

TECHNICAL APPENDIX 1.1: EIA SCOPING REPORT

Intended for
Winchburgh Developments Limited

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WINCHBURGH M9 JUNCTION

EIA SCOPING REPORT

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Made by **Sam Edwards**
Checked by **Maeve Fryday**
Approved by **Maeve Fryday**

Made by:	
Checked/Approved by:	

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1. INTRODUCTION

1.1 Background

An application is to be made by Winchburgh Developments Ltd (hereafter referred to as the 'Applicant') to Transport Scotland, as the relevant Roads Authority, to request that Transport Scotland publish draft roads orders under the Roads (Scotland) Act 1984¹ to construct a new motorway junction on the M9 at Duntarvie, Winchburgh (the 'proposed development').

The proposed development forms part of the Winchburgh Masterplan development, which has received outline planning consent from West Lothian Council (WLC) (application reference: 1012/P/05). The outline planning consent includes development of a 352 hectare (ha) settlement expansion, including residential, commercial, industrial, recreation and retail uses. It also includes community facilities, landscaping and open space. The outline planning application also covered rail and road infrastructure, including a train station, park and ride facilities, a junction to the M9 motorway, and primary and secondary school provision. The detailed design of the aspects of the proposed development of the masterplan area is largely covered by the Planning Act 2008² and is the subject of matters specified in conditions (MSC) planning applications.

Other consenting mechanisms apply to the provision of transport infrastructure and the proposed M9 motorway junction, which is the subject of this Scoping Report, and will be the subject of separate roads orders. The M9 motorway junction was considered as part of the overall proposed development put forward in the application for outline planning consent as part of the Winchburgh Masterplan. The Winchburgh Masterplan outline planning application included an Environmental Statement (ES) (the '2006 Winchburgh Masterplan ES') which considered the principle of establishing a M9 motorway junction at Winchburgh, but not the specific impacts potentially associated with the motorway junction in detail. The development of a new motorway junction includes development of elements of motorway carriageway (slip roads and access lanes), and is subject to The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017³ (the 'EIA Regulations') thus an Environmental Impact Assessment (EIA) will be prepared in support of the planning application. The consenting process will be an application for a roads order from Transport Scotland under the Roads (Scotland) Act 1984.

The details of the newly proposed M9 motorway junction are now in the process of being defined and the potential for significant impacts associated with this proposed development has been considered in determining the proposed scope of the EIA; the information available at the time of, and generated as part of, the 2006 Winchburgh Masterplan ES and has been used to inform the proposed scope of the EIA presented within this Scoping Report.

1.2 Purpose of EIA Scoping Report

An EIA is required for proposed motorway carriageway developments and thus the application to Transport Scotland will be accompanied by an Environmental Impact Assessment Report ('EIA Report'). A screening request seeking confirmation of this position was originally issued to Transport Scotland on 26 September 2014 for a previous iteration of the proposed junction scheme, of which it was confirmed that the scheme is an 'EIA Development' and subject to the previous EIA Regulations⁴.

¹ Her Majesty's Stationery Office (HSMO), 1984. Roads (Scotland) Act 1984. HMSO.

² HSMO, 2008. Planning Act 2008. HMSO.

³ HMSO, 2017. The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017. HMSO.

⁴ A screening request was made (and screening opinion provided) under the 2011 EIA Regulations. Subsequently, a scoping request was made, supported by a Scoping Report in 2014 under the 2011 EIA Regulations (HMSO, 2011. The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011. HMSO.). However, the scoping process was not concluded and no formal 'Scoping Opinion' was provided by Transport Scotland as the project was suspended. Given the time that has elapsed this

This report is provided to Transport Scotland in support of a request by the applicant for a scoping opinion on the information to be provided in the EIA Report. This report is also provided to statutory consultees and other parties likely to have an interest in the proposed development to invite and inform comment on the information to be provided.

The objectives of this report are to;

- describe the nature of the proposed development;
- invite comment on the environmental issues associated with the proposed development and to determine whether the key environmental issues have been identified; and
- invite comment on the proposed approach to baseline information collection, prediction of the environmental impacts and the assessment of impact significance.

The applicant has appointed Ramboll Environment and Health UK Ltd ('Ramboll') to complete the EIA scoping on their behalf, in addition to the relevant baseline environmental work which has informed the development of this scoping report.

1.3 Structure of this Report

This report is structured as follows:

- Section 2 presents a description of the proposed development and the application site, including location, surroundings and nearby sensitive receptors;
- Section 3 and the requirements of an EIA, and the overall assessment methodology of the EIA;
- Section 4 describes the baseline conditions and potential significant environmental effects associated with the proposed development, together with the proposed assessment methodology to be used in the EIA by topic;
- Section 5 details the topics for which it is considered that there is no potential for significant adverse environmental effects to occur, and therefore why they have been 'scoped out' of further assessment in the EIA; and
- Section 6 provides a summary of this report.

1.4 Consultation Strategy

The process of consultation is a key requirement of EIA and the views of statutory consultees and stakeholders serve to help identify specific issues, as well as highlighting the existence of any information in their possession, or of which they have knowledge, which may be of assistance in progressing the EIA. The key consultees that should be provided the opportunity to contribute to the formal EIA Scoping process include, but are not limited to those set out in Table 1.1.

Each technical chapter of the EIA Report will include a summary of the consultations undertaken as part of the EIA.

As part of the design and EIA process, measures will be developed and discussed with relevant consultees (i.e. SEPA, SNH, HES) and stakeholders to avoid, reduce, remediate likely adverse effects, or provide enhancements, as appropriate.

Table 1.1: Consultees	
Statutory Consultees	Non-Statutory Consultees
Transport Scotland	Scottish Water (SW)
Scottish Environmental Protection Agency (SEPA)	Police Force and Crime Commissioners
Scottish Natural Heritage (SNH)	Scottish Wildlife Trust
Historic Environment Scotland (HES)	Local Ward Councillors
West Lothian Council (WLC)	Emergency Services and Multi Agency Emergency Planning

2. PROJECT AND SITE DESCRIPTION

2.1 Description of Site and Setting

The area covered by the proposed development (the 'site') is located to the north of the existing village of Winchburgh in West Lothian, Scotland; between the existing M9 junctions 1a and 2, surrounding the point where the M9 spans the B8020 (Beatlie Road) at Duntarvie.

The extent of the site is shown in Figure 1 at Appendix 1. The site area has been defined as the maximum area that would be required to facilitate the development of the motorway junction, with the footprint of the proposed motorway development expected to be considerably smaller than this. The environmental assessment will specifically consider this smaller footprint which is currently being defined through design development.

2.2 Surrounding Environment and Environmental Considerations

The land uses surrounding the site are characterised as follows:

- To the north are fields and minor roads. Duntarvie Castle also lies immediately north of the site boundary, west of the B8020;
- To the east is agricultural land and Swineburn Wood. The Swine Burn flows east-west beneath the M9 and, further south-east, a railway crosses east-west under the M9. The B9080 from Winchburgh to Kirkliston crosses over the M9 at the southern end of the site;
- To the south lies a railway line, beyond which is the existing village of Winchburgh. The B8020 approaches the site from Winchburgh and is mainly surrounded by agricultural land. The Union Canal runs north-south through Winchburgh before turning westwards approximately 600 m south of the site; and
- To the west there is further agricultural land as well as the hamlets of Duntarvie and Craigton.

2.3 Environmental Sensitivity

The proposed development is located within an agricultural area to the north of the existing village of Winchburgh. With reference to the 2006 Winchburgh Masterplan ES, the key environmental sensitivities of relevance to the site are as follows:

- the surrounding landscape, which is characterised by agricultural land and scattered residential dwellings, and includes a high incidence of infrastructure elements, bings, scattered settlement and some woodland;
- Duntarvie Castle is a scheduled monument and category A listed building, located immediately north of the site and Hopetoun House Area of Great Landscape Value (AGLV), located approximately 600m to the north;
- the Swine Burn, which flows through the site, underneath the M9, and is identified by the Scottish Environment Protection Agency (SEPA) as having a High risk of flooding associated with it;
- protected species, including otter and water vole recorded in proximity to the Swine Burn and badger and potential for roosting bats elsewhere on the site; and
- isolated residential properties, which may experience air quality and noise impacts.

2.4 Proposed Development

The proposed development comprises a new dumbbell grade separated junction (4 slip roads) on the existing M9 motorway. The purpose of the proposed development is to provide access to the M9 in all directions to serve the proposed Winchburgh extension.

The proposed development will include the realignment of the B8020 to the north, to tie in to the proposed northern roundabout and local amendments of the B8020 to the south, to tie in to the proposed southern dumbbell roundabout. Connecting the two roundabouts the existing B8020 will be retained with minor modifications and including the existing underpass beneath the motorway. The existing motorway embankment will be extended to accommodate the new slip road alignments.

The construction phase of the proposed development will include the following elements:

- an extension of the Swine Burn culvert (south side of M9);
- provision of an appropriate road drainage and SUDS system comprising filter drains, pre-earthworks ditches and swales;
- road signage and safety barrier;
- the realignment of an existing access track (running along the south-eastern extent of the proposed junction); and
- Non-Motorised User provisions.

2.5 Construction Environmental Management

The contractor will be responsible for compiling Construction Method Statements prior to construction commencing on site, general construction assumptions will be submitted with the roads orders application. This will indicate the likely construction phasing and main activities anticipated, and the measures that will be implemented by the main contractor to minimise the potential for environmental impact, including pollution prevention measures (in line with SEPA's Pollution Prevention Guidelines (PPGs)⁵), waste and sediment minimisation and management measures and measures proposed to maintain access for vehicle travellers. It would also outline the landscaping and habitat restoration measures to be implemented following construction, for the temporary site facilities and site compound area.

The ES will contain site-specific information on all aspects of site work that might have an impact upon the surrounding environment, including detailed information on preventative action and mitigation to limit impacts. These will include but will not be limited to:

- Fuel transport and storage management;
- Stockpile storage;
- Earthworks;
- Mechanical digging of new or existing drainage channels;
- Vehicle access over watercourses;
- Construction of watercourse crossings and digging of excavations (particularly regarding management of water ingress);
- Temporary and long-term welfare arrangements for workers during construction; and
- Maintenance of vehicles and plant.

Where appropriate, the EIA Report will also set out which periods of the year would be best for certain construction activities to take place, taking into account the need to avoid pollution risks and other environmental sensitivities affecting operational timing, such as bird nesting and higher levels of precipitation.

⁵ A review plan for the PPGs is currently underway, replacing them with a replacement guidance series, Guidance for Pollution Prevention (GPPs). GPPs provide environmental good practice guidance for the whole UK, and environmental regulatory guidance directly to Northern Ireland, Scotland and Wales only. For businesses in England, regulatory guidance is available from GOV.UK instead.

The EIA Report will set out mechanisms to ensure that workers on the site, including subcontractors, are aware of environmental risks, and are well controlled in this context. The EIA Report will state whether or not appropriately qualified environmental scientists or ecologists are to be used as Clerk of Works or in other roles during construction to provide specialist advice. Details of emergency procedures to be provided will also be identified in the EIA Report.

The presentation of the above information will allow regulators to assess the environmental impact of the proposals prior to determination and provide the basis for more detailed construction method statements which may be requested as part of planning conditions.

All phases of development will be carried out with proper regard and understanding of the effect that potential impacts can have on the site and the wider area.

3. THE EIA AND EIA REPORT

3.1 DMRB and EIA Context

The roads order application will be accompanied by the Environmental Statement (ES) (the 'EIA Report') reporting the findings of the EIA completed in accordance with the Design Manual for Roads and Bridges (DMRB) (2008) Volume 11: Environmental Assessment⁶. Volume 11 of the DMRB provides guidance on the environmental assessment of roads projects, including details of potential impacts and mitigation measures for a range of topics that are likely to be relevant to such projects.

The proposed scope of assessment will be based on the requirements of the DMRB (2008), and the EIA Scoping Report will describe the proposed methodology for assessment of potential impacts relating to the following topics:

- Landscape and Visual Amenity;
- Cultural Heritage and Archaeology;
- Ecology and Nature Conservation;
- Air Quality;
- Noise and Vibration; and
- Road Drainage and the Water Environment.

There are a number of the topics listed in the DMRB Volume 11, and also within the EIA Regulations (the EIA Regulations introduced a number of new issues to be considered in EIA which do not appear in the DMRB Volume 11) which we propose to scope out from the EIA based on the lack of potential for significant effects associated with the proposed development (e.g. geology and soils, materials, land use, effects on travellers, community effects, human health, and climate change) – refer to Section 7 of this Report. This is not to say that information on these topics would not be provided in an EIA Report, rather that such information would form part of the Development Description and form a consideration in the Design Evolution and Alternatives.

3.2 The EIA Process

EIA is a process that identifies the likely significant environmental impacts, (both positive and negative) of development proposals and aims to prevent, reduce or manage significant adverse environmental effects. The findings of the assessment are presented in a single document, known as an Environmental Impact Assessment Report (referred to in this Report as the 'EIA Report').

The EIA Report will provide a clear and concise assessment of the environmental impacts associated with the construction and operation of the development proposal. It will indicate the nature of impacts identified, according to the following descriptions; direct, indirect, and cumulative short, medium and long term, permanent, temporary, positive and negative.

An assessment of alternatives and of potential cumulative impacts with other proposed developments is required as part of EIA and the approach proposed to these aspects of the EIA is described below.

The purpose of the EIA Report is to inform the competent authority, here Transport Scotland, statutory consultees and the public about the proposals, allowing consultees and the public to provide feedback, and enabling Transport Scotland to take into account all environmental information when making a determination on the application.

⁶ Department for Transport, 2008. Design Manual for Roads and Bridges Volume 11: Environmental Assessment.

3.3 Future Baseline

The purpose of EIA is to predict how environmental conditions may change as a result of a proposed development. This requires that the environmental conditions now and in the future (assuming no development) are established. These conditions are referred to as the baseline and are usually established through a combination of desk based research, site survey, and empirical studies and projections. Together these describe the current and likely future character of the Site and surroundings, and the value and vulnerability of key environmental resources and receptors.

Making predictions about how parameters such as land use, landscape, views and the wider community may change in the future relies heavily on assumptions about future development and environmental trends and is at risk of being wholly hypothetical and subjective. For this reason, the baseline adopted for EIA is normally taken as the current character and condition of the Site and surrounds, and the likely significant environmental impacts of the development are then assessed in the context of the current conditions alone.

Where relevant, assessments may consider the likely future baseline (e.g. Landscape and Visual amenity), however most of the assessments will be carried out in relation to the current baseline conditions.

3.4 Alternatives

The EIA Regulations require an applicant to outline any alternatives that may have been considered in the course of the EIA and to give an indication of the main reasons for the resulting choice. Guidance does not define the meaning of alternatives, but in this case, it has been interpreted to refer to alternative layouts considered in the design process.

The EIA Report will summarise the main alternatives considered and how the layout and design have been informed by environmental factors.

3.5 Cumulative Impacts

Cumulative impacts arise where the effects of one proposed development combine with the effects of another, with the result that, usually, a larger (and possibly more significant) impact might arise. Guidance states that cumulative impacts need only be considered in the case of committed developments within the vicinity of a project under consideration; in other words, developments that have been granted planning consent, or where a competent authority is minded to grant planning consent or projects which are under early stages of construction.

It is proposed that the Winchburgh Masterplan will be considered in assessing the cumulative impacts of the proposed development. The location of the Winchburgh Masterplan is shown in Figure 2 at Appendix 2.

4. POTENTIAL SIGNIFICANT ENVIRONMENTAL IMPACTS AND LIKELY EFFECTS

This section identifies the key issues at the site, which are likely to give rise to potentially significant environmental effects in connection with the proposed development.

As referred to in section 3, the below topics are informed by guidance contained in Volume 11 of the DMRB. In addition, the scope set out here has been determined with reference to the advice in PAN 1/2013 that EIA should be concise and proportionate, focusing on those issues of most relevance to the decision.

The following sections set out the effects which will be scoped into the EIA. For each issue, the baseline situation as it is currently understood is summarised together with any additional studies which are considered necessary, likely potential significant effects are identified and the proposed assessment methodology is outlined.

4.1 Landscape and Visual Amenity (LVIA)

4.1.1 Application Site Information and Potential Impacts

Landscape Character

The LVIA assessment undertaken for the 2006 Winchburgh Masterplan ES identified the local landscape as one of settlement set within a lowland agricultural landscape with remnants of an industrial past and a strong pattern of infrastructure. The site is located within the Coastal Margins Linlithgow/ Queensferry Farmlands Landscape Character Type.

The closest settlement to the site is the existing village of Winchburgh located approximately 1 km to the south of the site. This includes the new and proposed built areas of the Winchburgh Masterplan. Kirkliston is located approximately 2 km to the south east of the site. The B9080 which spans the M9 connects Winchburgh and Kirkliston. The B8020, which passes under the M9 through the site, connects Winchburgh with the A904 Builyleon Road to the north of the site.

The Linlithgow to Edinburgh Railway line passes under the M9 approximately 700 m south-east of the proposed junction.

The LVIA assessment undertaken for the 2006 Winchburgh Masterplan ES identified that there are no statutory designated Historic Gardens or Designated Landscapes located within or adjacent to the site. However, the cultural heritage assessment undertaken as part of the EIA for the Winchburgh Masterplan development⁷ identified the Hopetoun House AGLV located approximately 900 m north of the site.

Visual amenity

The general character of views from residential and linear receptors (i.e. roads, railways and the Union Canal) is of agricultural land with a high incidence of infrastructure elements, bings, scattered settlement and some woodland, with the village of Winchburgh set within this context.

The proposed development may impact upon local views and landscape amenity. The LVIA assessment will consider the likely significant effects on landscape and visual amenity associated with both the construction and operational phases of the proposed development.

4.1.2 Approach and Methodology

A site walkover survey will be undertaken to identify the viewpoints which will be considered for assessment. It is assumed that a maximum of five representative viewpoints would be utilised in

⁷ ENVIRON UK Ltd (2005); Winchburgh Future Urban Extension: Environmental Statement, August 2005.

the assessment. The selected viewpoints will be submitted for agreement to WLC and Scottish Natural Heritage (SNH).

The following figures will be produced to inform the assessment:

- a landscape designation plan;
- a landscape character plan;
- a landscape and visual analysis drawing, highlighting key features and elements that control intervisibility within the study area;
- photo sheets depicting existing views from up to 5 representative viewpoints; and
- a mitigation drawing showing the location of any mitigation measures such as screen planting.

For the purposes of these proposals we have assumed that there will be no requirement to generate photomontages and no allowance has been made for this. Similarly, we understand that lighting will be required and we have assumed that no detailed modelling or consideration of this in photomontages or similar will be required.

The LVIA would be prepared with due regard to the following publications:

- The EIA Regulations;
- Guidelines for Landscape and Visual Impact Assessment (GLVIA) Third Edition, Landscape Institute and Institute of Environmental Management and Assessment (2013)⁸; and
- Landscape Character Assessment: The Countryside Agency and Scottish Natural Heritage (SNH) (2002)⁹.

The impacts of the proposed development on landscape and visual amenity receptors will be assessed on the basis of their type, as follows:

- direct, physical impacts affecting the landscape features and character of the Site and local area; and
- indirect and cumulative impacts affecting the visual amenity of the local area from the proposed viewpoints.

The assessment will take into account the sensitivity of the receptor and the magnitude of impact. The assessment of sensitivity of landscape features and viewpoints reflects the relative weight which statute and policy attach to them, principally as published in 'Guidelines for Landscape and Visual Assessment' (GLVIA) and 'Landscape Character Assessment: The Countryside Agency and Scottish Natural Heritage'. The sensitivity of each receptor will be assessed as High, Medium, Low or Negligible.

The magnitude of the impact of a proposed development on landscape and visual amenity can be quantified as High, Medium, Low or Imperceptible, based on the longevity of effect on the resource.

Impact significance will be determined by assessing both the sensitivity, and magnitude of impact. Impact will be defined as either Major, Moderate, Minor or Negligible; Major and Moderate impacts will be classed as "significant"; other impacts will be insignificant.

⁸ Landscape Institute and Institute of Environmental Management and Assessment (IEMA), (2013): Guidelines for Landscape and Visual Impact Assessment (GLVIA), Third Edition.

⁹ Scottish Natural Heritage (SNH) and The Countryside Agency, (2002); Landscape Character Assessment: Guidance for England and Scotland.

Where required, mitigation measures will be set out within the 'Schedule of Mitigation' chapter of the EIA Report and included if necessary within the landscaping proposals which will form part of the proposed development.

4.2 Cultural Heritage and Archaeology

4.2.1 Application Site Information and Potential Impacts

The cultural heritage assessment undertaken as part of the 2006 Winchburgh Masterplan ES identified no listed buildings or scheduled monuments within the current application site. However, a former historic designed landscape (Duntarvie Castle) and a number of archaeological records of local importance were identified.

A preliminary search of the Historic Environment Scotland online database PastMap¹⁰ shows that a number of listed buildings and scheduled monuments are located within 1 km of the site, including:

- Duntarvie Castle: scheduled monument and category A listed building, located immediately north of the site;
- Hopetoun House: Inventory Garden and Designed Landscape (GDL); boundary of GDL located approximately 900 m north of the site; and
- The Union Canal: scheduled monument, located approximately 600 m south-west of the site.

In addition, several Category C Listed Buildings are located within 1 km of the site. There are no Listed Buildings of categories A or B within 1 km of the site.

There are also records of a number of potential cropmark features, in the area to the west and south of Hopetoun Fishery; at the south end of the application site.

4.2.2 Potential Impacts

The proposed development may directly affect archaeological remains (either known from existing records or currently unknown) as a result of disturbance through earthworks and soil removal.

The proposed development has the potential to adversely affect characteristics of heritage assets that are nearby, as a consequence of changes within their setting. Taking account of the nature of the proposed development, the asset most likely to have its setting affected is Duntarvie Castle (in particular assessing views to and from the Castle, the remains of the garden and parkland surrounding the Castle in compliance with Scottish Planning Policy section 137). Other heritage assets with statutory or non-statutory designations within 1km of the proposed development are in locations where their settings are unlikely to be adversely affected. The EIA will therefore be restricted to an assessment of the potential impact on the setting of Duntarvie Castle Scheduled Monument (SM1905) and Category A Listed Building (LB6422).

4.2.3 Approach and Methodology

The assessment will be carried out with reference to the following guidance documents:

- Standard and Guidance for Historic Environment Desk-Based Assessment¹¹ (2014);
- Historic Environment Scotland Policy Statement¹² (HESP) (2016);

¹⁰ Historic Environment Scotland (HES), (2018); Past Map [online]. Available at: <http://pastmap.org.uk/>. (Accessed on 04/05/2018).

¹¹ Chartered Institute for Archaeologists (2014) [updated 2017]: 'Standard and guidance for historic environment desk-based assessment', London

¹² HES, (2016); Historic Environment Scotland Policy Statement (HESPS), June 2016.

- Managing Change in the Historic Environment: Setting¹³ (2016); and
- Planning Advice Note (PAN) 2/2011: Planning and Archaeology¹⁴.

The objectives of the assessment will be to:

- Identify heritage assets present within the proposed development site through desk-based assessment and site visits where appropriate;
- Assess the proposed development site in terms of its archaeological potential;
- Consider the potential effect of the construction of the development on the cultural heritage resource (direct effects and effects on setting); and
- Propose measures, where appropriate, to mitigate any adverse effects.

The approach to the assessment will include the following elements:

- Post-scoping consultations with Historic Environment Scotland (HES) and with West of Scotland Archaeology Service (WoSAS), where appropriate, to clarify any issues arising from scoping opinions and to agree any requirements for mitigation;
- Desktop baseline surveys of all relevant archival resources (HER and HES databases), historic maps, aerial photography, etc.;
- Review of existing Winchburgh Growth Area Assessments;
- Assessment of the heritage importance and therefore sensitivity of each heritage asset identified;
- Identification of heritage assets with statutory and non-statutory designations whose settings could be adversely affected by the proposed development;
- Site visits to assess the potential effects of the proposed development on the settings of heritage assets;
- Assessment of magnitude and significance of effects of the proposed development (direct effects and effects on setting) on heritage assets;
- Assessment of cumulative effects on cultural heritage assets; and
- Recommendations, where appropriate, for mitigation measures and post consent works.

At this stage, no archaeological evaluation works in proximity to Duntarvie Castle or at any other location is proposed. Any identified requirement for archaeological mitigation will be set out in the EIA Report and will be subject to the approval of the Council.

The impacts of the proposed development on cultural heritage will be assessed on the basis of their type, as follows:

- direct, physical impacts affecting the fabric of a site or feature; and
- indirect and cumulative impacts affecting the setting of a site or monument.

The assessment will take into account the sensitivity of the receptor and the magnitude of the impact. The assessment of sensitivity of archaeological and heritage assets will reflect the relative weight which statute and policy attach to them; according to the principles published in SPP and HESP. The sensitivity of each receptor will be assessed as High, Medium, Low or Negligible. Where there are no detectable surface remains and/or where the location and boundaries of a site are uncertain, the importance and, therefore, the sensitivity of the site will be assessed as 'unknown'.

Where required to satisfy any archaeological planning condition placed on the proposed development, mitigation measures will be set out in a Written Scheme of Investigation (WSI)

¹³ HES, (2016): 'Managing Change in the Historic Environment – Setting', Edinburgh

¹⁴ Scottish Government (2011) Planning Advice Note (PAN) 2/2011: Planning and Archaeology, Edinburgh

prepared following post-determination consultations with the Council Archaeologist. The WSI would be subject to the approval of the Council prior to the commencement of any development works.

4.3 Road Drainage and Water Environment

4.3.1 Application Site Information and Potential Impacts/Effects

The Swine Burn is located directly adjacent to the site, flowing west – east under the M9. According to the SEPA flood maps¹⁵, the site is located in a High risk river flooding zone, in respect of water from the Swine Burn. A High risk area corresponds to a likelihood of a flood event once in every ten years (1:10), or a 10% chance of a flood occurring in any one year.

Additional surface water body features within close proximity to the site include the Union Canal, which is located approximately 600m south-west of the site and an unnamed pond is located adjacent to Station Road approximately 2 km west of the site.

Local groundwater bodies comprise the Edinburgh and Livingston bedrock and localised sand and gravel aquifers, which are classified by SEPA as having an overall status of Poor¹⁶ and are located within a Drinking Water Protection Zone. The following pressures are identified as contributing to the overall status: mining and quarrying of oil-shale, livestock farming and other manufacturing.

Possible impacts from the proposed development include both construction and operational impacts. Construction impacts may include:

- increased runoff and silting of surface water bodies, including the Swine Burn, and
- contamination of groundwater and surface water through spills and leaks.

Possible operational impacts may include:

- increased run-off into surface water bodies from the increase in impermeable area (tarmacked road surface). Run-off is likely to be contaminated with particulates and oils/hydrocarbons from vehicle movements, therefore appropriate road side drainage will be required for inclusion in the road design to manage and mitigate these potential impacts; and
- increased flood risk in the surrounding area due to extension of the Swine Burn culvert.

4.3.2 Approach and Methodology

A desk based study will be undertaken. This would include a review of mapped geology, soils and hydrogeology; definition of hydrological regimes for catchments (including the Swine Burn); locations of the proposed development relative to areas at risk of flooding; review of local mapped features; water quality; River Basin Management Plans and identification of water supplies and other water use within the catchments. This review would include work previously undertaken in the area as part of the 2006 Winchburgh Masterplan ES.

During the baseline assessment additional consultation would be conducted with the SEPA regarding the status of draining catchment waterbodies and the locations of any abstraction licences. Consultation will also be carried out with SEPA and WLC with regard to fluvial flood risk data, flood defence assets and flood history. It is assumed that all data with regard to existing flood risks would be acquired from SEPA and WLC, and previous work undertaken for the 2006 Winchburgh Masterplan ES.

A hydrology site walkover survey will be conducted. This will seek to confirm the findings of the desk-based study and to identify any omissions or additional features to be considered in the

¹⁵ SEPA, (2018); Flooding [online]. Available at: <http://map.sepa.org.uk/floodmap/map.htm>. (Accessed on 04/05/2018).

¹⁶ SEPA, (2018); RBMP Interactive Map [online]. Available at: <http://gis.sepa.org.uk/rbmp/>. (Accessed on 04/05/2018).

impact assessment. The site visit will review the local mapped features to ensure that they are hydrologically active, along with a review of existing drainage provision for areas within the site.

The impact assessment will include an assessment of the location of the proposed development with reference to the hydrological constraints, and thus the assessment of the impacts upon the baseline environment through short term construction impacts and long term permanent impacts from the operational phase of the development.

The drainage design is being prepared by the project engineers in accordance with all national and local guidance. Appropriate design and construction mitigation measures, will be suggested to avoid, minimise or remedy any adverse effects and enhance any benefits. It is likely that specific mitigation proposals would be required in response to works to or in close proximity to the Swine Burn. These will be included within the Construction Environmental Management Plan (CEMP) for the Site and works will be undertaken in accordance with best practice and the SEPA PPGs and GPPs¹⁷.

4.4 Ecology and Nature Conservation

4.4.1 Application Site Information and Potential Impacts/Effects

As set out in the ecology assessment undertaken for the 2006 Winchburgh Masterplan ES, the site is surrounded by flat, intensely managed, lowland farmland. Arable fields with hedge and/or fence boundaries predominate. There are a few areas of semi natural grassland along the M9 road verges as well as hedges and areas of semi-natural woodland.

The Swine Burn and its riparian zones are not particularly species rich, but the bankside vegetation increases floral diversity in an otherwise species-poor agricultural landscape.

Badger *Meles meles* and otter *Lutra lutra* are known to occur in the area, along with a number of bat species. Water vole *Arvicola amphibius* and amphibian species also potentially occur. Surveys for great-crested newts *Triturus cristatus* on other parts of the Winchburgh Masterplan site, including surveys in April 2018, have not found the species to be present. However, this species will not be discounted as it is possible that it could still occur within the Site.

Potential impacts include both construction and operational effects. During the construction phase there is the potential for habitat loss through the earthworks phase and vegetation/soil removal. There is also the potential for disturbance and collisions between protected species and traffic as a result of introduced and increased traffic movements (in particular HGV movements).

Potential impacts associated with the operational phase of the proposed development are collisions and potential fatalities of protected species (specifically badgers and otters).

4.4.2 Approach and Methodology

Ramboll undertook an extended Phase 1 habitat survey of the Site in October 2014, which recorded the following:

- trees with potential to support roosting bats;
- vegetation and landforms with potential to provide badger sett locations (no setts identified);
- water courses, water bodies and mire habitats with potential for water vole;
- water courses, water bodies and mire habitats with potential for otter;
- ponds with potential to support amphibian species; and
- potential groundwater dependent terrestrial ecosystems (GWDTE).

¹⁷ See earlier footnote.

The 2014 habitat survey is now out of date and will be updated and supported by the following surveys completed either concurrently with the habitat survey or on subsequent visits:

- Surveys for signs of any protected mammal species, e.g. badger, water vole and otter;
- Habitat suitability index (HSI) evaluation of any bodies of standing water onsite to determine their potential to support great crested newt. In the event that any ponds are identified with potential to support this species, further work would be completed in the form of eDNA testing to determine whether this species is present, and
- Inspection of trees onsite to search for evidence of use by roosting bats.

The ecological impact assessment will be conducted in line with IEEM guidelines¹⁸ and reported in an EIA Report chapter supported by figures and technical appendices as appropriate.

Where significant effects are predicted, appropriate mitigation measures will be clearly set out within the Schedule of Mitigation chapter of the EIA Report. Mitigation measures will be included within the CEMP and where necessary appropriate species protection plans will be implemented during the construction phase of the proposed development.

4.5 Air Quality

4.5.1 Application Site Information and Potential Impacts/Effects

Air quality close to the M9 will be dominated by road traffic emissions associated with traffic using this motorway. Concentrations of nitrogen dioxide (NO₂) decline rapidly away from the roadside with background concentrations reached within 200 m of a source. Fine particulate (PM₁₀) concentrations are less influenced by direct emissions from traffic sources, but these would still be expected to be elevated close to significant road sources compared with background locations.

Whilst traffic using the M9 will be a significant source of air pollutants, given the lack of other sources of air pollutants, air quality in the vicinity of the proposed development would be expected to meet all relevant air quality objectives.

The 2006 Winchburgh Masterplan ES included an assessment of potential impacts on local air quality of the proposed Winchburgh expansion, including a proposed junction on the M9. However, the assessment considered the Winchburgh Masterplan as a whole and did not separately assess the exact locations of slip roads and the proximity of these to sensitive receptors for air quality impacts. In addition, given the number of years since this previous assessment was completed and the change in existing and proposed developments surrounding the Site, it is anticipated that current and future traffic flows on the surrounding road network will differ from those used previously. Therefore, an assessment of the following potential impacts from the proposed development on air quality is proposed.

Impacts from the proposed development include both construction and operational impacts which may arise at sensitive receptors located within 200 m of the proposed development and any affected road as defined by DMRB. A review of existing land uses has suggested that these will be limited to isolated residential properties.

Construction impacts include emissions of dust from construction activities and traffic emissions from construction vehicles.

Operational impacts will be limited to emissions from road traffic using the new junction and any road which is significantly affected.

¹⁸ Chartered Institute of Ecology and Environmental Management (CIEEM), (2016); Guidelines for Ecological Impact Assessment in the UK and Ireland, Second Edition. January 2016.

4.5.2 Approach and Methodology

Given the number of years since the previous air quality assessment was completed for the Winchburgh Masterplan and the change in existing and proposed developments surrounding the site, it is anticipated that current and future traffic flows on the surrounding road network will differ from those assessed previously. Therefore, an assessment of the following potential impacts from the proposed development on air quality is expected to be required, and our proposed scope is as follows:

- Impacts from the proposed development include both construction and operational impacts which may arise at sensitive receptors located within 200 m of the proposed development and any affected road¹⁹ as defined within DMRB. A review of existing land uses has suggested that these will be limited to isolated residential properties;
- Construction impacts include emissions of dust from construction activities and traffic emissions from construction vehicles;
- Operational impacts will be limited to emissions from road traffic (including NO_x, NO₂ and PM₁₀) using the new junction and any road which is significantly affected; and
- A desk based study would be undertaken to update the baseline data collected as part of the original 2006 Winchburgh Masterplan ES.

During the baseline assessment additional consultation will be conducted with SEPA and WLC to discuss and agree the scope of the assessment. It is assumed that no additional site-specific air quality monitoring will be required, but this will be agreed as part of the consultation exercise.

An air quality assessment utilising air dispersion modelling (ADMS) techniques will be prepared to support the application providing full details of the methodology followed, data sources used and the results and conclusion of the assessment. Supporting documentation (modelling results and dispersion mapping) will be provided in a suitable format for inclusion in a technical annex to the EIA Report chapter.

Impacts during the construction phase will be assessed following the Institute of Air Quality Management Guidance²⁰.

To assess impacts from the operational phase, the assessment will follow the methodology provided by the Department for Transport's 'Design Manual for Roads and Bridges' (DMRB) and Scottish Transport Analysis Guidance (STAG) to demonstrate the impact of the interchange on air quality. The change in air quality as a result of the proposed development will be predicted using the ADMS Roads model and the results compared to relevant Air Quality Objectives.

In addition, where there are identified sensitive receptors within 200 m of the proposals including residential properties or designated ecological habitats the significance of effects will be assessed using the Environmental Protection UK/Institute of Air Quality Management's significance criteria²¹.

¹⁹ Affected routes are defined as the existing route, the new route (if the option provides one), and any other local routes on which traffic flow changes are considered to be significant.

²⁰ Institute of Air Quality Management (IAQM), (2014); Guidance on the assessment of dust from demolition and construction. V1.1. February 2014.

²¹ Environmental Protection UK (EPUK) and IAQM, (2017); Land-Use Planning & Development Control: Planning For Air Quality – Guidance from Environmental Protection UK and the Institute of Air Quality Management for the consideration of air quality within the land-use planning and development control processes. January 2017.

4.6 Noise

4.6.1 Application Site Information and Potential Impacts/Effects

The noise environment close to the M9 will be dominated by road traffic noise associated with traffic using this motorway.

The noise assessment completed as part of the 2006 Winchburgh Masterplan ES was undertaken on an outline basis, using traffic data generated as part of the development of the Winchburgh Masterplan, coupled to on-site measurement data. This previous noise assessment considered the relative change in noise generation at source and not the impacts at individual receptors nor the likely number of receptors affected. For the detailed application for the proposed development, the noise assessment will consider the wider reaching, potential implications of the proposed development for receptors.

Possible impacts from the proposed development will comprise both construction and operational impacts which may arise at a number of noise sensitive receptors (individual dwellings) in the surrounding area. The assessment will include consideration of the type of surfacing materials to be used for the roads, and it is acknowledged that the surfacing material may represent a means to mitigate some of the impacts associated with operational noise²².

The noise assessment will seek to identify whether significant effects are likely to arise on the noise environment associated with both the construction and operational phases of the proposed development.

4.6.2 Approach and Methodology

As a detailed assessment is required as part of the EIA, it is anticipated that what would be required is as follows:

- a baseline noise survey at locations representative of the residential receptors in proximity to the proposed scheme, those that may not be currently dominated by road traffic noise, in order to enable the comparison with the future predicted noise levels. The survey will consist of a series of attended measurements during daytime. The measurements would be carried out by a consultant certified as competent in environmental noise measurement, using instrumentation conforming to Type 1 specification, as set out in BS EN 61672: 2013²³ 'Electroacoustics Sound level meters. Part 1 Specifications' and in accordance with the principles of BS 7445: 2003²⁴ 'Description and measurement of environmental noise';
- a detailed noise model of the area would be constructed, covering up to 600-metre radius from the proposed development, considering the predicted road traffic noise levels for the base, opening and design years of the proposed development;
- a series of noise contour plots would be produced, articulating the predicted changes in received road traffic noise across the area, in accordance with the DMRB procedures, which would also provide an appropriate baseline for the assessment of any future claims for land compensation;
- an assessment of noise impacts would be undertaken in accordance with the Design Manual for Roads and Bridges (DMRB) Simple Assessment Method, as set out in HD213/11;

²² It is noted that Transport Scotland's material of choice for surface course specification is TS2010 (comprising of a range of Stone Mastic Asphalt mixtures), which provides low noise levels, 'excellent' ride quality and 'superior' durability

²³ British Standards Institution (BSI), (2013); BS EN 61672-1:2013 – Electroacoustics. Sound level meters. Specifications. December 2013.

²⁴ BSI, (2003); BS 7445-1:2003 – Description and measurement of environmental noise. Guide to quantities and procedures. December 2003.

- provide commentary level assessment to identify potential eligibility under the Noise Insulation (Amendment) Regulations 1988 (NIR) based on the results of the DMRB assessment, in order to determine whether any properties would qualify for a grant of noise insulation as a result of predicted changes in received levels of road traffic noise;
- the impact of construction noise and vibration associated with the proposed development would be predicted and assessed, in accordance with BS 5228: 2009²⁵ 'Code of practice for noise and vibration control on construction and open sites';
- potential mitigation measures will be proposed and quantified where required; and
- A technical EIA Report chapter would be produced, including all supporting figures and appendices (modelling results and noise contour mapping).

²⁵ BSi, (2008); BS 5228-1:2009+A1:2014 – Code of practice for noise and vibration control on construction and open sites. Noise. December 2008.

5. POTENTIAL NON-SIGNIFICANT ENVIRONMENTAL IMPACTS AND LIKELY EFFECTS

The following technical topics are proposed to be 'scoped out' of the EIA as these are unlikely to result in significant impacts arising from the proposed development. However, where relevant, these topics will be drawn upon in the 'Proposed Development Description' and 'Site Selection and Alternatives' EIA Report chapters to provide supporting commentary on how the proposed development was designed to minimise such impacts arising.

5.1 Climate Change and Greenhouse Gases (GHGs)

In the context of the EIA process climate change is considered both in relation to the contribution of the proposed development to increasing or decreasing gaseous emissions with global warming potential (GWP), and in relation to climate change adaptation.

Emissions associated with the proposed development will be limited to temporary and short-term emissions of exhaust gases from vehicles and construction plant, and the potential for the release of carbon dioxide as a result of dewatering and exposing peat and peat soils during construction. Neither source is considered likely to be significant in terms of GWP.

With regard to climate adaptation no potential for significant impacts have been identified.

The proposed development would not result in significant adverse effects on air quality (i.e. GHGs) or climate change during the construction or operational phases. The proposed development would contribute to connecting renewable electricity generation capacity to the transmission network, in turn displacing emissions associated with fossil fuel based electricity generation elsewhere. As such, this issue is scoped out of the EIA and no assessment of air quality and climate change is proposed as part of the EIA Report.

5.2 Major Accidents and Disasters

The EIA regulations require the consideration of the potential risks to human health, cultural heritage or the environment associated with the vulnerability of the proposed development to accidents and disasters. This requirement is interpreted as requiring the consideration of low likelihood/ high consequence events which would result in serious harm or damage to environmental receptors.

Relevant types of accident/disaster, given the predominantly rural context of the proposed development, include:

- severe weather events, including high winds, high rainfall leading to flooding, or extreme cold leading to heavy snow and ice loading;
- wild fire;
- traffic related accidents; and
- mass movement associated with ground instability.

Severe weather resilience is a core component to the network design, and includes consideration of flooding resilience, overhead line design and vegetation management to reduce the risk of unplanned power cuts.

In the event of an unplanned power cut, significant effects are considered unlikely. Effects are likely to be short term and essential services e.g. medical facilities, are likely to have some form of backup generation.

Potential significant effects on human health, cultural heritage or the environment associated with the vulnerability of the proposed development to accidents and disasters will therefore be scoped out of the EIA.

5.3 Human Health and Well-being

The proposed development would be located within a predominantly rural area with a small number of residential properties located in the surrounding area. Given the nature of the proposed development, i.e. the extension of an already existing road network (the M9), the proposed development is unlikely to cause any significant impacts on human health and well-being.

5.4 Geology and Soils

The proposed development is not located within any geologically designated or sensitive sites. However, the proposed development has the potential to give rise to some small scale local impacts on geology and soils during the construction phase of development through the earthworks process. Construction phase impacts can include the removal and disruption of local soils. Soils on the Site include poorly drained and freely drained forest soils. These soils are underlain by sedimentary sandstones, siltstones and limestones of the sedimentary West Lothian Oil Shale Formation. According to the BGS website, glacial till ("diamicton") lies to west of the underpass, and again to the east after the M9 crosses Swine Burn and long before it reaches the railway line. Lacustrine (lake) deposits, and covers most of the area east of the underpass. Soils on the site are not locally or regionally important and the potential quantities of soil to be removed are likely to be relatively small therefore removal or disturbance would not have a potentially significant effect and does not require detailed assessment in the EIA. Management of soils will be addressed in the CEMP.

5.5 Vehicle Travellers

When considering significant effects of the proposed development upon Vehicle Travellers, views from the road and driver stress should be considered. The proposed development comprises an additional slip road to join the existing M9 motorway, it can therefore be assumed that there will be no potential significant effects upon vehicle travellers as a result of the proposed development. Although this is proposed to be scoped out of the EIA Report, the description of the proposed development and design evolution will include commentary on how the potential for adverse impacts such on vehicle travellers were designed out as far as possible. Furthermore, the Transport Assessment (TA), which will accompany the application, will provide commentary of how the addition of the new slip road will affect vehicle travellers.

5.6 Pedestrians & Others (Cyclists, Equestrians and Community Effects)

The existing B8020 (including the M9 underpass) is currently used by cyclists, pedestrians and equestrians.

The users of the B8020 and their needs are being taken into account in the design of the proposed development and the provisions incorporated into the design will be documented in the EIA Report. However, no potential for a significant impact on these users has been identified and thus there is no requirement for a detailed assessment of potential impacts as part of the EIA. As with vehicle travellers, areas of this will be provided within the EIA Report's description of the proposed development and design evolution.

6. CONCLUSION

6.1 Next Steps

This report is issued to Transport in support of a request for a 'Scoping Opinion'.

In forming its opinion, Transport Scotland will seek the views of various organisations with an interest in the proposed development, inviting comments on the proposed scope of and approach to the EIA proposed herein.

Unless specifically requested, all comments received will be collated and presented in the EIA Report, as a record of the results of the scoping exercise. All responses, those marked confidential and those not, will be addressed in the course of the EIA process.

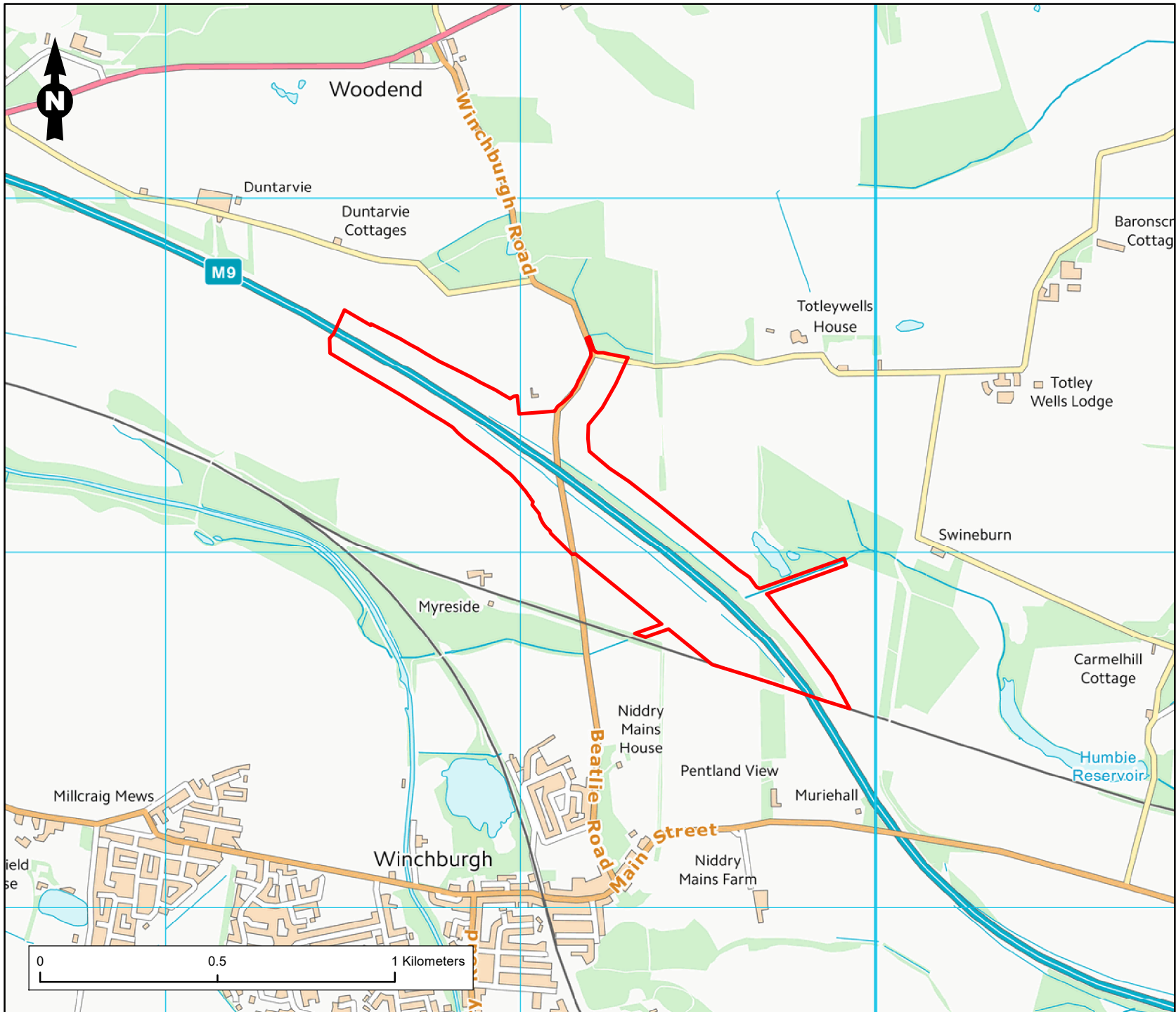
6.2 Structure of the EIA Report

The EIA Report will address the requirements of the EIA Regulations. The preliminary structure and content of the EIA Report is as follows:

- Volume 1: Non-Technical Summary;
- Volume 2: Main EIA Report;
 - Introduction;
 - Proposed Development Description;
 - Site Selection and Alternatives;
 - Landscape and Visual Amenity (LVIA);
 - Cultural Heritage and Archaeology;
 - Road Drainage and the Water Environment;
 - Ecology and Nature Conservation;
 - Air Quality;
 - Noise;
 - Schedule of Mitigation; and
- Volume 3: Technical Appendices.

Following review of the emerging proposed development it is not deemed necessary to undertake a full EIA and produce EIA Report chapters for: vibration; climate change and GHGs; major accidents and disasters; human health and well-being; geology and soils; vehicle travellers; and pedestrians and others (cyclists, equestrians and community effects).

APPENDIX 1 APPLICATION SITE BOUNDARY



Legend

 Red Line Boundary

Figure Title
Figure 1: Red Line Boundary

Project Name
Winchburgh M9 Junction

Project Number 1700001963	Figure No. 1
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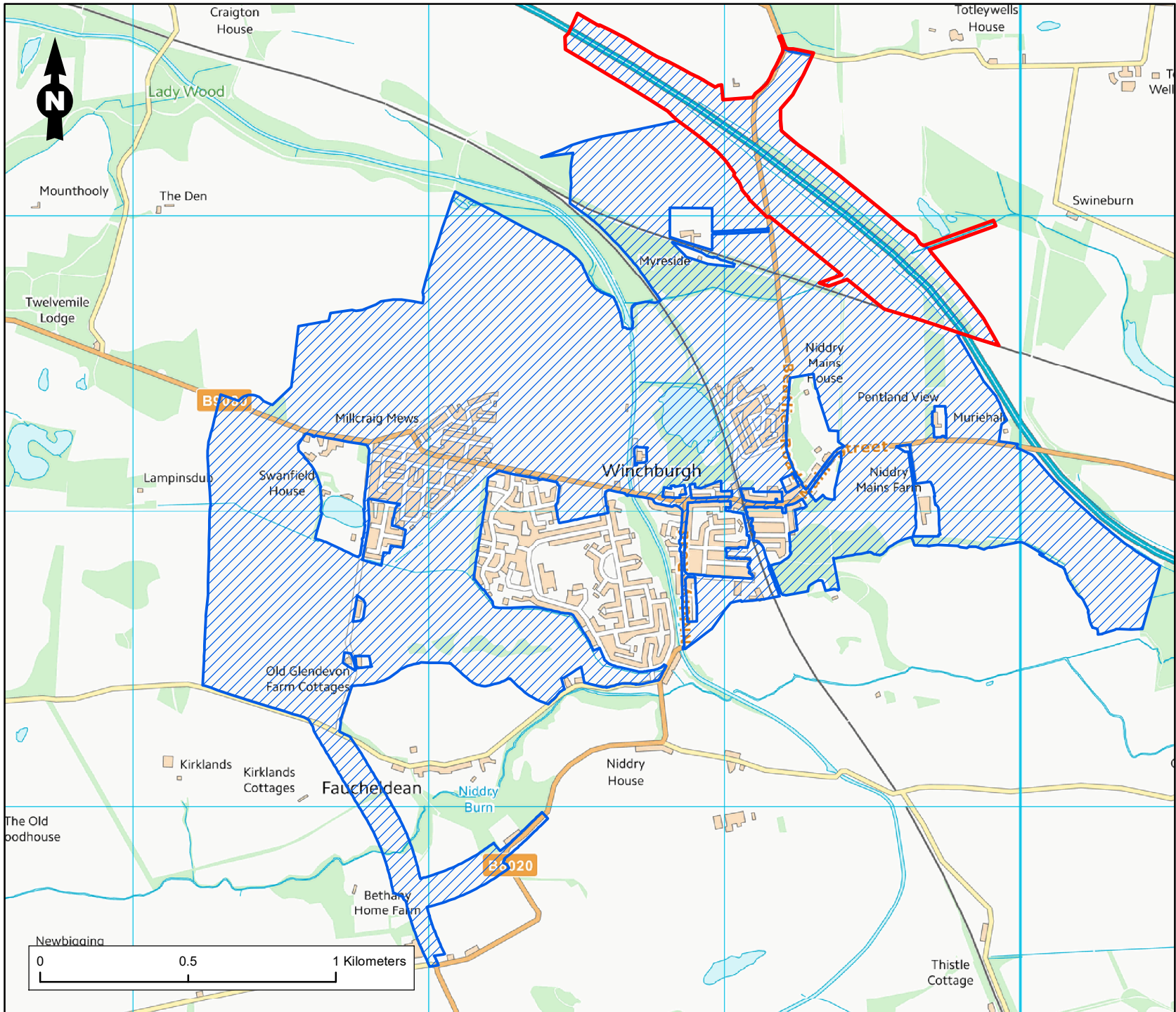
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Client
Winchburgh Developments Ltd



APPENDIX 2 WINCHBURGH MASTERPLAN BOUNDARY



Legend



-  Red Line Boundary
-  Masterplan Boundary

Figure Title	
Figure 2: Masterplan Area	
Project Name	
Winchburgh M9 Junction	
Project Number	Figure No.
1700001963	2
Date	Prepared By
June 2018	ZO
Scale	Issue
1:18,000 @A4	1
Client	
Winchburgh Developments Ltd	

