4 Overview of Assessment Process

4.1 Introduction

4.1.1 This chapter outlines the general approach followed for the Environmental Impact Assessment (EIA) of the proposed scheme, prepared in accordance with the Design Manual for Roads and Bridges (DMRB) and other relevant guidance. More detailed methodologies are provided in the respective technical chapters.

4.1.2 The aims of the EIA for the proposed scheme are to:

- gather information about the environment of the study areas provided in the respective technical chapters;
- identify environmental constraints and opportunities associated with the area which may influence, or be affected by the proposed scheme;
- identify and assess the likely significant environmental impacts (direct and indirect) on population, human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage, and landscape; and
- identify and incorporate into proposed scheme design and operation, features and measures to avoid, reduce or offset significant adverse impacts, or in some cases to enhance beneficial impacts.

4.1.3 This chapter is supported by the following figures and appendices which are referenced where appropriate:

- Figure 3.1 (The Proposed Scheme);
- Appendix A1.1 (Record of Determination (RoD));
- Appendix A1.2 (Notice of Determination; and
- Appendix A5.1 (Summary of Consultation Responses).

4.2 Environmental Assessment

Trunk Road Environmental Impact Assessment (EIA)

4.2.1 The term 'trunk road' in Scotland refers to the strategic system of major roads and associated structures (including bridges), for which the Scottish Ministers have responsibility. As the Kincardine Bridge is a structure associated with the A985 Kincardine – Rosyth Trunk Road (A985), the proposed scheme would form part of the trunk road network.

4.2.2 In Scotland there are a number of EIA regulations that implement the requirements of Directive 2011/92/EU as amended by Directive 2014/52/EU (hereafter referred to as the EIA Directive). The Roads (Scotland) Act 1984 as amended by the Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as the Roads EIA Regulations) applies to the EIA of trunk road improvement and maintenance projects in Scotland. Further details of the statutory context for EIA are provided in Chapter 1 (Introduction).

Design Manual for Roads and Bridges (DMRB)

4.2.3 The DMRB sets out governmental guidance on the development of trunk road schemes and is applicable to the environmental assessment of the proposed scheme. The DMRB was introduced in 1992 and has undergone several updates since its introduction, including updates in 2019 and 2020. Cognisance of the 'new' DMRB guidance has been taken for the purposes of this EIA Report. The DMRB specifically provides guidance on EIA, including reporting and monitoring of significant environmental effects. The

DMRB documents listed in Table 4.1 ((Highways England, Transport Scotland, Welsh Government, and Department for Infrastructure Northern Ireland 2018; 2019a-i; 2020a-j) are of particular relevance to the environmental assessments in this EIA Report.

Table 4.1: DMRB Guidance Standards Relevant to the EIA for the Proposed Scheme

DMRB Document Reference	Title
GG 101	Introduction to the Design Manual for Roads and Bridges
GG 103	Introduction and general requirements for sustainable development and design
LA 101	Introduction to environmental assessment
LA 102	Screening projects for Environmental Impact Assessment
LA 103	Scoping projects for environmental assessment
LA 104	Environmental assessment and monitoring
LA 105	Air quality
LA 106	Cultural heritage assessment
LA 107	Landscape and visual effects
LA 108	Biodiversity
LA 109	Geology and Soils
LA 110	Material assets and waste
LA 111	Noise and vibration
LA 112	Population and human health
LA 113	Road drainage and the water environment
LA 114	Climate
LA 115	Habitats Regulations assessment
LA 116	Cultural heritage asset management plans
LA 120	Environmental management plans
LD 117	Landscape design
LD 119	Roadside environmental mitigation and enhancement
LD 118	Biodiversity design

4.2.4 Since July 2019 the new DMRB guidance that has been published has aligned the environmental assessment process more closely with the Roads EIA Regulations. A review of the published guidance documents for environmental assessment listed in Table 4.1 has been undertaken. Table 4.3 provides the results of this guidance review and explains which of the new DMRB environmental topics specific guidance documents have been adopted for the environmental parameters in the EIA Report.

4.2.5 The assessments in this EIA Report have also taken account relevant guidance in respect of particular environmental topics/factors, published by a range of other public and professional organisations. Any modifications to the standard approach to the assessment are highlighted within the individual topic sections of the relevant chapters in this EIA Report.

Screening and Scoping Process

4.2.6 The screening process was undertaken taking into account the provisions of the Roads EIA Regulations and confirmed and recorded the requirement for an EIA for the proposed scheme. The Record of Determination (RoD) which formally records the screening process is provided in Appendix A1.1 (Record of Determination). The Notice of Determination which was published in accordance with the Roads EIA Regulations is provided in Appendix A1.2 (Notice of Determination).

4.2.7 The scoping assessment approach was captured in the A985 Kincardine Bridge Refurbishment: Piled Viaduct Replacement Scoping Report (Jacobs 2018) (hereafter referred to as the Scoping Report). The Scoping Report was informed by the approach outlined in best practice guidance for environmental assessment represented by the version of DMRB Volume 11 'Environmental Assessment' applicable in July 2018 and relevant DMRB Interim Advice Notes (IAN), such as IAN 125/15 (Highways England, Transport Scotland, Welsh Assembly Government and the Department for Regional Development Northern Ireland 2015).

4.2.8 The Scoping Report was issued to consultees in July 2018, with the main objectives to:

- review existing information and reports;
- identify environmental constraints relevant to both the construction or operation of the proposed scheme;
- identify where additional environmental surveys and data gathering were required; and
- determine the approach and method for the environmental assessment.

4.2.9 The following topics were 'scoped out' in the Scoping Report (Jacobs 2018) on the basis that significant environmental effects are not considered likely:

- People and Communities – Community and Private Assets;
- People and Communities – Effects on All Travellers;
- Landscape and Visual Impacts;
- Navigation; and
- Major Accidents and Disasters.

4.2.10 Full details of the scoping exercise including rationale for 'scoping out' the above topics is provided in Chapter 5 (Consultation and Scoping).

4.2.11 The Scoping Report was also used to request the feedback of statutory consultees on the proposed scheme and the approach to the assessment. Their comments were taken into consideration and incorporated into the design and assessment process where appropriate. The responses received are summarised in Appendix A5.1 (Summary of Consultation Responses).

Scope of Environmental Assessment

4.2.12 The Roads EIA Regulations introduced a wider scope of environmental factors to be considered, where relevant, as part of the EIA process. These factors along with how they are considered within the EIA and EIA Report are detailed in Table 4.2.

Table 4.2: Wider Scope of Environmental Assessment – Roads EIA Regulations

Environmental Topic	Comments
Climate	The climate topic is considered in Chapter 15 (Climate).
Major Accidents and Disasters	A major accident in the context of this EIA is an undesirable extreme event resulting in damage or harm, such as a major pollution incident. A disaster is taken to relate to extremes of natural occurrences, such as a major flood event or earthquake. Two aspects should be considered: the vulnerability of the project to a major accident or disaster, and the potential for the project to cause a major accident or disaster. Given the nature and location of the proposed scheme, it is not considered particularly vulnerable to major accidents and disasters. In addition, the potential risk of a major accident or disaster resulting in significant environmental effects on the environment from the proposed scheme is considered unlikely and as such this topic was scoped out of the assessment and is therefore not covered within the EIA Report.

Environmental Topic	Comments
Population and Human Health	Impacts on human health are considered within the following assessment chapters: Chapter 6 (Geology, Soils and Groundwater) - impacts are considered in relation to potential for human ingestion, inhalation, and dermal contact with contaminated soils, soil dust, deep and shallow groundwater and surface water, and migration of ground gases. Chapter 7 (Road Drainage and the Water Environment) - impacts are considered in terms of sources and pathways of potential pollution and flood risk. Chapter 11 (Air Quality) – impacts are considered in terms of vehicle emissions and dust levels generated by the proposed scheme. Chapter 12 (Noise and Vibration) – impacts are considered in terms of noise and vibration levels generated by the proposed scheme. Chapter 15 (Human Health) – impacts are considered in relation to a number of health determinants and the effects the proposed scheme may have on them, based on the above assessment chapters. LA 112 'Population and human health' replaced DMRB Volume 11, Section 3, Part 6 (Land); Volume 11, Section 3, Part 8 (Pedestrians, Cyclists, Equestrians and Community Effects) and Volume 11, Section 3, Part 9 (Vehicle Travellers). In the Scoping Report, the following topics were scoped out of the EIA Report: • People and Communities – Community and Private Assets; and • People and Communities – Effects on All Travellers. The DMRB updates do not change the position that significant effects in relation to these two topics (Community and Private Assets and Effects on All Travellers) are not anticipated to result from the proposed scheme and they are therefore scoped out of the EIA Report.
Heat and Radiation	LA 104 'Environmental assessment and monitoring' states that *'Heat and Radiation is unlikely to be relevant to the scope of most motorway and all-purpose trunk road projects.'* No significant environmental effects are expected in relation to the emission of heat and radiation and as such this topic is not covered further within this EIA Report.

4.2.13 Table 4.3 explains which of the new DMRB environmental topic specific guidance documents have been adopted for the environmental parameters in the EIA Report. In accordance with the DMRB GG 101 'Introduction to Design Manual for Roads and Bridges', confirmation of the proposed approach to adopting the new guidance was sought from the Overseeing Organisation (Transport Scotland).

Table 4.3: Environmental Parameters in Chapters 6 to 16

Chapter	Environmental Parameter/Title	Comments
6	Geology, Soils and Groundwater	Inclusion of this topic takes cognisance of DMRB LA 109 'Geology and soils' and LA 113 'Road drainage and the water environment'.
7	Road Drainage and the Water Environment	Inclusion of this topic takes cognisance of DMRB LA 113 'Road drainage and the water environment'.
8	Marine Ecology	Inclusion of this topic takes cognisance of DMRB Volume 11, Section 3 Part 4 'Ecology and Nature Conservation' and IAN130/10 'Ecology and Nature Conservation: Criteria for Impact Assessment' which was extant at the time of scoping. In line with DMRB GG 101 guidance on implementation of the new DMRB standards, implementation of LA 108, which supersedes the DRMB Volume 11 Ecology and Nature Conservation guidance, was considered. However, due to the majority of the surveys and baseline data to inform the assessment having been completed, the implementation of LA 108 would have incurred significant additional expense and delay and therefore was not taken forward for the proposed scheme in agreement with Transport Scotland.
9	Terrestrial Ecology	Inclusion of this topic takes cognisance of DMRB Volume 11, Section 3 Part 4 'Ecology and Nature Conservation' and IAN130/10 'Ecology and Nature Conservation: Criteria for Impact Assessment' which was extant at the time of scoping. In line with DMRB GG 101 guidance on implementation of the new DMRB standards, implementation of LA 108, which supersedes the DRMB Volume 11

Chapter	Environmental Parameter/Title	Comments
		Ecology and Nature Conservation guidance, was considered. However, due to the majority of the surveys and baseline data to inform the assessment having been completed, the implementation of LA 108 would have incurred significant additional expense and delay and therefore was not taken forward for the proposed scheme in agreement with Transport Scotland.
10	Cultural Heritage	Inclusion of this topic takes cognisance of DMRB Volume 11, Section 3, Part 2, Cultural Heritage (HA208/07) which was extant at the time of scoping. In line with DMRB GG 101, implementation of LA 106, which supersedes HA 208/07, was considered. However, due to the majority of the assessment having been completed, the implementation of LA 106 would have incurred significant expense and delay and was not taken forward for the proposed scheme in agreement with Transport Scotland.
11	Air Quality	Inclusion of this topic takes cognisance of DMRB Volume 11, Section 3, Part 1, HA207/07 'Air Quality' (HA 207/07) which was extant at the time of scoping. In line with DMRB GG 101 guidance on implementation of the new DMRB standards, implementation of LA 105, which supersedes HA 207, was considered. However, due to the majority of the assessment having been completed, the implementation of LA 105 would have incurred significant additional expense and delay and therefore was not taken forward for the proposed scheme in agreement with Transport Scotland.
12	Noise and Vibration	Inclusion of this topic takes cognisance of DMRB Volume 11, Section 3, Part 7, 'Air Quality' (HD 213/11 Rev 1) In line with DMRB GG 101 guidance on implementation of the new DMRB standards, implementation of LA 111, which supersedes HD 213/11 Rev 1, was considered. However, due to the majority of the assessment having been completed, the implementation of LA 111 would have incurred significant additional expense and delay and therefore was not taken forward for the proposed scheme in agreement with Transport Scotland.
13	Material Assets and Waste	Inclusion of this topic takes cognisance of DMRB LA 110 'Materials assets and waste'.
14	Human Heath	Inclusion of this topic takes cognisance of DMRB LA 112 'Population and human health'.
15	Climate	Inclusion of this topic takes cognisance of DMRB LA 114 'Climate'.
16	Assessment of Cumulative Effects	Inclusion of this topic takes cognisance of DMRB LA 104 'Environmental assessment and monitoring'.

4.2.14 Concerning the structure of the assessment, DMRB LA 104 was published in July 2019 and provides guidance on the approach to environmental assessment in line with the requirements of the EIA Directive. DMRB LA 104 supersedes previous DMRB guidance notes HA 205/08, HD 48/08, IAN 125/15 and IAN 133/10. DMRB LA 104 sets out the requirements for environmental assessment for projects, including reporting and monitoring of significant adverse effects.

4.2.15 Details of the scope of assessment within these environmental parameters are provided within each EIA Report chapter.

4.2.16 Consistent with DMRB LA 104, consideration of relevant policies and plans will be undertaken within technical chapters with a detailed assessment provided in Appendix A4.1 (Assessment of Policy Compliance).

Study Area

4.2.17 The study area required or recommended by DMRB and best practice guidance varies depending on the environmental parameter being assessed. The study area is therefore defined separately, where relevant, within each assessment chapter according to topic guidance, the geographic scope of potential impacts or the geographic scope of the information required to assess those impacts and the associated likely significant impacts.

4.3 Consultation

4.3.1 Consultation has been undertaken throughout the EIA process in line with requirements in the Roads EIA Regulations. Details on the consultation process are provided in Chapter 5 (Consultation and Scoping).

4.4 Environmental Reporting

Chapter Structure

4.4.1 Chapters 6 to 15, as listed in Table 4.3, provide the following:

- an introduction to the subject area;
- approach and methods used in the assessment;
- uncertainties and limitations to the assessment;
- baseline conditions (i.e. the existing situation);
- potential impacts of the proposed scheme;
- mitigation for the proposed scheme;
- residual impacts of the proposed scheme (taking account of proposed mitigation);
- monitoring for the proposed scheme; and
- references.

4.4.2 Chapter 16 (Assessment of Cumulative Effects) has a slightly modified structure appropriate to the topic area. Chapter 17 (Schedule of Environmental Commitments) and Chapter 18 (Summary of Significant Residual Impacts) are presented in tabular format as they provide a summary of the key information provided in the technical EIA Report chapters.

General Approach

Baseline Conditions

4.4.3 This EIA Report considers likely impacts of the proposed scheme on each environmental parameter in comparison to baseline conditions, which were identified though field surveys, desk-based studies and consultation with relevant stakeholders.

4.4.4 The baseline describes the environmental conditions in the absence of the proposed scheme at both the time of the assessment (e.g. at point of desk study / site surveys / consultation) and, where appropriate, the future changes to this baseline. As outlined in DMRB LA 104, '*a description should be provided of the likely evolution of the current state of the environment without implementation of the project, i.e. 'future baseline scenario', with reasonable effort on the basis of the availability of environmental information and scientific knowledge.'*

4.4.5 Therefore, the changes to the future baseline are incorporated into the assessment where those changes are supported by sufficient information to inform an appropriate assessment and have a degree of certainty (e.g. the proposed scheme is entirely dependent on the future changes to the baseline, or the development has planning permission and is currently under construction). The combination of the current and future baseline, as defined here, establishes the relevant environmental receptors and existing land use in the study area for the assessment chapters. Where alternative approaches to future baseline were considered more appropriate due to the requirements of the specific technical assessments, these are described and justified within each technical chapter.

Potential Impacts

4.4.6 Potential impacts are assessed having already taken into account the embedded mitigation measures outlined in Chapter 3 (The Proposed Scheme), but before essential mitigation measures are applied, as described in paragraph 4.4.15.

4.4.7 The general approach to assessment is based on the determination of the significant of an impact from a combination of the sensitivity or importance of the baseline conditions (i.e. the site and its environs, including the sensitivity of receptors) and the magnitude of the impact on the baseline.

4.4.8 The assessment involves three steps: assignment of value (sensitivity), characterisation of magnitude of impact and assigning significance of effects.

4.4.9 The Roads EIA Regulations require consideration of the 'likely significant effects' but do not provide a definition of what constitutes a significant effect as this is determined according to the environmental parameter under consideration.

4.4.10 This process to determine significance for each environmental parameter assessment varies and is described in the respective environmental chapters; where alternative approaches were considered these are described and justified (e.g. consideration of ecological impacts in accordance with Institute of Ecology and Environmental Management (IEEM) guidance in Chapter 8 (Marine Ecology), and Chapter 9 (Terrestrial Ecology)). This approach is consistent with DMRB LA 104 which notes that, where relevant, individual environmental factors can set out variations to the methodology set out in DMRB LA 104 for description requirements for value of receptors, magnitude of impact, and significance of effects.

4.4.11 The magnitude and significance reported within the 'Potential Impacts' section of each chapter are on the basis of no mitigation beyond what is embedded in the proposed scheme design.

4.4.12 The nature of impacts may vary and may be direct or indirect, secondary, short-term, medium-term or long-term, permanent or temporary and positive or adverse. These types of impacts have all been considered.

4.4.13 Chapters 6 to 16 describe and assess the envisaged impacts of the proposed scheme.

Potential Mitigation

4.4.14 DMRB LA 104 presents mitigation as a hierarchy of measures as shown in Table 4.4.

Table 4.4: Mitigation Hierarchy (from DMRB LA 104)

Level of Mitigation	Definition
Avoidance and Prevention	Design and mitigation measures to prevent the effect (e.g. alternative design options or avoidance of environmentally sensitive sites).
Reduction	Where avoidance is not possible, then mitigation is used to lessen the magnitude or significance of effects.
Remediation	Where it is not possible to avoid or reduce a significant adverse effect, these are measures to offset the effect.

4.4.15 Mitigation takes into account best practice, legislation, guidance and professional experience. Where possible and reasonably practicable, potential adverse environmental impacts of the proposed scheme have been embedded in the design, rather than relying on measures to mitigate the impacts. These measures are reflected in the proposed scheme as described in Chapter 3 (The Proposed Scheme) and as such they are considered integral to the proposed scheme when assessing potential impacts. These measures are referred to as 'embedded mitigation' within a number of the EIA Report chapters. All other mitigation measures described in the chapters are 'essential mitigation', i.e. critical for the delivery of the

proposed scheme, as defined in DMRB LA 104 and required to avoid and/or reduce significant environmental effects.

4.4.16 Mitigation commitments have been developed for each environmental topic outlined in each environmental chapter (Chapter 6 to Chapter 15). Mitigation commitments from each chapter are collated in Chapter 17 (Schedule of Environmental Commitments). Each measure is numbered with a 'Mitigation Item number', which also indicates the environmental discipline proposing the measure e.g. **TE1** is the first mitigation item in Chapter 9 (Terrestrial Ecology).

4.4.17 There are a number of standard mitigation measures that would be applicable across a number of environmental topics. These are detailed in Table 4.5.

Table 4.5: Standard Mitigation

Mitigation Item	Party Responsible for Implementation	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required	Monitoring / Compliance
SM1	Contractor	Pre-Construction Construction	A Construction Environment Management Plan (CEMP) will be developed in accordance with DMRB LA 120 'Environmental management plans' by the Contractor to provide a framework for the implementation of construction activities, setting out how the Contractor intends to operate the construction site, including construction related mitigation measures identified in Tables 17.2 to 17.12. The relevant sections of the CEMP will be in place prior to the start of construction work and the CEMP will continue to be developed throughout the construction process to avoid, reduce or mitigate construction impacts on the environment and the surrounding community. The CEMP will include but not be limited to, subsidiary plans relation to: geology and land contamination, surface water and groundwater (including a Flood and Tidal Response Plan); ecology (Ecological Management Plan which will include specific Species Protection Plans and a Saltmarsh Management Plan), cultural heritage, air quality (e.g. dust), noise and vibration, and landscape (Site Restoration Plan).	To provide a framework for the implementation of construction activities in accordance with the environmental commitments and mitigation measures in the EIA Report.	Consultation with the relevant local authorities, other statutory bodies and regulatory authorities (Refer to Tables 17.2 to 17.12).	Employer's Requirements in the Contract.
SM2	Contractor	Pre-construction Construction	Prior to construction, a team of suitably qualified Environmental Clerk of Works (EnvCoW) (i.e professionally qualified in a relevant environmental discipline) will be appointed by the Contractor. The EnvCoW(s) will be present on site, as required, during the construction period to monitor the implementation of the mitigation measures identified and ensure that activities are carried out in such a manner to prevent or reduce impacts on the environment.	To monitor the implementation of mitigation measures identified and ensure that activities are carried out in such a manner to prevent or reduce impacts on the environment.	Approval by Transport Scotland.	Employer's Requirements in the Contract.
SM3	Contractor	Pre-construction Construction	Throughout the construction period the contractor will, as required, contribute towards the overall communications strategy for the proposed scheme to ensure that consultees and members of the public are kept informed on the progress of the proposed scheme and to efficiently address any queries or concerns raised.	To ensure that consultees and members of the public are kept informed on the progress of the proposed scheme and to efficiently	Approval by Transport Scotland.	Employer's Requirements in Contract.

Mitigation Item	Party Responsible for Implementation	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required	Monitoring / Compliance
			As part of this the Contractor will appoint a Community Liaison Officer who will: • Liaise with the relevant local authorities; other statutory bodies and regulatory authorities; relevant community groups; and businesses and residents in local communities affected by the construction works; • Notify occupiers of nearby properties of the nature and anticipated duration of planned construction works that may affect them; • Support the production of project communications; • Establish a dedicated freephone telephone helpline together with a dedicated email address and postal address for enquiries and complaints during the construction phase. The relevant contact numbers, email and postal addresses will as a minimum be displayed on signs around the construction site and will be published on the project website. Enquiries and complaints will be logged in a register and appropriate action will be taken in response to any complaints.	address any queries or concerns raised.		
SM4	Contractor	Pre-construction & Construction	The Contractor will ensure that all site workers receive adequate training relevant to their role prior to working on the construction site, including specific environmental project inductions and 'toolbox talks' as required.	To ensure site workers are aware of best practice construction methods, mitigation measures how they are implemented.	None required.	N/A
SM5	Contractor	Pre-construction	Design changes will be subject to environmental review to ensure that: • there are no new residual significant adverse effects; and/or • the significance levels of residual significant effects are not greater than those reported in this EIA Report. If environmental review found that any future changes to the design resulted in either of the above, an addendum to the EIA Report, or a new EIA Report, would need to be published for public consultation and comment in order to comply with the Roads EIA Regulations. As these Regulations require the consideration and	To ensure that the Contractor's design is implemented in compliance with the Roads EIA Regulations.	Approval by Transport Scotland.	Employer's Requirements in Contract.

Mitigation Item	Party Responsible for Implementation	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required	Monitoring / Compliance
			reporting of significant effects prior to consent decisions from the Scottish Ministers.			
SM6	Contractor	Construction	Construction work would take place within the limit of the land made available (LMA) to the appointed Contractor as defined within the contract documents. The appointed Contractor may wish to utilise other areas of land outwith the LMA. In such an instance, the appointed Contractor would have to secure the use of these areas by agreement and through separate planning applications or other consents, where appropriate.	To ensure that the construction of the proposed scheme is undertaken within the land made available to the Contractor.	Landowner and relevant stakeholder approval (if required).	Employer's Requirements in Contract.

4.4.18 Mitigation commitments were reported in the Scoping Report to mitigate any non-significant impacts of the People and Communities – Community and Private Assets, People and Communities – Effects on All Travellers, and the Landscape and Visual topics. Mitigation measures in relation to these topics are reported in Table 17.12 of Chapter 17 (Schedule of Environmental Commitments) of this EIA Report.

4.4.19 Table 17.11 of Chapter 17 (Schedule of Environmental Commitments) contains environmental commitments which have been raised by consultees during the scoping exercise and which do not form part of the mitigation measures specific to the environmental topics reported in this EIA Report.

4.4.20 Where complete prevention of potential impacts was not feasible within the individual assessments, measures have been proposed which aim to reduce potentially significant effects through abatement measures either at source, at the site, or at the receptor. The level at which effects are considered 'significant' depends on the environmental parameter being assessed, but generally potential effects defined with a 'Moderate' or greater level of significance would be identified as priorities for mitigation. Each environmental topic chapter (Chapter 6 to Chapter 16) details the methodology used to determine significance of effects.

4.4.21 Where adverse impacts cannot be prevented or reduced, consideration has been given to the specification of measures to be included in the Contract Documents that offset or, in certain circumstances, compensate for any damage. Mitigation measures as stipulated in the EIA Report are essential for the delivery of the proposed scheme and will form contractual requirements on the Contractor (or Transport Scotland where applicable).

4.4.22 The mitigation measures identified throughout this EIA Report are summarised in Chapter 17 (Schedule of Environmental Commitments).

Residual Effects

4.4.23 The residual effects section within the chapters report the anticipated significance of impacts remaining following application of the essential mitigation identified in the EIA Report.

Monitoring

4.4.24 Where relevant, each chapter provides details of monitoring required to ensure implementation of mitigation measures and provide data on the effectiveness of mitigation measures.

Cumulative Effects

4.4.25 Chapter 16 (Assessment of Cumulative Effects) considers the potential for significant cumulative effects, which are the combined impacts of the proposed scheme on a particular resource or receptor, or the impacts that result from the incremental impact of the proposed scheme when added to other 'reasonably foreseeable' developments.

Summary of Impacts and Mitigation

4.4.26 Chapter 17 (Schedule of Environmental Commitments) provides a summary of potential impacts and proposed mitigation, as well as any monitoring requirements and other environmental commitments. Chapter 18 (Summary of Significant Residual Effects) provides a summary of those impacts still considered significant after successful implementation of any proposed mitigation.

References

4.4.27 Relevant reference sources are included at the end of each individual topic chapter.

Uncertainty

4.4.28 As outlined in DMRB LA 104, EIA undertaken in accordance with the EIA Directive must include:

'1) a description of the main difficulties encountered in compiling the required information; and

2) the main uncertainties involved in the forecasting methods or evidence.'

4.4.29 Where relevant, each topic chapter reports on difficulties encountered and the main uncertainties associated with the respective assessments under 'Limitations to the Assessment'. This addresses the availability and validity of the baseline data, as well as the passage of time on the validity of data.

4.4.30 Further details on uncertainty regarding future changes, such as project design, are described in paragraphs 4.4.31 to 4.4.32.

Changes to Scheme Design

4.4.31 The assessment of potential impacts and the identification of mitigation measures in the EIA Report are based on the design of the proposed scheme as described in Chapter 3 (The Proposed Scheme). As noted in Chapter 1 (Introduction) and Chapter 3 (the Proposed Scheme), the design of the proposed scheme may be further refined, and the amended design could still be deemed to comply with this EIA Report provided that such refinements are subject to environmental review and that the residual effects are not significantly different to the effects described in the EIA Report, i.e. there are no new residual significant adverse effects and/or the significance levels of residual significant effects are not greater than those reported in this EIA Report. Where a change in design results in mitigation no longer being embedded within the design, this would need to be clearly recorded and assessed in the environmental compliance review. Statutory bodies may also need to be consulted on such changes.

4.4.32 If environmental review found that any future changes to the design as described above did not comply with the residual significance reported in this EIA Report (i.e. if new residual significant adverse effects were introduced and/or the significance levels of residual significant effects were greater than those reported in this EIA Report), an addendum to the EIA Report, or a new EIA Report, would need to be published for public consultation and comment to comply with the Roads EIA Regulations.

4.5 References

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