highways england

Specialist Professional and Technical Services Framework
Task Ref: 1-286

Task Title: Road Safety Audit - Maintain & Develop Road Safety Audit Database

QUARTERLY REPORT
July 2019 to September 2019

Date: November 2019 **Version: 2.0**

Document Control

Document Title	QUARTERLY REPORT July 2019 to September 2019
Author	Neil Hutchings
Owner	Richard Webster
Distribution	Task 286 - ACJV Project Team
Document Status	Final

Revision History

Version	Date	Description	Author
2.0	18/12/19	Final	Neil Hutchings

Reviewer List

Name	Role
John-Paul Doherty	ACJV Technical Review
Richard Webster	Highways England Reviewer

Approvals

Name	Signature	Title	Date of issue	Version

Table of Contents

1. Introduction

1.1. Quarterly Reporting

This report comprises the quarterly review of Road Safety Audit (RSA) reports submitted to the Highways England Safer Roads - Design Team (SR-DT) inbox at roadsafetyaudit@highwaysengland.co.uk between **1st July 2019 and 30th September 2019** (inclusive).

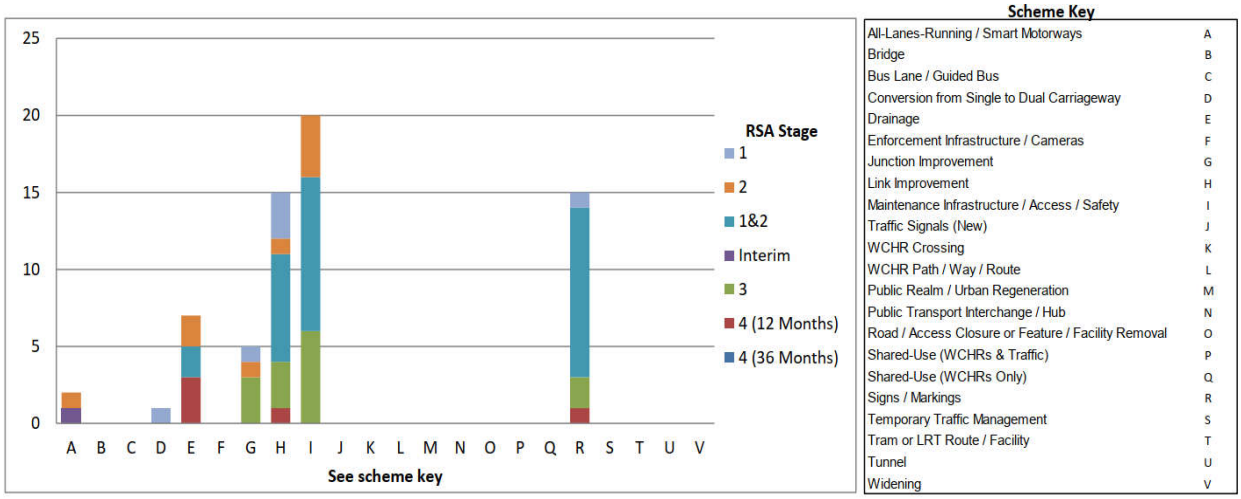
1.2. Scope

During this quarter, **a total of 90 RSAs were submitted**, of these:

- 88 RSAs were carried out to GG 119; and
- 2 RSAs were carried out to HD 19/15.

The types of schemes covered by the submitted RSAs are shown in Figure 1-1 below.

Figure 1-1 RSAs submitted this quarter (July-September 2019) by scheme type



From these, **27 sample reports** were selected as suitable for review. The list below details the numbers of each stage of RSA forming the study sample together with totals submitted for the quarter.

- Stage 1 RSAs — 3 reports of 6 submitted
- Stage 2 RSAs — 5 reports of 9 submitted
- Combined stage 1 & stage 2 RSAs — 7 reports of 30 submitted
- Stage 3 RSAs — 6 reports of 14 submitted
- Interim RSAs — 0 reports of 1 submitted
- Stage 4 RSAs (12 months) — 6 reports of 29 submitted

The samples selected for review all purport to have been carried out to GG 119.

The one interim RSA submitted detailed no problems and so was not selected for review.

1.3. RSAs Submitted by Highways England Areas

Figure 1-2 below illustrates all RSAs submitted to the SR-DT inbox since 1st January 2014 by each Highways England area.

Figure 1-2 RSAs submitted since 1st January 2014 by Highways England Operational Area

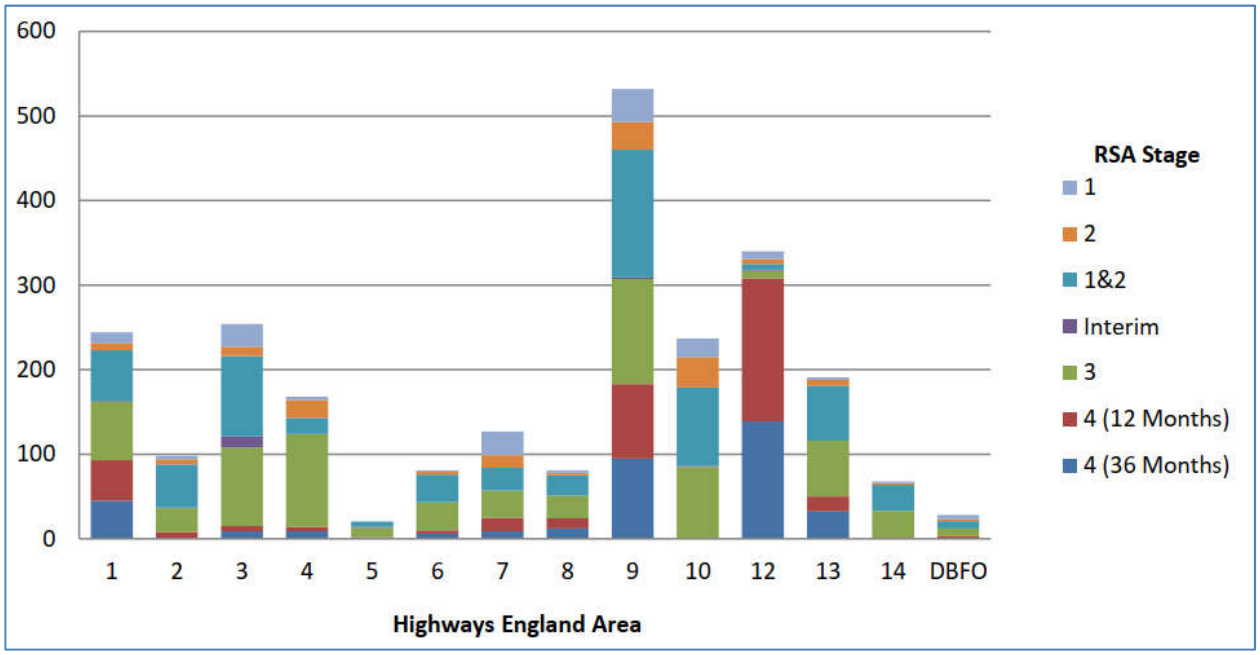
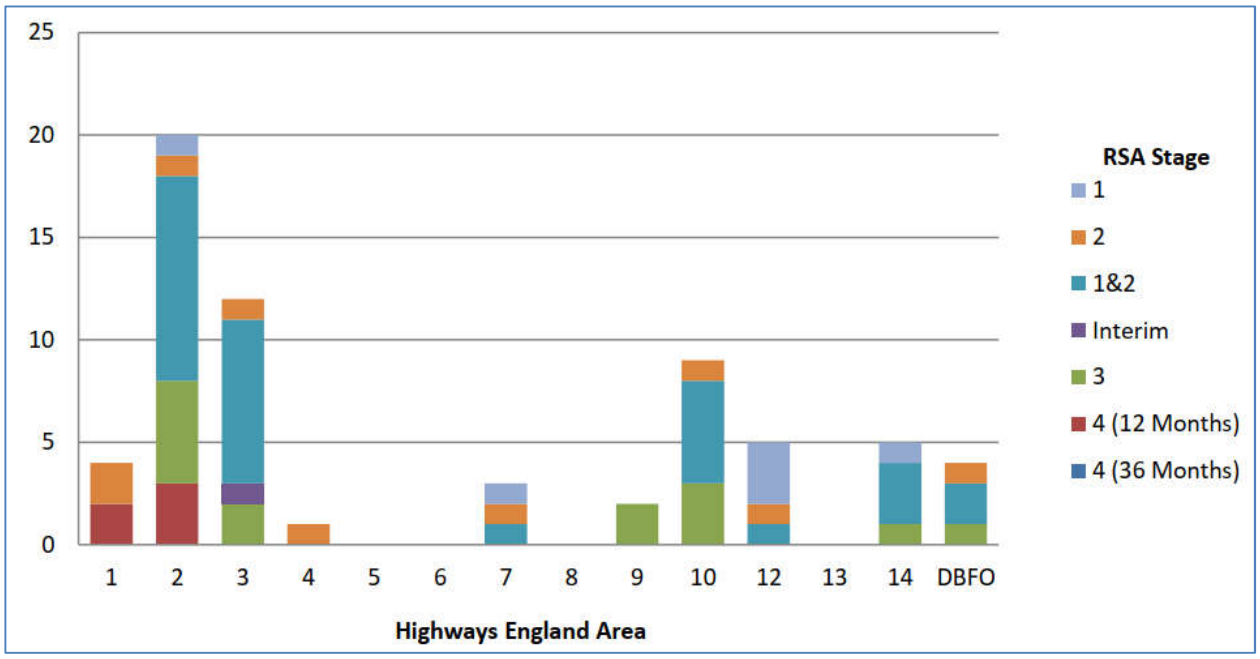


Figure 1-3 below illustrates all RSAs submitted to the SRDT inbox during this quarter, 1st July 2019 to 30th September 2019.

Figure 1-3 RSAs submitted this quarter (July- September 2019) by Highways England Operational Area



2. Qualitative Review of RSA Reports

This section comprises a qualitative review of RSAs sampled from those recorded in the main database. The sample selection is described under heading 1.2 above. The sampled reports have been used as the principal source for this review but occasionally, reference is made to the database as a whole for context.

As far as is practicable, this quarterly report seeks to feed discussion on:

- Common road safety problems raised by audit teams with a view to providing information which might be used by the SR-DT and others in the industry to identify and inform potential changes to Requirements and Advice Documents (RADs). This comprises a high-level categorisation of the problems raised;
- Inconsistencies between problems and recommendations raised for similar design elements; and
- Good practice and areas for potential improvement as evident from the sampled RSA reports.

2.1 Common Road Safety Problems

This section comments on the frequency with which road safety problem types appeared in RSAs within the sample set.

For clarity, this section uses the following terms of reference. Definitions are as given in GG 119:

- **road safety problem** – An identified road safety matter together with a resultant potential road traffic collision type, identified highway scheme location and summary;
- **road safety matter** – An element of the existing road environment or proposed road environment that could potentially contribute to a road traffic collision or features that could present a risk of injuries to road users; and
- **recommendations** – A proportionate and viable suggestion for improvement to eliminate or mitigate an identified road safety audit problem.

Where appearing in quoted text, the words *"problem"*, *"matter"* and *"recommendation"* may have been used differently.

The sampled reports detailed a total of 119 road safety problems covering 127 road safety matters. These include previously raised problems not resolved at the time of each of the sample RSAs.

This gives an average of 1.07 matters per problem reported which is a small decrease from 1.22 in the preceding quarterly report (April to June 2019).

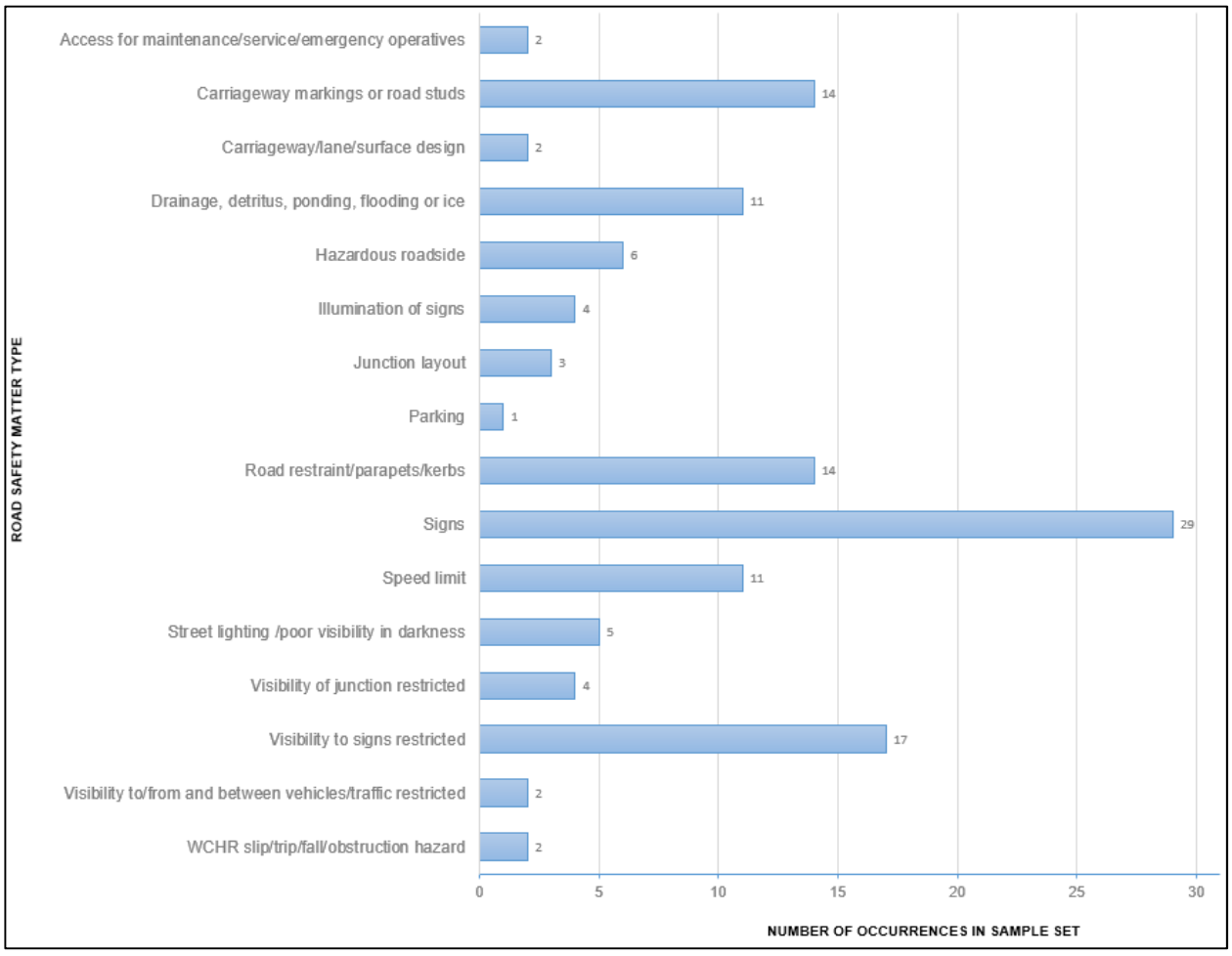
For the purpose of this quarterly report, the high-level categorisation of the problems and matters identified within the sample group have been expressed as follows, with problem categorisations in **bold** type and matters in [square brackets]:

- **Access for maintenance / service operatives / emergency services** [health and safety]
- **Carriageway markings or road studs** [poorly located / inconsistent / inadequate / confusing]
- **Carriageway /lane** [lane width / taper lengths]
- **Drainage and related ponding and flooding** [carriageways]
- **Hazardous roadside** [street furniture / objects not passively safe / object remnants / kerbs]
- **Illumination of signs** [light levels reduced by obstruction / absence of illumination]

- **Junction layout** [approach speeds / restricted movements]
- **Parking** [the scheme encourages injudicious parking]
- **Road restraint / parapets / containment kerbs** [inadequate / working width compromised]
- **Signs** [poorly located / incorrectly mounted / lack of lateral clearance / inconsistent / absent / incorrect / inadequate / x-height / reflectivity / post-size / confusing]
- **Speed limit** [signs absent / environment does not encourage compliance]
- **Street lighting / poor visibility in darkness** [inadequate / light levels reduced by obstruction]
- **Visibility of junction layout restricted** [by vegetation / signs / infrastructure]
- **Visibility to signs restricted** [by vegetation / other signs / street furniture / alignment]
- **Visibility to/from and between vehicles/traffic restricted** [by street furniture / road restraint]
- **WCHR slip, trip, fall or obstruction hazard** [poor or uneven surface / object remnants]

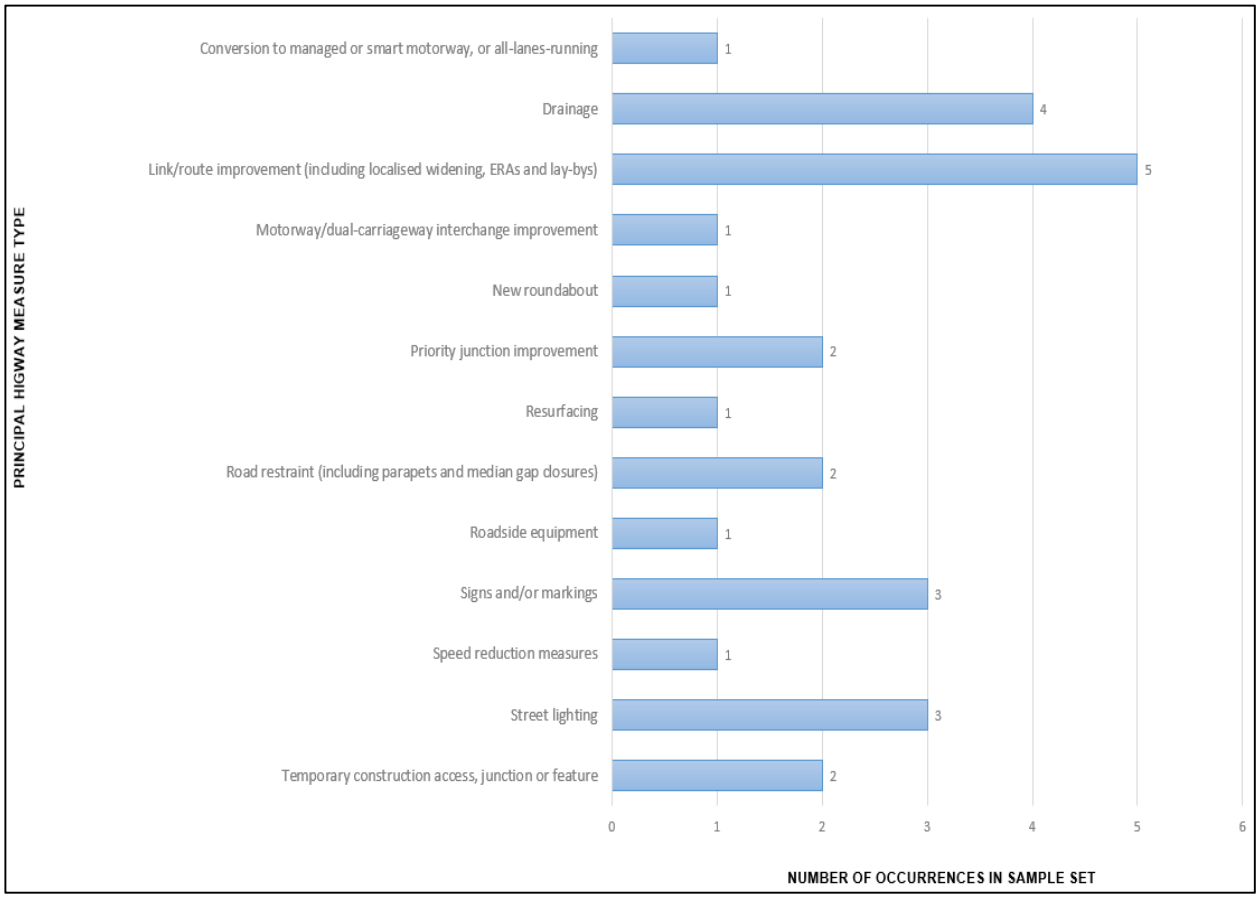
The 127 matters covered in the sampled reports are categorised in Figure 2-1 below which indicates the frequency of occurrence. The categories of these are shortened to fit the figure dimensions and the chart should be read in conjunction with the bullet list above for a fuller description.

Figure 2-1 Road safety matters by number of occurrences



As context for the occurrences of road safety matters given above, Figure 2-2, below, charts the principal highway measures that best describe the scheme type for each RSA report in the sample set.

Figure 2-2 Principal highway measures by number of occurrences in sample set



2.2 Good Practice and Areas for Improvement

This section identifies areas of good practice and areas with potential for improvement as evident from the RSAs sampled for the purpose of this quarterly report.

Text and other materials quoted or copied from real RSA reports have been anonymised. Accordingly, all road, scheme and location names and descriptions, together with the names of persons and organisations involved, should be taken as fictional and not associated with any actual scheme, location, organisation or person.

2.2.1 Inclusion of collision data in stage 1, 2 and 3 RSA reports

A number of the stage 1, 2 and 3 reports reviewed contained a detailed summary of the collision data in the introduction of the RSA report. Whilst collision data provides useful context for the scheme proposals at stages 1, 2 and 3, there is no requirement to include such summaries in the report the report. If the RSA team feel that the collision data provided has some bearing on the problems identified or on their recommendations, this would be best described in the problem and recommendation section itself.

2.2.2 Tenuous links to collision types described

A number of the RSA reports reviewed contain no clearly described link between problems identified and potential collision types which might result. In some cases, terms such as *"shunt"*, and *"side-swipe"* are used without any real evidence behind the conclusion that these collision-

types are likely. These terms are not necessarily inappropriate but there is naturally some speculation involved in determining what collision types might occur in any given situation. This is particularly difficult for the RSA team when multiple collision types might be possible. RSA teams should endeavour to describe clear and logical connections between the problem they have identified and the collision types which might result.

2.2.3 Inadequate description or illustration of problem

In some cases, problems are described which might be unfounded or misinformed. In one example, a stage 3 RSA raised concern about visibility to a sign at the exit of a roundabout.

"The 'two-way traffic' warning sign located at the [north-eastern] *end of the link road, is located on the nearside of the roundabout exit. The sign location may be difficult for drivers to see when approaching the roundabout on the* [A999 approach]. *If the warning sign is not clearly visible to all drivers, some may choose to travel in the off-side lane leading to head on collisions with opposing vehicles."*

The problem is illustrated by the following photographs:

Figure 2-3 Photos taken from RSA team vehicle

The problem text describes the matter as being about visibility to the sign for drivers on the preceding approach to the roundabout, but the photographs used are from a vehicle on the circulatory carriageway where visibility to the sign would only be momentarily obscured by the driver's rear-view mirror. These photographs, therefore, do not illustrate the concern described.

In addition, the recommendation was to relocate the signs further forward along the link after the roundabout so as to increase forward visibility to the sign. However, from the photographs, it would appear that the sign is appropriately located just in advance of where drivers exiting the roundabout might mistakenly assume that they are still on a one-way road. To recommend a relocation of the sign in this case, might create a hazard.

2.2.4 Combined stage 1 and stage 2 RSAs

GG 119 requires that a stage 1 RSA is carried out at the completion of preliminary design. The combination of stage 1 and stage 2 RSA reports is only permitted at completion of the detailed design stage where no preliminary design has been undertaken. During this quarter, in comparison to the proportion of RSAs carried out separately at stage 1 and stage 2, the proportion of GG 119 RSA reports purporting to be combined stage 1 and stage 2 RSAs was 70%. This represents a significant **increase** from the proportion recorded in the previous quarter (29%).

- **4** no. stage 1 RSAs to GG 119 this quarter
- **9** no. stage 2 RSAs to GG 119 this quarter
- **30** no. combined stage 1 and stage 2 RSAs to GG 119 this quarter.

A study of the database has revealed that the proportion of combined stage 1 and stage 2 RSAs submitted (when compared to separate stage 1 and stage 2 RSAs) has remained relatively consistent since January 2014 and that no significant change in proportion has been evident since GG 119 was introduced.

Table 2-1 Percentage of combined stage 1 and stage 2 RSAs

Year (Jan-Dec)	RSA 1	RSA 2	Combined	Total	%age
2014	21	36	116	173	67%
2015	16	10	117	143	82%
2016	21	11	97	129	75%
2017	12	21	67	100	67%
2018	69	45	173	287	60%
2019	24	28	104	156	67%

The sample set of GG 119 RSAs for this quarterly review included seven stage 1 and stage 2 RSAs which had been combined. From a consideration of the scheme types, problem descriptions, and the drawings listed in the appendices of combined stage 1 and stage 2 RSAs within the sample set, it seems possible that **three out of the seven** combined RSAs reviewed were carried out on schemes which might have, or should have, had a preliminary design stage.

One of the combined stage 1 and stage 2 RSA reports submitted this quarter contained a section entitled, “Clarification of Decision of the Stage 1 Audit”. The section contained a statement by the RSA team saying:

“The proposals are an additional road sign, two pairs of ahead arrow road markings, red infill to existing hatching and vegetation clearance within the area, therefore a Stage 1 Road Safety Audit was not considered necessary.”

GG 119 makes it very clear that a decision to not carry out a stage 1 RSA is justified only based on whether or not a preliminary design has been carried out. The RSA text cited above is not in quotes and does not attribute the comment to the brief or to a statement by the designer or Overseeing Organisation. RSA teams should avoid including text which might appear to endorse any decision such as combining the stage 1 and stage 2 RSAs. If the RSA brief details the reasoning behind the decision to combine the stage 1 and stage 2 RSAs, the RSA team could include a paragraph describing this but should make it clear that they are quoting from the source.

2.2.5 Absence of information

It appears to be quite common for RSAs submitted to contain problems relating to the fact that there is missing information. It is also common for RSAs to include statements in the introduction of the RSA report which, whilst illustrating that the information provided might have been short on detail, often do not indicate the missing information was requested.

Some examples from various reports follow:

"No specific details have been provided to the Audit Team relating to the offset from carriageway edge for the proposed signs. The Audit Team is concerned that should these signs be erected within the verge, adjacent to [Victoria Street] *with insufficient offset from the carriageway edge, there is a risk that passing motorists may collide with the sign face with the potential for injury to occur."*

"Three of the problems raised in the Stage 1&2 Road Safety Audit report for the scheme may still be an issue, although this is not clear from the information provided"

"No vegetation clearance has been shown on the drawings provided for this audit."

Clause 4.5 of GG 119 states that *"Where the RSA team has identified that the RSA brief is insufficient for their purpose, a request for further information shall be made to the Overseeing Organisation."* The following clause, 4.5.1, states that *"Any information requested but not supplied to the RSA team should be identified in the introduction to the RSA report."*

Accordingly, RSA teams should avoid raising problems based solely on speculation about missing information and designers should endeavour to clarify their intended approach to the missing element(s) of design to allow the RSA team to determine whether or not potential problems might arise.

2.2.6 Existing problems unaffected by the scheme

One of the reviewed stage 2 RSAs detailed a problem pertaining to the fact that there were two existing signs on separate posts on one side of a carriageway but the existing corresponding signs on the opposite side were combined on one post. From the scheme description, it does not seem apparent that these signs were in any way related to the scheme and the RSA team does not explain how the scheme would likely increase the existing risks. RSA teams should focus on scheme measures and not on existing features that are unaffected by the proposals.

2.2.7 Other clarifications

A number of RSAs reviewed this quarter have included GG 119 checklist headings with comments such as *"No specific road safety issues have been identified at this stage"*. There is no requirement to include these headings in RSA reports, particularly if no concerns have been raised.

In addition, RSA teams should use the GG 119 checklists only as an aide memoire. The checklists should not be considered by RSA teams as a comprehensive approach to identifying problems. There is a risk that if RSA teams treat the checklists as comprehensive, they might restrict their comments if trying to make the problem fit into a particular checklist description.

2.2.8 Recommendations to reduce the standard of provision

One combined stage 1 and stage 2 RSA reviewed pertained to new signs being provided but which were to be larger than the existing signs in place at the site. The concern raised was that the large, proposed warning signs might detract from the smaller, existing U-turn prohibition signs nearby. The recommendation stated:

"It is recommended that any new signs are of a similar size and nature to the existing signs."

Effectively, this recommendation is to change the proposed signs to smaller ones but seems to take no account of whether or not the existing signs were appropriate for the speed environment.

Whilst compliance with standards lies outside of the scope of RSAs, RSA teams should also not give direct design instructions which might lead the designer to provide a sub-standard solution.

2.2.9 Location plans

GG 119 requires that RSAs include *"a location plan based on the scheme plan(s), marked up and referenced to problems."* A number of RSA teams include larger scale plans to illustrate the location, scope and scale of the scheme. This can be a useful practice, particularly in the case of geographically large schemes but it should not be considered essential for smaller schemes for example.

One of the combined stage 1 and stage 2 RSAs on a relatively small scheme included a general location plan (O/S mapping at 1:50,000) but did not include any scheme plans. Nor did it indicate specific locations for the problem raised. The RSA raised only one problem pertaining to *"all proposed signfaces"* which might be why no locations were shown on the plan. However, from the information included in the report, the scheme only seemed to involve gateway-type signing at each end of a short section of road so there was no reason why the plan should not have detailed the problem locations.

It is recognised that if a problem is applicable to the scheme as a whole, or to many various locations, a different approach to the problem location plan might be adopted. For example, phrases such as *"Problem 1 is general to the scheme as a whole and so is not shown on the problem location plan."* might be included. However, where problems are easily referenced to specific locations and can be clearly detailed on scheme plans or excerpts of scheme plans, RSA teams should do so.

2.2.10 Time elapsed between RSA stages

One of the stage 2 RSAs reviewed this quarter was carried out six years after the stage 1 RSA. GG 119 requires that *"Stage 1 and stage 2 RSAs shall be repeated if the previous RSA for the relevant stage is more than 5 years old."* This is particularly pertinent given that the scheme being audited was a capacity improvement scheme. It is not possible to ascertain from the RSA report whether the design changed significantly between the stage 1 and stage 2 RSAs but given that flows might have changed in the intervening six year period, it seems possible that design changes might have been introduced and should have been subject to a repeated stage 1 RSA.

2.2.11 Stage 4 collision analysis

In one stage 4 RSA report, the collision history within the extents of the scheme shows one collision occurred in the 12 months since the improvements were implemented. This compares to three collisions in the 36 months before the improvements. This is the sum of the collision "analysis" in the report which makes no comment regarding an apparent shift in collision type. The collision record described shows that whilst the number and type of collisions per year has remained consistent (one slight collision per year in dry and light conditions), the previous three year history shows shunt-type collisions, but the most recent year shows a vehicle struck at a right-angle when emerging from a junction. It is possible that this change in collision type is a random variation; it would be difficult to be certain with such a small collision population but no comment to this effect was included. There is concern however that the RSA report seems to detail just a count of collisions with no meaningful analysis with regard to whether or not remedial action might be appropriate.

Appendix A

Quarterly Factsheet
1st July 2019 to 30th September 2019

Road Safety Audit Database

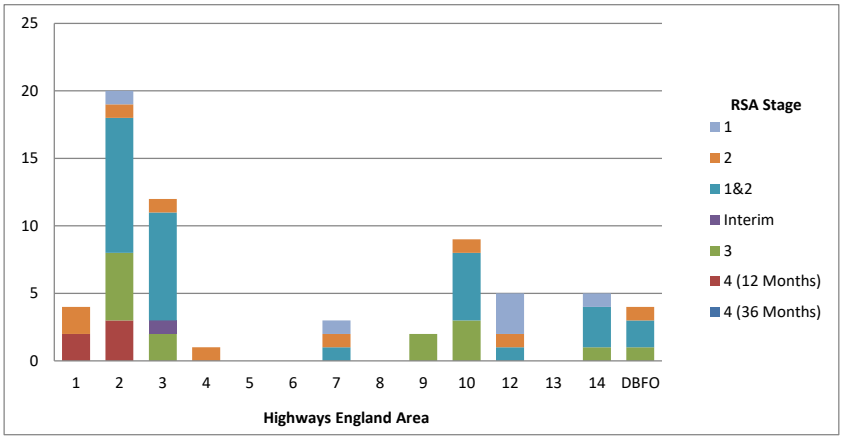
Quarterly Factsheet - 1st July 2019 - 30th September 2019 (Rev. 1)

Basic information

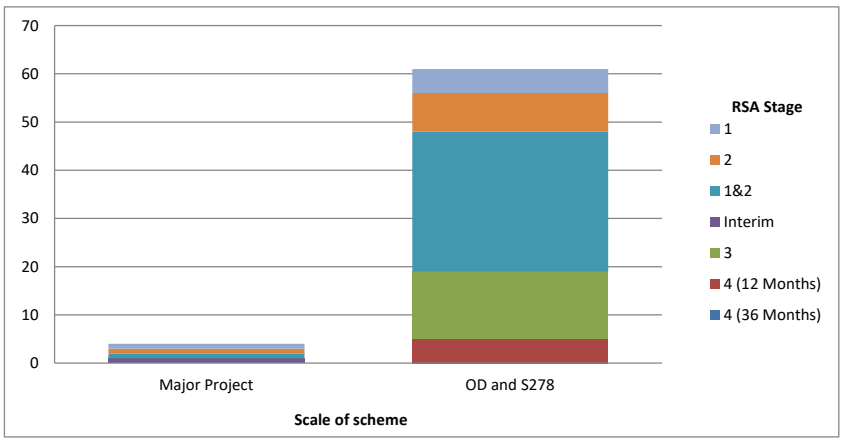
	This Quarter	Database Since Jan 2014
Number of RSAs submitted	66	2469
RSA team leader specifically identified	100%	96%
Overseeing Organisation project manager specifically identified	100%	90%

	This Quarter	Database Since Jan 2014
Average number of problems recorded	2.7	1.7
Response report issued	12%	3%
Exception report issued	0%	1%

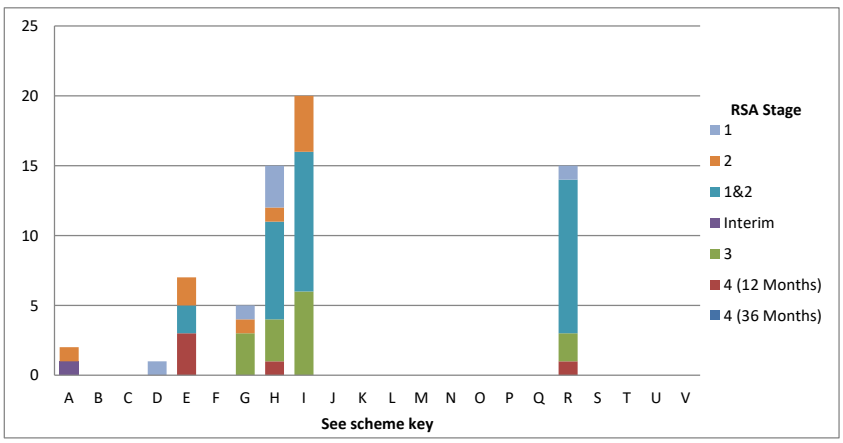
RSAs by Highways England area - This quarter



RSAs By scale of scheme - This quarter



RSAs by scheme type - This quarter



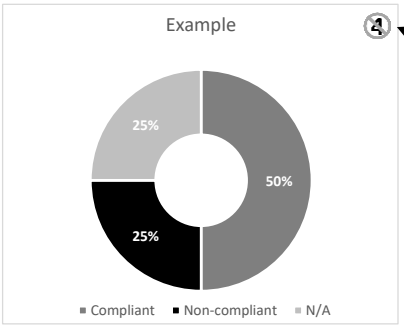
Scheme Key

All-Lanes-Running / Smart Motorways	A
Bridge	B
Bus Lane / Guided Bus	C
Conversion from Single to Dual Carriageway	D
Drainage	E
Enforcement Infrastructure / Cameras	F
Junction Improvement	G
Link Improvement	H
Maintenance Infrastructure / Access / Safety	I
Traffic Signals (New)	J
WCHR Crossing	K
WCHR Path / Way / Route	L
Public Realm / Urban Regeneration	M
Public Transport Interchange / Hub	N
Road / Access Closure or Feature / Facility Removal	O
Shared-Use (WCHRs & Traffic)	P
Shared-Use (WCHRs Only)	Q
Signs / Markings	R
Temporary Traffic Management	S
Tram or LRT Route / Facility	T
Tunnel	U
Widening	V

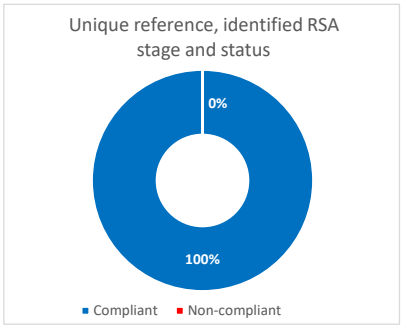
Road Safety Audit Database

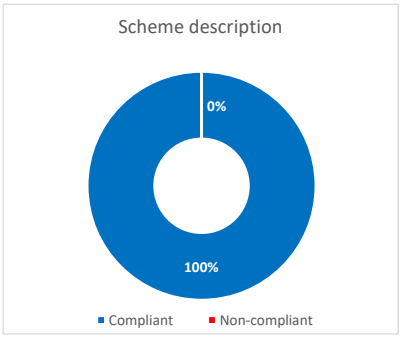
Quarterly Factsheet - 1st July 2019 - 30th September 2019 (Rev. 1)

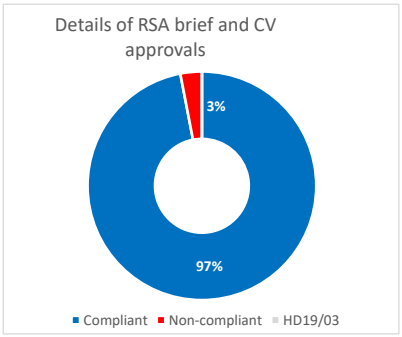
RSAs by compliances - This quarter - Refers to all RSA stages unless indicated (see key)

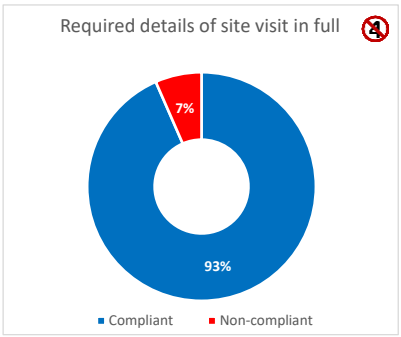


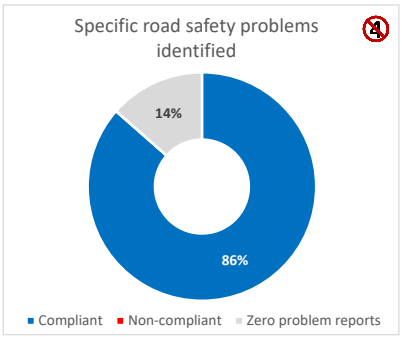
Charts marked by this symbol exclude data for stage 4 RSAs as those compliances are not directly comparable

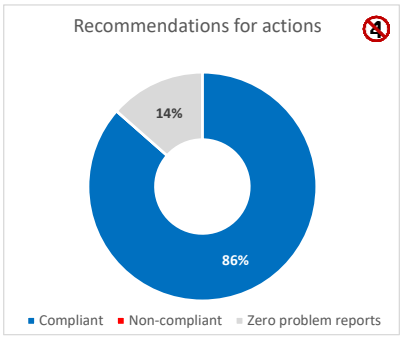


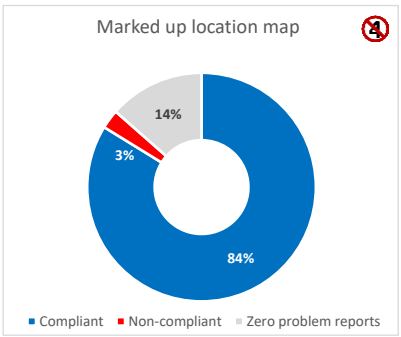


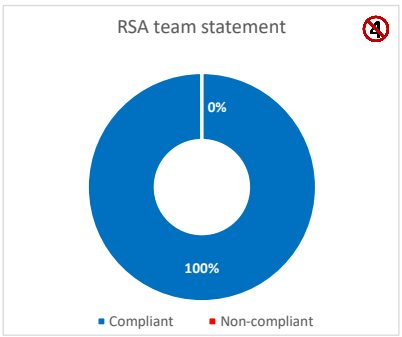


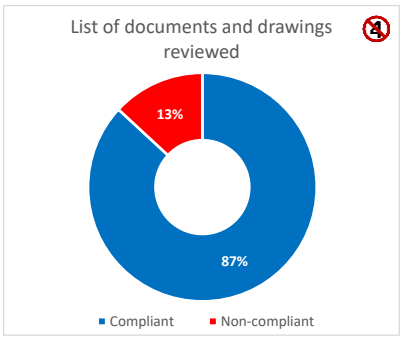


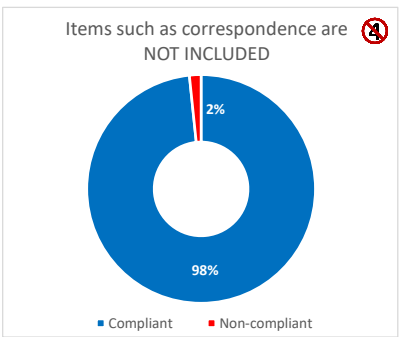


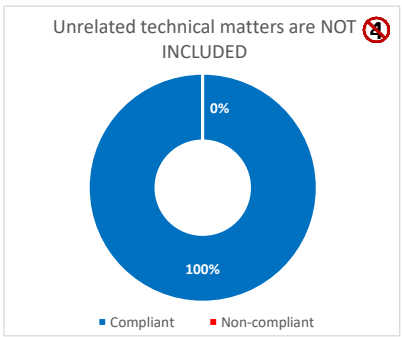


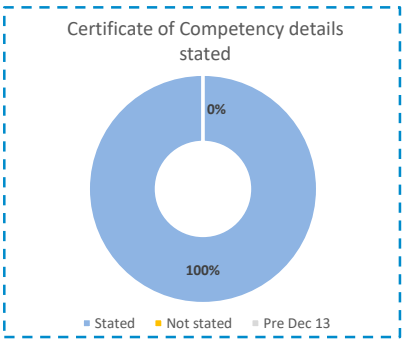












Inclusion of Certificate of Competancy details is not mandatory