

3. The EIA Process & Environmental Issues

3.1. Introduction

This chapter sets out the broad approach that has been used in the EIA. It summarises the key stages that have been followed, in line with EIA good practice. This chapter also provides a section on the assumptions made during the EIA process.

3.2. Parliamentary Requirements and the EIA Regulations

A Private Bill of the Scottish Parliament is required to authorise the construction of GARL. As part of the Private Bill process an EIA should be undertaken and an ES produced to accompany the application for a Private Bill (as required by Rule 9A.2 of the Standing Orders of the Scottish Parliament (Edition 1 10.12.99, Revision 06.01.03)).

EIAs have been required for certain major developments since the implementation in the UK of the European Council Directive on Environmental Assessment (EC Directive 85/337/EEC). The Directive was implemented in the UK in 1988 and subsequently amended by Directive 97/11/EC. In Scotland, Directive 97/11/EC is enacted by the Environmental Impact Assessment (Scotland) Regulations 1999 (as amended). These Regulations set out the information that must be included in the ES. The Regulations require that an ES should include at least:

- A description of the development, comprising information about the site and the design and size of the project;
- An outline of the main alternatives considered and an indication of the main reasons for the chosen scheme;
- The data necessary to identify and assess the main effects that the project is likely to have on the environment;
- A description of the likely significant effects of the project on the environment;
- A description of the measures envisaged in order to avoid, reduce or remedy significant adverse effects;
- An indication of any difficulties encountered in compiling the required information; and
- A Non-Technical Summary of the above information.

3.3. The EIA Process

EIA is the process of compiling, evaluating and presenting all of the significant environmental effects of a proposed development. The assessment is designed to help produce an environmentally sympathetic project. Detection of potentially significant adverse environmental impacts can then lead to the identification and incorporation of appropriate mitigation measures into the scheme design.

The main steps in the assessment procedure are as follows:

- Baseline surveys are carried out to provide a description of the environmental character of the area likely to be affected by the development. This information is provided to the scheme designers at the earliest opportunity;
- Relevant natural and manmade processes that may change the character of the site are identified;
- Consideration is then given to the possible interactions between the proposed development and both existing and future site conditions. These interaction or impacts are assessed using stated criteria based on accepted guidance and best practice;
- Using the initial designs of the development the possible environmental effects, both direct and indirect are predicted;
- Recommendations can then be made to avoid, minimise or mitigate adverse effects and enhance positive effects. Alterations to the design can then be reassessed and the effectiveness of mitigation proposals determined;
- Any uncertainties inherent in the methods used, impact predictions made and conclusions drawn would be identified during the course of the assessment process;
- The results of the EIA are set out in the ES.

3.4. Approach to the Assessment of Impacts

3.4.1. Significant Impacts

The determination of the significance of the impacts arising from the proposed scheme is a key stage in the EIA process. It is this judgement that is crucial to informing the decision-making process. However,

defining what is significant is not a simple task. The following criteria have been used in this EIA, where appropriate to the issue being addressed, to inform the assessment of the significance of an impact:

- Type of impact (adverse/beneficial);
- Extent and magnitude of impact;
- Duration of impact (short term/long term);
- Reversibility of impact;
- Sensitivity of receptor;
- Comparison with legal requirements, policies and standards;
- Comparison with applicable environmental thresholds; and
- Effectiveness of mitigation.

Note that when the significance of impacts is assessed this takes into account mitigation, i.e. the assessment applies to the *residual* impacts of the scheme, which can be defined as any impact that would remain following the implementation of proposed mitigation measures. Assumptions relating to mitigation and detailed design are set out in Section 3.5 below.

Using these criteria, the significance of the impacts arising from the proposed development are categorised throughout the ES using a seven-point scale, as follows:

- Negligible.
- Minor (adverse or beneficial).
- Moderate (adverse or beneficial).
- Major (adverse or beneficial).

For some topics, alternative categories have been added where a greater level of definition is required (e.g. "substantial" is used for the assessment of noise).

Explanations of the meaning of the 'significance categories' are included in the various chapters. However, in general terms if an impact is negligible it is environmentally acceptable; minor significance reflects the fact that the impact is manageable. Impacts assessed as moderate or higher are considered to be 'significant'. It should be noted that throughout the ES, the terms impact and effect are used interchangeably.

3.4.2. Construction, Permanent and Operational Impacts

Impacts have been separated into three 'types' based on different phases of the development:

- Construction impacts are temporary, short-term impacts that occur during the construction phase only;
- Permanent impacts are those long-term effects that would occur as a result of the development and may include the introduction of new structures, the loss of habitat, or the demolition of buildings; and
- Permanent impacts are considered together with operational impacts, i.e. those impacts resulting from operation of the rail link, e.g. noise generated by the additional train service.

3.4.3. Inter-Relationships Between Impacts

For the purposes of the EIA, the potential impacts of the scheme are considered in terms of impacts on each of the discrete environmental topic areas. In reality, topic areas such as 'water quality', 'ecology' or 'landscape' cannot be considered in isolation since changes affecting one factor may often have secondary implications for other areas. Thus, if one impact of the scheme is to alter the quality and quantity of a watercourse, flora and fauna may be affected as a secondary effect. Under some circumstances, it is possible for the secondary or indirect impacts to be more significant than the changes that triggered them. Therefore where potential interactions between environmental topic areas occur these are highlighted in the text.

3.4.4. Cumulative Impacts

Combined and cumulative effects on specific resources or receptors are described, where relevant in each of the specialist chapters. An example would be the impact on a wildlife corridor resulting from a loss of vegetation in several locations.

3.5. Uncertainty, Assumptions and Limitations

3.5.1. General

The EIA process is designed to enable good decision-making based on the best possible information about the environmental implications of a proposed development. However, there will always be some uncertainty as to the exact scale and nature of the environmental impacts. This uncertainty arises

because of the level of detail and information about the scheme available at the time the assessment was carried out and/or due to the limitations of the prediction process itself.

Key issues relating to assumptions are described below. Other topic specific assumptions are set out, where necessary, in Chapters 5 to 14 of this ES.

3.5.2. Assumptions Relating to 'Limits'

The Parliamentary plans identify the 'limits' within which the scheme must be constructed and operated. The limits mark out the precise boundaries of land for which powers are sought, comprising Limits of Deviation (LOD) and Limits of Land to be Acquired or Used (LLAU).

In general, the LOD defines the area over which a permanent interest in land is required for the construction and operation of the GARL. The LLAU defines the area of land required, or rights over that land are required, either permanently for a specified purpose connected with the construction or operation of the GARL, or temporarily for construction purposes or access.

Along the main line section of the GARL scheme the LOD are set no wider than the NR boundary. However in places, the Limits necessarily encompass a wider corridor than the existing NR boundary, for example, where construction compounds and accesses across private land are proposed. Such land would be placed with LLAU.

3.5.3. Level of Design Detail for EIA

Although the assessment has been undertaken to allow for the fact that the alignment could be constructed and operated anywhere within the Limits defined by the Parliamentary plans, the design has been drawn up in sufficient detail to establish that the GARL can be built and operated along the corridor identified by the Limits.

Similar issues of design detail are raised for the EIA in relation to the design of the GARL infrastructure. For example, whilst the location of the airport station has been identified, the assessment of factors such as landscape and visual impacts needs to take account of the fact that such structures will be subject to detailed design. For these reasons, the environmental impact assessment team has used information provided by the scheme designers on the locations, dimensions and designs of bridges, viaducts, the airport station, OLE supports, signalling equipment and the fuel farm, etc.

It is acknowledged that the scheme that is eventually designed and constructed may differ slightly from the design details that have been used in the EIA and reported in this ES. A balance has been sought in the EIA between, on the one hand, specifying enough detail to undertake an assessment that meets the requirements of the EIA Regulations, and on the other hand, avoiding specification of the design to a point that restricts the scope for cost effective design and innovation offered by contractors and/or the operator.

The environmental impacts that are reported in this ES and the level of mitigation described effectively set the minimum standard which will be achieved by the final scheme. The promoter is committed to seeing that where details of the scheme differ from those assessed in the EIA, the project will not generate significant adverse environmental impacts that have not been assessed in the EIA.

Where matters of detail have still to be finalised these will generally be subject to Prior Approval by Renfrewshire Council and Glasgow City Council under the terms of the Town and Country Planning (General Permitted development) (Scotland) Order 1992 as amended. Under Part 11, Class 29 of the order, development authorised by private Act of Parliament is permitted development, except that the erection of inter alia buildings and bridges and the formation, laying out or alteration of means of access to any road must be subject to Prior Approval by the planning authority. This Prior Approval procedure will be adopted for these details of the scheme and to ensure that design and construction is undertaken in a manner which is environmentally acceptable and which meets high standards of design and finish.

3.5.4. Airport Fuel Farm

As discussed in Chapter 2 the proposed alignment means that the existing aviation fuel farm at Glasgow Airport is no longer viable and a new fuel farm will have to be built. It has been decided that the fuel farm will be included within the Bill, as provision of a replacement facility is essential to the viability of Glasgow Airport and therefore the GARL scheme.

For the purpose of this assessment the new fuel farm, which is intended to replace an existing facility, has been assumed to be a 'like-for-like' replacement. On this premise Faber Maunsell has prepared a concept design of the new facility that has been the basis of this element of the EIA for the scheme. This design is discussed in Chapter 2 and the proposed construction methodology is set out in the Appendix to Chapter 2. It should be noted that:

- This general arrangement of the new facility is based on a concept design and reflects what can be achieved within the scheme limits;
- The capacity of the new fuel farm will be 3,500,000 litres and is based on an assessment of the existing fuel farm capacity and on the basis of information supplied by BAA;
- The assessment assumes good practice will be followed in accordance with SEPA Pollution Prevention Guidelines (PPGs), etc.
- The new fuel farm will be provide with a number of bunding systems to prevent spills from escaping from the facility, should they occur;
- There will be a 12-15 metre 'buffer zone between the proposed site of the new fuel farm and the Paisley Moss LNR;
- It has been assumed that the pattern and volume of fuel tanker movements associated with the new design are identical to the current facility. The only difference being that aircraft bowsers will operate exclusively within the air-side of the airport;
- The site was selected by BAA from a number of alternatives, based mainly on planning suitability and best fit with the airport Masterplan. The site although currently unoccupied is zoned in the Local Plan for airport operational use;
- BAA has made a commitment to retain the pedestrian access and cycleway that traverses the Paisley Moss LNR. Note that the cycle way already runs close to the existing fuel farm.

3.5.5. Assumptions Relating to Mitigation

Where the potential for significant impacts has been identified, the scope for their mitigation has been discussed with the design team. In stating the mitigation measures in the ES, the promoter is committed to implementation of all those measures described.

Some mitigation measures will be developed in further detail during the final design and will be subject to the Prior Approval process (see Section 3.5.3 above). In so far as the EIA has not been able to be definitive about the precise form of mitigation to be provided in connection with the final design and construction of the scheme, the promoter is committed to ensuring that the design and construction of the project is within the parameters assessed in the EIA and will not generate significant adverse environmental impacts that have not been assessed.

3.6. Consultation and Scope of the EIA

As part of the EIA, extensive consultation was carried out. The principal method used for consultation was an Environmental Scoping Report prepared and issued by Faber Maunsell. Scoping is the process of identifying the likely significant environmental issues that should be considered in the EIA. As part of the scoping process, assessment methods were identified and consultations carried out to confirm the approach that would be undertaken. The purpose of this consultation was three-fold:

- To request information in order to understand the environmental baseline of the scheme;
- To inform consultees about the details of the proposed scheme; and
- To enable consultees to express their opinion on the scheme and the methods that would be employed in undertaking the EIA.

The GARL Environmental Scoping Report was published in February 2005 and additional consultation was undertaken by letter on 8-11 April 2005 in order to seek the views of consultees on some changes to the scheme including the proposed Elderslie Loop and the relocation of the Glasgow Airport Fuel Farm. Consultation documents were sent to the organisations listed below for comment.

- Architectural Heritage Society of Scotland
- Architecture + Design Scotland (formerly the Royal Fine Art Commission for Scotland)
- BAA / Scottish Airports Limited
- Friends of the Earth Scotland
- Garden History Society in Scotland
- Glasgow City Council
- Glasgow Wildlife Information Centre
- Go Bike!
- Health & Safety Executive
- Historic Scotland
- National Playing Fields Association
- Network Rail
- Renfrewshire Council
- RSPB Scotland
- Scottish Amateur Football Association
- Scottish Badger Group
- Scottish Environment Protection Agency (SEPA)
- Scottish Executive

- Scottish Football Association
- Scottish Natural Heritage (SNH)
- Scottish Rights of Way Society
- Scottish Water Solutions
- Scottish Wildlife Trust
- SportRenfrewshire
- SportScotland
- West of Scotland Archaeology Service

The responses to the Scoping Report indicated that generally the scope of the EIA had been properly defined. A number of consultees made recommendations on particular subjects. These have been incorporated into the assessment where relevant. Copies of scoping responses received are presented in the Appendix to Chapter 3 in Volume 4 of this ES.

Subsequently, a Draft Environmental Statement was issued to selected consultees on 10 June 2005, as required by Standing Order 9A.6A permitting environmental consultees specified in the Parliament's determination to lodge a statement during the objection period for the Bill in relation to the consultation undertaken by the Promoter. These consultees plus selected others, are listed below:

- BAA
- Glasgow City Council
- Health & Safety Executive
- Historic Scotland
- Network Rail
- Renfrewshire Council
- Scottish Airports Limited
- Scottish Amateur Football Association
- Scottish Executive
- SEPA
- SNH
- SportScotland
- West of Scotland Archaeology Service

Subsequently, follow up meetings were held with selected consultees to discuss their responses to the Draft ES of 10 June 2005 and how the issues raised had been addressed in the Final ES. Meetings were held as follows:

SEPA	28 October 2005
Historic Scotland	16 and 21 November 2005
Network Rail	18 November 2005
SNH	23 November 2005
Renfrewshire Council	23 November 2005
BAA	28 November 2005
Glasgow City Council	5 December 2005

The opportunity was also taken at these meetings to discuss the requirements the consultees thought relevant for the Code of Construction Practice (CoCP). Copies of minutes of the meetings are included in the Appendix to Chapter 3 of this ES.

In addition, a number of consultees were written to advising them that a draft ES was available and a copy would be issued if requested. These organisations are listed below:

- Architectural Heritage Society Scotland
- Architecture + Design Scotland
- Friends of the Earth
- Glasgow Wildlife Information Centre
- Go Bike!
- National Playing Fields Association
- RSPB Scotland
- Scottish Football Association
- Scottish Water Solutions
- Scotways
- Sportrenfrewshire
- Sustrans
- Scottish Wildlife Trust
- The Garden History Society in Scotland
- The Scottish Civic Trust

Finally, it should be noted that, in addition to the above, other consultation processes have been undertaken including:

- Promoter Consultation - There has been continual consultation with the Promoter (SPT) throughout the study. This included Steering Group consultations and monthly progress meetings with SPT;
- Stakeholder Consultation - "Stakeholders" were defined as persons or organisations that have an interest in the project proposals other than as a member of the public. Stakeholders include, but are not limited to, the organisations listed above; and
- Public Consultation - The consultations involved a number of methods to achieve an inclusive approach along the length of the proposed rail corridor. A Public Consultation Report has been published by SPT¹.

¹ *GARL Public Consultation Report*, SPT, May 2005