout, kerbs, signs and markings, lighting, signalling, drainage, landscaping and installation of roadside equipment. A like for like replacement does not constitute a change.

6. Road Safety Engineering

Road Safety Engineering is the design and implementation of physical changes to the road network intended to reduce the number and severity of collisions involving road users, drawing on the results of Collision Investigations.

7. Collision Investigation

Collision Investigation is the collection and examination of recorded personal injury collision data over a period of time in order to identify patterns, common trends and factors that may have contributed to the collisions.

Appendix B - Roles and Responsibilities

1. Client Organisation

The Client Organisation is the organisation with overall responsibility for the scheme to be Audited. In the majority of cases, this will also be the scheme sponsor.

2. Highway Authority

The Highway Authority is the authority that is responsible for the upkeep and maintenance of the Highway or asset owner for the route on which the scheme is to be implemented.

3. Design Organisation

The Design Organisation is the organisation commissioned to undertake the various stages of the design. Reference may be given in this Procedure to the role of the Designer, which is the individual responsible for undertaking the design of the scheme.

4. Road Safety Audit Team

The Road Safety Audit Team is a team consisting of at least two people, independent of the Design Organisation, comprising of staff with appropriate levels of training, skills and experience as specified in Section 5 of this Procedure, who carry out the Road Safety Audit.

a. Audit Team Leader

The Audit Team Leader is the person with overall responsibility for carrying out the Audit, managing the Audit Team, certifying the report and responsible for ensuring the Audit is undertaken in accordance with this Procedure.

b. Audit Team Member

An Audit Team Member is an individual appointed to the Road Safety Audit Team to assist the Team Leader.

5. Other Road Safety Audit Parties

a. Metropolitan Police / City of London Police

The relevant Police representative for the specific area.

b. Audit Observer

An Audit Observer is an individual who accompanies the RSA Team to gain experience of the Audit process.

c. Specialist Advisor

A Specialist Advisor is appointed by the Audit Team Leader to advise the RSA Team on occasions when a scheme includes unusual or specialist measures where their experience may be beneficial to the RSA Team.

Appendix C - Information Required for the Audit Brief

The Audit Brief

In conjunction with this Procedure, the Audit Brief defines the scope of the Road Safety Audit and must contain all the information necessary to give the Road Safety Audit Team a full understanding of the scheme.

The Audit Brief is prepared utilising the Audit Brief checklist. This document may be obtained via e-mail at TfLSafetyAudit@tfl.gov.uk.

The Audit Brief Checklist should include, where appropriate;

a) an instruction to carry out the Road Safety Audit as per this Procedure (SQA-0170);

b) scheme title;

c) a description of the section of carriageway or junction to be Audited;

d) a general description of the purpose and key elements of the scheme to help give the Audit Team an understanding of the purpose of the scheme and how the layout will operate;

e) scheme drawings to scale ('as-builts' for Stage 3 and 4 Audits);

f) traffic signal and phasing diagrams;

g) any known departures from standard;

h) schedules of traffic orders;

i) all previous Road Safety Audit Reports relating to the scheme;

j) all previous Road Safety Audit Response Reports relating to the scheme;

k) appropriate sized plans of the scheme for the Road Safety Audit Team to mark up and include in the Road Safety Audit Report (either A4 or A3 sized sheets);

l) traffic flow / modelling data;

m) pedestrian flow / modelling data;

n) where the proposal contains new or modified traffic signals and detailed designs have already been prepared and had a design / safety check undertaken by TfL's Traffic Directorate, copies of their design / safety checklist must also be forwarded to the Road Safety Audit Team;

o) any other information relating to existing features that in the opinion of the Client Organisation, will be required by a Road Safety Audit Team that has no prior knowledge of the proposals or existing conditions;

p) WBS Code (TfL Schemes);

q) purchase Order / Authorisation to bill (Borough / Developer schemes as appropriate);

Appendix D - Details of TfL's Standard Report Layout

TfL's Standard Report Layout

All reports must follow TfL's standard report layout, therefore, the Road Safety Audit Report must be structured logically within headings, and include details of;

a) the Audit Stage;

b) the section of highway being Audited;

c) membership of the Road Safety Audit Team;

d) details of who was present at the site visit, when it was undertaken and what the weather conditions were on the day of the visit;

e) description of the purpose and key elements of the scheme;

f) details of previous Road Safety Audits and responses, including an assessment of resolution of problems raised therein;

g) a separate statement for each safety problem identified, describing the location and nature of the problem and the type of collisions considered likely to occur;

h) recommendations, in broad terms, for resolving any of the potential safety problems identified during the audit;

i) a dedicated space for the Designer to enter their comments against each of the problems raised. Provision of comments in this space by the Designer will constitute the Designer's Response;

j) a dedicated space for the Client Organisation to enter comments as appropriate;

k) A3/A4 size plans of the scheme, marked up and referenced to problems;

l) a validity statement to be signed by the Road Safety Audit Team confirming Team Membership and independence from the Designer;

m) a Design Organisation Statement to be signed by the Designer confirming they have given due consideration to the issues raised within the Audit Report;

n) a Client Statement to be signed by the Client Organisation confirming they accept the actions proposed by the designer to mitigate against the issues raised in the Audit Report;

o) a schedule of drawings and documents examined;

p) details of 'before and after' collision analysis (where undertaken and particularly Stage 4 Audits).