

1.1 THE GLENCORSE WATER TREATMENT WORKS PROJECT

This document is the Environmental Statement (ES) for the Glencorse Water Treatment Works (GWTW) Project. The project will use the existing raw water supply sources and will provide a new water treatment works (WTW), treated water storage and pipework connections into the existing drinking water distribution system for most of the City of Edinburgh and part of Midlothian. The new WTW and treated water storage will replace the existing facilities at Alnwickhill and Fairmilehead built in 1875 and 1909 respectively, which currently provide the majority of Edinburgh's drinking water. The new works will provide up to 175 million litres of drinking water a day to Edinburgh (approximately 70% of current demand) and is proposed at Glencorse, south-west of Edinburgh and 1 km to the north-west of Penicuik. The locations of the proposed development areas are shown on *Figure 1.1*. The main components of the development are shown in *Figures 1.2* and *1.3* and the pipeline proposals are shown in *Figure 1.4*. Details of the proposals, including the site selection process, are presented in *Chapter 2*.

The project is being promoted by Scottish Water, the statutory authority responsible for supply of drinking water in Scotland. The requirement for a new WTW is to ensure that customers receive water supplies that meet the requirements of the *Water Supply (Water Quality) (Scotland) Regulations 2001* and the *Cryptosporidium Directions 2000* and *2002*, which implement European Union Directives on the quality of drinking water. Scottish Water is also required to ensure that it has the necessary facilities to serve the growing demands of the City of Edinburgh. Scottish Water has given an undertaking to the Scottish Executive that it will meet these requirements by 2010.

This ES has been prepared on behalf of Scottish Water by Environmental Resources Management (ERM) and supports three separate applications for planning consent to develop the new works. Two applications have been made to Midlothian Council, one covering the WTW and on-site clear water storage and one for the pipelines within the Midlothian Council administrative area. One application has been made to the City of Edinburgh Council covering the pipelines, turbine house and break pressure tank within its area. The administrative boundaries are shown in *Figure 1.5*.

1.2 REQUIREMENT FOR ENVIRONMENTAL ASSESSMENT

Screening Opinions were obtained from Midlothian Council and the City of Edinburgh Council on the requirement for environmental assessment of the proposals under the *Environmental Impact Assessment (Scotland) Regulations*

1999⁽¹⁾. It was the opinion of both local authorities that due to the proposed scale and greenbelt location of the WTW and pipelines they would fall within the category of infrastructure projects (Class 10) in Schedule 2 of the Regulations. The regulations require that planning applications for projects likely to have a significant impact on the environment must be subject to Environmental Impact Assessment (EIA) and the resultant ES must be submitted in support of the planning applications and it must be available for public review and comment prior to a decision being made on grant of planning permission.

Table 1.1 outlines the matters to be addressed in the ES, as required by Schedule 4 of the *Environmental Impact Assessment (Scotland) Regulations 1999*.

Table 1.1 *Matters for Inclusion in Environmental Statements*

<p>1. A description of the development including in particular:</p> <ul style="list-style-type: none"> • A description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases; • A description of the main characteristics of the production process, for instance, nature and quantity of the materials used; • An estimate by type and quantity, of expected residues and emissions (water, air, and soil pollution, noise, vibration, light, heat, radiation etc) resulting from the operation of the proposed development
<p>2. An outline of the main alternatives studied by the applicant and an indication of the main reasons for this choice, taking into account the environmental effects.</p>
<p>3. A description of the aspects of the environment likely to be significantly affected by the development, including, in particular:</p> <ul style="list-style-type: none"> • population • fauna and flora • soil • water • air and climatic factors • material assets, including the architectural and archaeological heritage • landscape • the inter-relationship between the above factors
<p>4. A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary or cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development resulting from:</p> <ul style="list-style-type: none"> • the existence of the development; • the use of natural resources; • the emission of pollutants, the creation of nuisances and the elimination of waste, • and the description by the applicant of the forecasting methods used to assess the effects on the environment.
<p>5. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.</p>
<p>6. A non-technical summary of the information provided under Paras 1 - 5 of this Part.</p>
<p>7. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.</p>

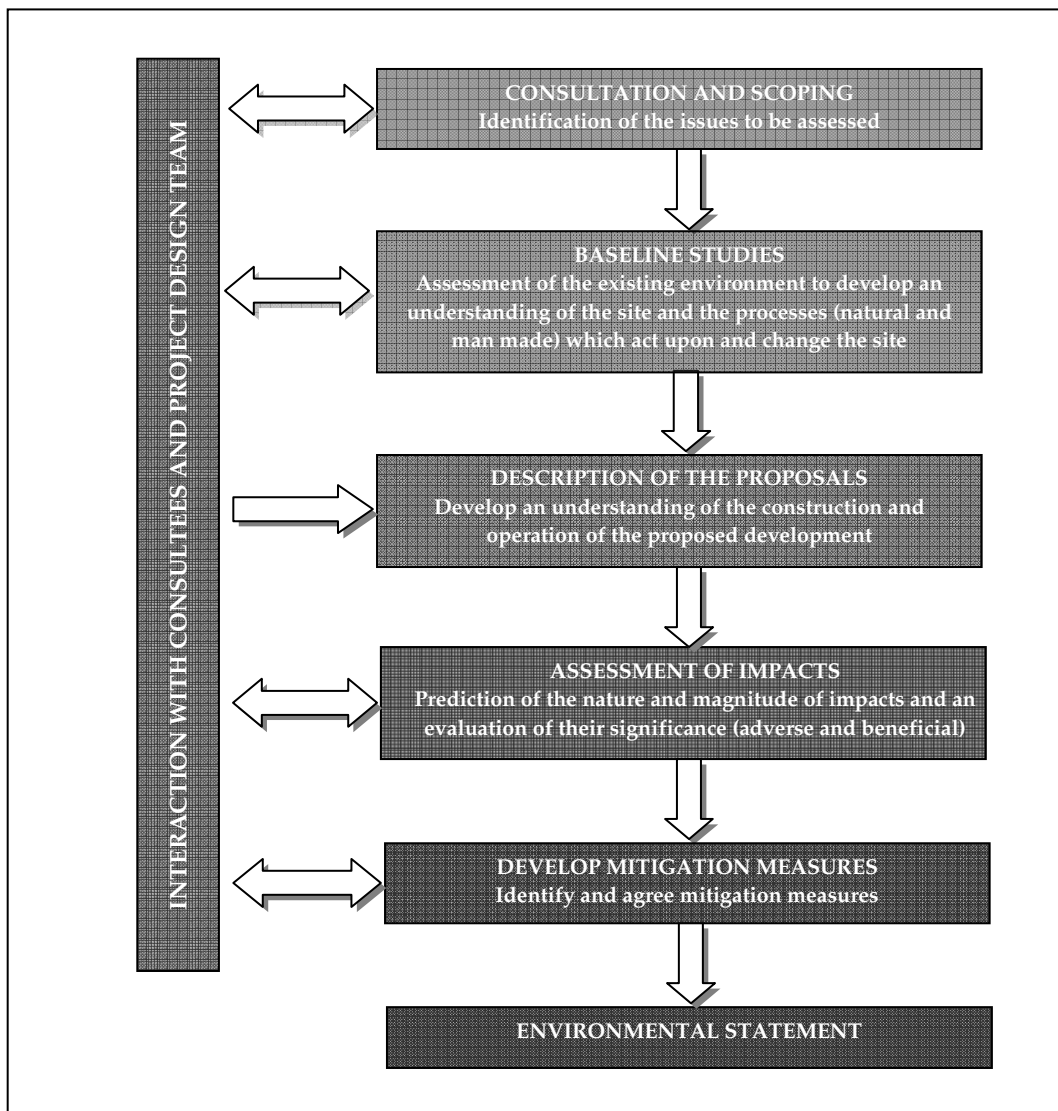
(1) Statutory Instrument 1999 No. 1.

1.3 APPROACH TO THE EIA

1.2.1 Introduction

In preparing the ES for the proposals we have sought to adopt current best practice in EIA and, in particular, to follow the guidance from the Scottish Executive set out in PAN 58 ⁽¹⁾ and Circular 15/99 ⁽²⁾. Figure 1.6 presents an overview of the approach to the EIA and Sections 1.3.2 to 1.3.8 provide further details on key aspects of the assessment process.

Figure 1.6 Approach to EIA



(1) Scottish Executive (1999) Planning Advice Note 58 *Environmental Impact Assessment*.

(2) Scottish Executive Circular 15/99 *The Environmental Impact Assessment (Scotland) Regulations 1999*.

1.2.2 *Consultation and Scoping*

In line with best practice in EIA during the preparation of the ES the project team conducted a programme of consultations with organisations whose interests might be affected by the proposed development. This was undertaken to ensure that the ES covered all relevant issues and that the concerns of external stakeholders were taken into account in the design process. That process included the statutory agencies, public utilities, environmental and other non-governmental organisations, community groups, neighbours and others who have expressed an interest in the scheme.

An Environmental Scoping Report was issued in October 2007 which provided consultees with a brief description and illustration of the proposed development, together with an indication of what the applicant considered to be the likely significant environmental impacts of implementing the proposals and the proposed approach to assess these.

The consultations were helpful in identifying useful information, highlighting areas of environmental concern and opportunities for mitigation, and defining the scope of the assessment.

The list of organisations consulted, along with a summary of their comments are provided in *Annex B*.

1.2.3 *Alternatives*

The 1999 EIA Regulations require an ES to describe the main alternatives considered by the developer during development of the proposals and to explain the main reasons for selecting the proposed scheme, including environmental reasons. We therefore present a summary of the process of development of the project for the consideration of alternatives in *Section 2.2* of *Chapter 2* of this ES, and in more detail in *Annex D*.

1.2.4 *Key Steps in the Assessment Process*

The approach adopted to carry out the assessment is outlined in the following steps.

1: Identification of Potential Impacts

The first step is to identify potential impacts by considering the project activities and how the project might interact with its environmental and social resources and receptors. Completion of this step requires information on the likely project activities and an understanding of the main baseline conditions.

2: Identifying the Most Significant Impacts

The aim of step 2 is to ensure that the EIA is focused upon the study of impacts that are considered to be the most important for decision-making. Identifying the most significant impacts requires the expert judgment of

relevant specialists working together to systematically go through each activity. Cumulative impact assessment is important for identifying those activities that in themselves may only have a minor impact but when repeated across a wide area or over a period of time or in combination with other activities in the area may have potentially more significant impacts.

For each potentially significant interaction, the nature of the resource/receptor that is likely to be affected is considered along with an assessment of the likelihood of an impact occurring.

3: Developing Mitigation Measures

An essential purpose of any EIA process is to work with the developer to identify potentially significant concerns about the environmental impacts of proposed development so that practicable ways of avoiding or reducing adverse impacts and providing environmental benefits can be identified. These measures are commonly referred to as *mitigation measures*. Some of these measures can be embedded in the design of the works, eg landscaping and others are included in the proposed construction practices. These mitigation measures are described in this ES and they have been taken into account in the assessment of impacts and are identified in the *Schedule of Environmental Mitigation* which is presented in *Annex A*.

4: Evaluating Residual Impacts

The significance of the potential impact is reviewed taking into consideration any mitigation and management measures that will be applied to avoid, reduce or remedy the impact. The significance of the residual ⁽¹⁾ impacts are then re-evaluated against the criteria established for the assessment and reported in the ES.

1.2.5 *Definition of Impacts*

This ES seeks to provide a comprehensive description of how the project could affect the physical, natural, human and cultural environment. The definitions of the various types of impacts that are required to be assessed under the EIA Regulations ⁽²⁾ are given in *Box 1.1*.

(1) A residual impact is the impact predicted to remain once mitigation measures have been designed into the intended activity.

(2) Schedule 4 of the EIA Regulations requires that an ES should cover the "direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development."

1. Nature of Impact

Negative: an impact that is considered to represent an adverse change from the baseline or to introduce a new undesirable factor.

Positive: an impact that is considered to represent an improvement to the baseline or to introduce a new desirable factor.

2. Type of Impact

Direct (or primary): an impact that results from a direct interaction between a project activity and the receiving environment (eg, removal of trees to construct the pipeline).

Indirect (or secondary): an impact that follows on from the primary interactions between the project and the environment as a result of subsequent interactions within the environment (eg, the erosion of a riverbank as a result of upstream development)

Cumulative: an impact that acts together with another impact or impacts (including repeated impacts over time or those from other concurrent or planned future activities) to affect the same environmental resource or receptor.

3. Duration of Impact

Short-term: an impact that is predicted to last only for a limited period but will cease on completion of the activity, or as a result of mitigation/reinstatement measures and natural recovery.

Long-term: an impact that will continue over an extended period including those that may be intermittent or repeated rather than continuous if they occur over an extended time period (eg repeated seasonal disturbance of species from project activities).

Temporary: an impact that is predicted to be of short duration and intermittent/ occasional in nature.

Permanent: an impact that occurs during the development of the project and causes a permanent change in the affected receptor or resource (eg the destruction of a cultural artefact) that is permanent or endures substantially beyond the project lifetime.

4. Scale of Impact

Local: an impact that affects locally important environmental resources or receptors or is restricted to a single habitat, single administrative area or single community.

Regional: an impact that affects regionally important environmental resources or is felt at a regional scale as determined by administrative boundaries or habitat type.

National: an impact that affects nationally important environmental resources or affects an area that is nationally important or protected.

International: an impact that affects internationally important environmental resources such as areas protected by International Conventions.

1.2.6

Significance of Environmental Impacts

The EIA Regulations do not require the ES to describe all potential environmental impacts of a development but only those that are considered likely to be significant. All projects will impose some impact on aspects of the environment due to physical effects on natural systems or due to interactions with human activities. The primary purpose of identifying the significant impacts of a project is to provide information to the regulators so that an informed decision on the proposals can be reached.

There is no statutory definition of significance, therefore, the determination of significance is necessarily subjective. For the purposes of the EIA the following definition of significance has been adopted.

An impact is significant if, in isolation or in combination with other impacts, it should, in the judgement of the EIA team, be taken into account in the decision-making process, including the identification of mitigation measures and consenting conditions.

Criteria for assessing the significance of impacts stem from the following key elements.

- Status of compliance with relevant government legislation, policies and plans, and any relevant industry policies, environmental standards or guidelines.
- The magnitude (including nature, scale and duration) of the change to the natural or socio-economic environment (eg loss of, or damage to, habitats, increase in noise, increase in employment opportunities), expressed, wherever practicable, in quantitative terms.
- The nature of the impact receptors (physical, biological or human). Where the receptor is physical (eg, soils or water courses) its quality, sensitivity to change and importance are considered. Where the receptor is biological, its importance (eg, its local, regional, national or international importance) and its sensitivity to the impact are considered.
- The likelihood (probability) that the predicted impact will occur. This is estimated based upon experience and/or evidence that such an outcome has previously occurred.

For this assessment, impacts that are slight or transitory or are indistinguishable from the background / natural level of environmental change will be described as *no impact* or *not significant*. Impacts assessed as significant have been defined based on three levels described below.

- *Minor* significance: impacts of low magnitude and /or associated with low or moderate value / sensitivity receptors or sites, or impacts of moderate magnitude affecting low value / sensitivity receptors or sites.
- *Moderate* significance: impacts of low magnitude, affecting high value / sensitivity receptors or sites, or impacts of moderate magnitude affecting moderate value / sensitivity receptors or sites, or impacts of high magnitude affecting moderate sensitivity receptors or sites.
- *Major* significance: impacts of high magnitude affecting high or moderate value / sensitivity receptors or sites, or impacts of moderate magnitude affecting high value / sensitivity receptors or sites.

The extent to which impacts cause a breach of acceptable limits or standards is also taken into consideration on determining significance.

It should be noted that the criteria and terminology above will be used in the absence of recognised topic specific guidance. Certain topic areas, such as Landscape and Visual, possess specific and recognised assessment guidelines. Where these recognised guidelines exist they will be utilised for assessment purposes.

1.2.7 *Cumulative Impacts*

There is no statutory definition of cumulative impacts. The approach followed for this EIA follows the latest EIA guide to good practice and procedures from DCLG (2006) which states:

“In most case, detailed consideration of the combined effects of the development proposed together with other developments will be limited to those that are already begun or contracted or those that have not been commenced but have a valid planning permission”.

1.2.8 *Dealing with Uncertainty*

Even with a final project design and an unchanging environment, impacts are difficult to predict with certainty. Predictions can be made using varying means ranging from qualitative assessment and expert judgement through to quantitative techniques (eg, noise modelling). Use of these latter techniques allows a good degree of accuracy in predicting changes to the existing environmental conditions and making comparisons with relevant environmental quality standards. Where assumptions have been made, the nature of any uncertainties which stem from the prediction process require to be presented.

Uncertainty can also arise as a result of the stage reached in the design process at the time of preparation of an ES. Where the project design is still carrying forward options, or where it is yet to develop final detail, some level of uncertainty in assessing the resultant impacts is inevitable. Where this uncertainty is material to the findings of the EIA, it needs to be clearly stated. The general approach is to take a conservative view of the likely residual impacts and propose mitigation measures accordingly.

1.3 *THE EIA TEAM*

The EIA was undertaken by ERM under contract to the Scottish Water's main contractor Black and Veatch. CFA undertook the archaeological field surveys and evaluation, the Wildlife Partnership undertook the Phase 2 ecological surveys and Donald Roger Associates undertook trees surveys. Civil engineering, building, landscape and access design was undertaken

Montgomery Watson Harza (MWH), the Building Design Partnership (BDP) and Grontmij Limited.

1.4

THE STRUCTURE OF THE ENVIRONMENTAL STATEMENT

The remainder of the ES is structured as follows.

- Chapter 2 – The Proposed Scheme
- Chapter 3 – Landscape and Visual
- Chapter 4 – Ecology and Nature Conservation
- Chapter 5 – Water Resources
- Chapter 6 – Geology, Soils and Land Use
- Chapter 7 – Archaeology and Cultural Heritage
- Chapter 8 – Transport and Access
- Chapter 9 – Noise and Vibration
- Chapter 10 – Air Quality

For each topic addressed within *Chapters 3 to 10*, the scope of the section and the approach to the assessment are introduced, the existing situation for the Glencorse site and along the pipeline routes is described, and the significance of impacts of the proposals are discussed taking account of measures that will be taken to mitigate significant impacts. Where appropriate, the sources of information and methods used for their assessment are provided.

Drawings produced by the design team for the Planning Applications have been included to illustrate key aspects of the proposals. These have been copied in A4 or A3 format from the larger A1 format originals.

The main text of the ES is supported by more detailed information presented in annexes. These are listed below:

- Annex A – Schedule of Mitigation
- Annex B – Summary of Consultation
- Annex C – Pipeline Route Drawings
- Annex D – Consideration of Alternatives
- Annex E – Tree Survey Results
- Annex F – Ecological Survey Information
- Annex G – Archaeology and Cultural Heritage
- Annex H – Construction Plant Inventories
- Annex I - Photographs and Views
- Annex J – Masterplans for Other Developments in the Area

In accordance with the requirements of the Regulations the findings of the assessment have been summarised in a Non-Technical Summary. This is presented at the beginning of this ES and is also available as a separate document. The planning applications are also supported by the following documents:

- Planning Statement;
- Design Statement; and
- Planning Drawings.

1.5

OPPORTUNITY TO COMMENT

Copies of the ES are available on request. A charge of £75 plus VAT will be made as a contribution towards the costs of reproduction. Copies of the Non-Technical Summary (NTS) are available free of charge. Electronic copies of the full planning application on CD ROM are available for a charge of £5 plus VAT. Key elements of the planning applications are also available for viewing or downloading free of charge on the Glencorse Water Treatment Works Project webpage (www.scottishwater.co.uk/glencorse).

Copies of the ES and NTS can be obtained from:

ERM
Norloch House
36 King's Stables Road
Edinburgh
EH1 2EU
Tel - 0131 478 6000
Fax - 0131 478 3636
E-mail – eleanor.evans@erm.com

The planning applications may also be inspected during normal working hours at the following addresses:

Midlothian Council Fairfield House 8 Lothian Road Dalkeith EH22 3ZP	City of Edinburgh Council 4 East Market Street Edinburgh EH8 8BG
Penicuik Library Bellmans Road Penicuik EH26 0AB	Scottish Water Fairmilehead Office 55 Buckstone Terrace Edinburgh EH10 6XH
Loanhead Library George Avenue Loanhead EH20 9HD	Pentland Hills Regional Park Boghall Farm Biggar Road Edinburgh EH10 7DX

If you wish to comment or make representations to the planning authority on the planning applications or this ES, so that your views can be considered by the authority in reaching its decision on the application, please write as soon as possible to the Planning Manager at Midlothian Council or Edinburgh City Council office at the above addresses.

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