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GG 104 safety risk assessment

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Quality control

Document history

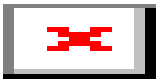
Revision	Purpose description	Originated	Reviewed	Authorised	Date

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Introduction/ Executive summary

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A. How to use this template [delete this page once documented]

The steps outlined below should be used to prompt the outputs required to complete your safety risk assessment (SRA), completing the sections in **red** text. Please see the GG 104 framework, A step by step guide to using GG 104 and directorate specific documents/ templates to support the completion of your safety risk assessment, available via our [online resources](#).

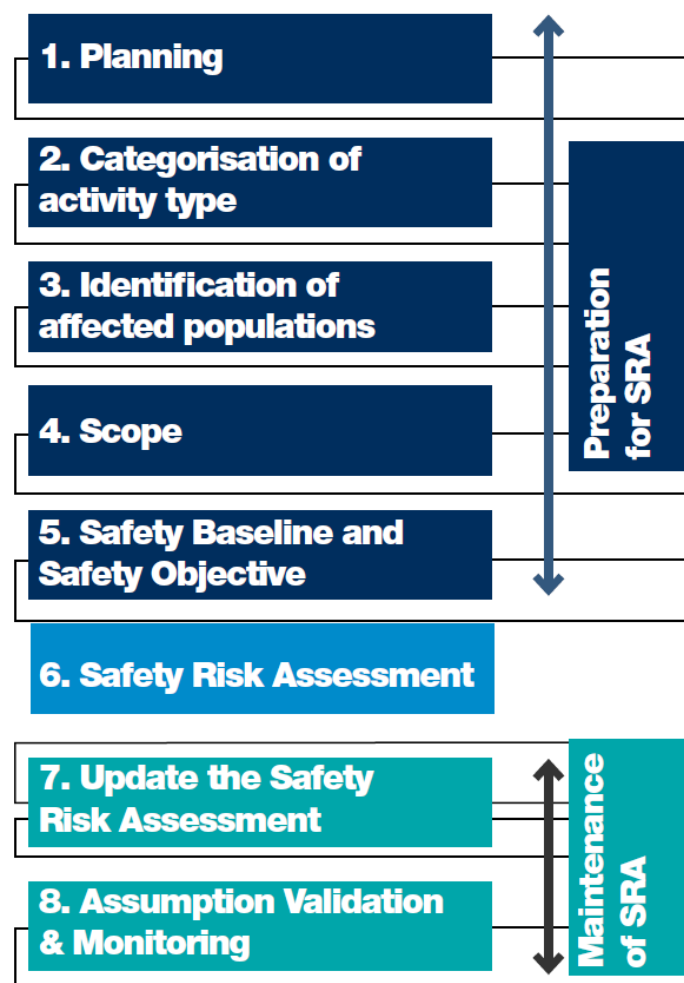
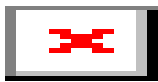


Figure 1 - The 8 principle steps of SRA in GG104

Note that the GG 104 framework is scalable, and the level of SRA detail will vary dependent on the activity being assessed. The framework shall also be used to document where a safety risk is not present, through completion of the planning stages.

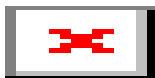


1. Planning

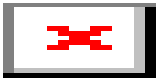
- Introduction and context for the proposed project/activity.
- A question that clarifies the purpose and what is trying to be achieved in applying the SRA process. E.g. “How does the introduction of XX on the MX change the existing safety risk to affected populations, and is it tolerable?”
- Document who is managing/has managed the application of the SRA process and who the activity owner is.
- What options may be available, including doing nothing?

2. Categorisation of activity type

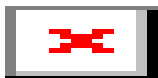
- Provide an A, B or C selection for each feature using Table 2.6 from GG104 (below).
- Include a commentary in the final column to justify why each feature selection is appropriate.
- Include a statement of the overall outcome of the categorisation (below) based on Table 2.7N in GG104, including any additional rigour that will be applied to features that have a higher categorisation, where applicable.
- Include a commitment to convene an SCRG for a Type B or C overall outcome and also to escalate the activity to the NSCRG for an overall Type C outcome.



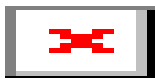
Ref	Feature	Selection criteria		A/B/C selection and justification
		Type	Indicator (highlight selection)	
1	Extent of prior experience of activity. The degree of knowledge available from undertaking the activity previously or the degree to which knowledge is available from the activity being undertaken by other industries or organisations.	A	Activities for which there is significant experience within National Highways. Previous safety studies and data are available, and some activity features are codified in a standard or formal procedure.	Complete this column...
		B	Activities for which there is limited experience within National Highways but there is transferable experience elsewhere in the UK or internationally. Activities for which there is limited experience in National Highways but there is experience elsewhere in the UK or internationally, including in different industries, which is deemed sufficiently similar to the activity in question to be deemed relevant. Activities for which there is experience within National Highways but that experience is in a different application of the activity and some adaptation will be required. There might also be local and site specific issues to take into account that can affect the relevance of the available experience.	
		C	Activities for which there is no previous applicable experience from either National Highways or other industries.	



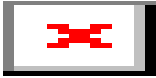
2	Statutory and formal processes and procedures (including standards and legislation). Consideration of the applicability of current standards, formal processes or procedures, guidance and legislation.	A	The activity is substantially or entirely within the scope of existing standards, guidance, formal processes or procedures and applicable legislation. The activity requires minimal or no safety related departures from standard or safety related changes to formal processes or procedures (including any legislation). The nature and type of a departure is the most important element in determining the categorisation and so a single safety departure may change this.	
		B	The activity is largely within the scope of existing standards, guidance, formal processes or procedures. There can be some safety related departures from standards needed and/or safety related changes to formal processes or procedures. The activity can need minor changes to existing legislation. Whilst the number of safety departures from standards, formal processes or procedures can affect the categorisation, the most important element in determining this is the nature and type of the departures.	
		C	Activities that are not within the scope of existing standards, formal processes or procedures and require new ones to be developed. Activities for which significant departures from standards, formal processes or procedures are required. Activities which require significant changes to existing legislation or new legislation to be written. Whilst the number of safety departures from standards, formal processes or procedures can affect the categorisation, the most important element in determining this is the nature and type of the departures. For example, a large number of safety departures that can be addressed straightforwardly will have less impact on feature type than a single safety departure that cannot and requires a detailed risk assessment to support it.	



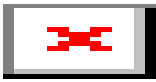
3	Impact on the organisation. The effect that the activity will have on current National Highways processes, procedures, structure, roles and responsibilities, competencies, policies and strategy, in addition to contractual and workforce arrangements.	A	The activity has no impact on National Highways. The activity has a minor impact on any of these for a finite period of time. Length of time National Highways is affected by decision to undertake the activity is short term.	
		B	The activity can lead to permanent minor changes to any of these. These minor changes can introduce new roles and responsibilities, policies, contractual and workforce arrangements. The activity can require a change to organisational arrangements. Length of time National Highways is affected by decision to undertake the activity is medium term.	
		C	The activity has significant impact on any of these. The activity can change core safety roles and responsibilities. Length of time National Highways is affected by decision to undertake the activity is long term.	
4	Activity scale. Consideration of the size and/or scale of the activity. Does or can the activity have an impact on the motorway and all-purpose trunk roads, either directly or indirectly.	A	The impact of the activity is limited in nature or scale.	
		B	The impact of the activity is significant in nature or scale.	
		C	The impact of the activity is wide ranging across the network, and/or significantly impacts infrastructure, interventions or workforce.	



5	Technical. Measure of technical and/or technological novelty and/or innovation the activity involves.	A	An activity where any processes, techniques, methodologies and/or technologies involved are currently in widespread use and re-examination is unlikely to be needed.	
		B	There can be some experience of the processes, techniques, methodologies and/or technologies. The experience can be from use in either another application, or by another road authority, supplier, industry or perhaps from overseas in which case some additional work can be required to adapt them and/or to demonstrate that safety can be assured for the intended application.	
		C	Activities that use new processes, techniques, methodologies and/or technologies for which there is no previous experience in the UK or elsewhere.	
6	Stakeholder impact and interest. The quantity and/or impact of stakeholders, their interest in terms of safety risk and resulting ability to influence or/impact on the activity. The degree to which the safety issues, as perceived, are capable of being understood and fully addressed.	A	Activities for which the quantity and/or impact of stakeholders, their interest in terms of safety risk and resulting ability to influence or impact the activity is low.	
		B	Activities that have only a single or a few stakeholders but their impact, in terms of their attitude towards, or ability to influence, and/or interest in the successful achievement of the activities aim in terms of safety risk can be significant. Alternatively, it will represent an activity that has several stakeholders but the amount, or type, of safety issues involved are limited.	
		C	Activities for which there are a large number of stakeholders and their impact in terms of their attitude towards, or ability to influence safety can be significant. Stakeholders with a strong interest in the potential safety impact of the activity on themselves. Activities where there are conflicting needs arising from different stakeholders or stakeholder groups.	



Overall Categorisation	A/B/C selection and justification
	Complete to confirm overall categorisation of the activity, justification for this, and advise of any individual features that have a higher categorisation that will require additional rigour to be applied, explaining how this will be undertaken. E.g. a comms plan where a lot of stakeholders are identified.



3. Identification of affected populations

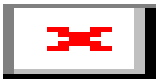
- Document the populations considered affected (below) with a yes/no response.
- Add in any identified sub-division of the population. E.g. Traffic officers and highways inspectors are worker sub-populations.
- Where a population is identified as not being affected, document that 'This population will not be further assessed past this point in the document.'

Identification of affected populations (Use GG104 Table 1.3 to identify affected groups)

Group:	Describe group and how decision affects them. Mention any specific risk groups (i.e. motorcyclists):	Affected? [Complete this column]
Workers	Add any further relevant text within this column. People directly employed by and in a contractual relationship with National Highways.	Yes/No
Users	All road users, including the emergency services, walkers, cyclists, horse riders, and those at work, but who are not in a contractual relationship with National Highways.	Yes/No
Other parties	Any persons who could be affected by the National Highways network, but who are neither using it, nor working on it.	Yes/No

4. Scope

- A clear statement of the scope of the SRA - what is included and what is not included. E.g. national/ regional/ local, timeframes, trial/ permanent, carriageway extents.
- A list of assumptions that have helped shape the outcome. E.g. any departures from standard.
- The justification for any assumptions and explanation of why they are considered appropriate and applicable.
- A plan/map of the physical scope of the assessment if appropriate.



5. Safety baselines and safety objectives

Using the best available, most recent data, please document:

- Safety baseline parameters such as road user fatal and weighted injuries (FWI) that can be measured in both the 'before' and 'after' scenarios.
- Safety objectives for each affected population identified in Step 3.
- Analysis of recent safety data to evidence the selection of the baseline parameters and safety objectives.

Example tabulated approach:

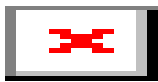
Population	Safety baselines		Safety objectives	
	Data source/location	Data parameter 1	Data parameter 2 ¹	
Users	The existing situation over [3 years], prior to start of works (construction).	The average annual number of Fatal and Weighted Injury (FWI)* casualties. [Insert data]	The rate of FWIs per billion vehicle miles per annum. [Insert data]	That for a period of [3 years] after becoming fully operational metrics are better compared to the baseline.
Workers	N/A	N/A	N/A	SFAIRP
Other parties	N/A	N/A	N/A	SFAIRP

There won't always be data or proxy data susceptible to change from your project/activity, and then a non-numerical commitment to managing safety risk so far as is reasonably practicable (SFAIRP) will typically be sufficient for all populations.

6. Safety risk assessment

Note that much of the documentation for Step 6 can be recorded in tabular format, using example tables from GG104, and as such it may be appended to the main SRA document. The tables below give example values for likelihood and severity of

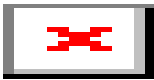
¹ Where data is unavailable, additional sources and time periods may need to be used as appropriate. Parameters will need to be considered on a project basis.



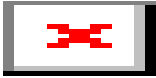
outcomes, which should be adapted to reflect activity needs and scaled appropriately to enable distinction between the scoring of hazards with different values. Qualitative values may provide a preferable scoring methodology, as outlined in the 'Step by Step Guide to Safety Risk Assessment'.



- A list of the reasonably foreseeable hazards to each affected population.
- A list of reasonably foreseeable safety risks associated with the hazards.
- A list of confirmed safety risk treatments (control measures / mitigations).
- A list of any additional/potential safety risk treatments.
- A summary of the expected change in safety risk for each affected population.
- A written evaluation that provides evidence as to whether the safety objectives can be met for each affected population.



Likelihood (L) x Severity (S) = Risk value (R)		Severity (S)				
		Minor harm; Minor damage or loss no injury	Moderate harm; Slight injury or illness, moderate damage or loss	Serious harm; Serious injury or ill- ness, substantial damage or loss	Major harm; Fatal injury, major damage or loss	Extreme harm; Multiple fatalities, extreme loss or damage
Likelihood (L)	Very unlikely; Highly improbable, not known to occur	1	2	3	4	5
	Unlikely; Less than 1 per 10 years	2	4	6	8	10
	May happen; Once every 5-10 years	3	6	9	12	15
	Likely; Once every 1- 4 years	4	8	12	16	20
	Almost certain; Once a year or more	5	10	15	20	25
Risk Value (R)		Required action				
Low (1-9)		Ensure assumed control measures are maintained and reviewed as necessary.				
Medium (10-19)		Additional control measures needed to reduce risk rating to a level which is equivalent to a test of "reasonably required" for the population concerned.				
High (20-25)		Activity not permitted. Hazard to be avoided or risk to be reduced to tolerable.				



Ref	Hazard and Risk description What is the hazard and what risk(s) does it present? How – does this have potential to cause harm, loss or failure?	Population(s) Affected	Likelihood	Severity	Risk	Response/Treatments/Control measures	Likelihood	Severity	Risk	Details/Assumptions/ Monitoring requirements
1										
2										
3										
4										
5										
6										
7										
8										
...										

7. Update the safety risk assessment

[Document wording similar to:]

Should there be any significant changes to the project design, optioneering, safety risk analysis or assumptions made within this safety risk assessment, it will be updated to consider and control any new safety risks. Significant changes include, but are not limited to:

- Significant assumptions in the assessment.
- Milestones in the activity development, such as trial development.
- A change to a/an additional safety control measure/treatment.
- New information emerging as a result of monitoring of the activity (see step 8).
- Business area specific procedures, such as document control.

Identify any assumptions, timescales/milestones or Business specific procedures relevant to this activity.

8. Assumption validation and monitoring

- A list of aspects such as key safety challenges/high risks, that justify specific monitoring.
- An explanation of how the safety objectives will be evaluated.
- An explanation of how the assumptions will be evaluated to assure they were correct/ require review.
- A plan, or reference to other processes, for the monitoring proposed.

Document either 1 or 2:

1. The safety risk assessment will be monitored and updated throughout the lifecycle of the project by [insert team] and the Project [Sponsor/Director] shall be accountable for this monitoring of the scheme, typically being BAU activities. At a minimum this will be on a [timeframe] basis with relevant project stakeholders.

2. If bespoke/ more complex monitoring and validation is required, such as for a trial, please include what this is. The monitoring requirements table below is an example, with example content, and can be replaced by one that is more relevant to the project being assessed, or not used if BAU monitoring is deemed sufficient.

Ref	Monitoring requirement	Parameters	Monitoring method(s)
1	Road traffic collisions (RTCs)	• High level analysis of the number of injury RTCs since scheme opening (as reported in ControlWorks). • Initial analysis of causes of injury RTCs. • Compare injury RTCs to safety baseline. • Report non-injury RTCs (no comparison as no reliable before figure). • Assessment of RTC (location and severity).	ROC ControlWorks logs / Traffic officer liaison meetings / Stakeholder liaison (if no ControlWorks logs)
2	Maintenance access, roadworks and resources	• Feedback on the use of maintenance access such as: - Off network access (inc. fixed access gantries) - Temporary traffic management (TTM) • Number of incidents during TTM including: - Incidents during deployment and removal - Vehicle breaches into roadworks - Technology / power failure • Severity (consequence) of incidents and near misses	MSP performance feedback
3	Impact of weather conditions	• Assess if the winter maintenance procedure is performing as expected (note: this will be particularly relevant to snow ploughing activities) • Record any instances of flooding and its impact, quantitative information will be used if available.	ROC ControlWorks logs / Traffic officer liaison meetings / MSP performance feedback
4	Junction operation	• Review of junction operation / layout: - Identification of congestion seed points and compare to baseline - Assessment of driver behaviour at junction locations • Consideration of impact of any emergency areas / laybys on diverges	Drive through survey / CCTV monitoring / HALOGEN, TCD, TRIS and traffic plots / Traffic officer liaison meetings
5	Operational performance	• Overall performance of scheme - Does traffic flow smoothly through the scheme - Any impact from technology failures or operational issues	Drive through survey / HALOGEN, TCD, TRIS and traffic

		• Flow of traffic through all lanes by considering lane utilisation and traffic flow	plots / Traffic officer liaison meetings / Stakeholder liaison
6			
7			
8			
Etc.			

9. Appendices [as applicable]