

Appendix 4 – Assessment Methods

Appendix 4.1 – West Riverside and Woodbank House EIA Scoping Opinion

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LOCH LOMOND & THE TROSSACHS NATIONAL PARK



11 May 2017

Dear Sirs

ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2011 SCOPING OPINION

Reference Number: PSC/2017/0002

Proposal: EIA Scoping for erection of hotel and holiday lodge accommodation; controlled camping areas; leisure and recreational facilities; education and visitor interpretation facilities; hot food café / restaurant uses; transport infrastructure; public realm enhancements including footpaths and cycleways; viewing platform(s); ancillary uses; landscaping and site development infrastructure including drainage and potential flood mitigation measures, SUDS measures, water supply, utilities etc. Works to listed building.

Location: West Riverside And Woodbank House
Balloch

The purpose of this Opinion is to outline the key issues that are considered relevant to the proposal and to advise on the matters to be covered in the Environmental Statement.

It is not intended to be comprehensive, as the EIA process may well uncover as yet unidentified significant environmental issues and potential impacts.

For your information consultations in relation to the scoping request were received from the following consultees:

- Scottish Natural Heritage (SNH)
- Scottish Environmental Protection Agency (SEPA)
- Petroineos
- Transport Scotland
- West of Scotland Archaeology Service (WOSAS)
- Historic Environment Scotland (HES)
- West Dunbartonshire Council Environmental Health
- West Dunbartonshire Council Roads Service
- NP Natural Heritage Planning Officer
- NP Landscape Adviser
- NP Woodland Adviser
- NP Recreation and Access Adviser

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The Health and Safety Executive, Scottish Government Environmental Assessments and Transport Scotland do not routinely respond to EIA scoping consultations however they will be consulted on the future planning application for the site. Transport Scotland did however offer informal pre-application advice. This advice is noted in section 3.8.2 – 3.85 below.

I have attached copies of the responses received from SNH, SEPA, Petroineos, WOSAS and HES which should be read in conjunction with this advice.

Scoping consultation responses from West Dunbartonshire Council Flood Risk Management Team, the Civil Aviation Authority, and Scottish Water remain outstanding. These will be forwarded on separately once received.

Schedule 4 from the EIA regulations sets out what information is to be included in an Environmental Statement. I have included details of this within Appendix 1.

1 DESCRIPTION OF THE DEVELOPMENT

1.1 The proposal is for Planning Permission in Principle for a mixed use tourism and leisure development. The components would include:

- hotel and holiday lodge accommodation;
- controlled camping areas;
- leisure and recreational facilities;
- education and visitor interpretation facilities;
- hot food café/restaurant uses;
- transport infrastructure;
- public realm enhancements including footpaths and cycleways;
- viewing platform(s);
- ancillary uses;
- landscaping and site development infrastructure including drainage and potential flood mitigation measures, SUDS measures, water supply and utilities;
- works to listed building

2 ENVIRONMENTAL STATEMENT STRUCTURE/SECTIONS

2.1 The contents page of the EIA Scoping Report sets out the topics the ES will cover – namely, ecology; noise and vibration; air quality; ground conditions and geology; water, hydrology and flood risk; landscape and visual impact; traffic and transport; archaeology and cultural heritage; socio economics, tourism and recreation.

2.2 It is advised that Trees and Woodlands considerations should be assigned its own section rather than being incorporated into the ecology section.

2.3 It is recommended that 'Access' is explicitly stated in the topic heading 'Socio-economics, Tourism and Recreation' for ease of reference or pulled out into its own section.

2.4 The ES should assess the nature of the above noted impacts and set out mitigation measures required:

- **Description of the Environmental Impacts** - What will be the impacts of the development on the environment?

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- **Analysis of the Environmental Impact, including methodologies** - How will you quantify and what methodologies will be used to assess the environmental impacts?
- **Description of methods to offset adverse environmental effects – Mitigation Measures** - What will you do to offset adverse environmental effects?

2.5 It is recognised that the planning application will be for Planning Permission in Principle however the effects that a proposal may have on the environment must be identified and assessed at the time of the principle decision. In the event that those effects are not identified or identifiable at the time of the principle decision, further assessment must be undertaken at the subsequent stage. It is, however, recommended that the extent of survey work carried out at this stage is as comprehensive as possible to identify all potential effects at principle stage.

3 ENVIRONMENTAL TOPIC AREAS

3.1 Ecology

The Environmental Statement should show that the applicant has appropriately considered and will adhere to relevant wildlife legislation and guidance. The surveys should be included within the Environmental Statement and include a summarised page. Fiona Stewart, the National Park Natural Heritage Planning Officer has visited the site and provided the advice below on the content of the scoping report. It is recommended that contact is made with Fiona prior to the carrying out of any surveys to ensure that they are fit for purpose and proportionate. Please note that Julie Gray, as planning case officer, should always be copied in on any direct email communication with NP advisors.

3.1.1 Habitat

- An extended phase 1 survey with target notes for protected species and any plants/trees of note.
- Bluebells are protected by the Wildlife and Countryside Act 1981; bluebell areas should be target noted on maps.
- All non-native species should also be target noted.
- All proposed development should be overlain on an NVC map (note SEPA comments in section 3.1.6) and aerial photograph with pull out photographs where appropriate to assist with micrositeing.

3.1.2 Protected Species

- The extended phase 1 survey noted above will provide information on what protected species surveys will be required. A walkover survey should also be carried out and this will influence the level of detail required (if there is a requirement for further protected species surveys).
- Otters – The loch edge has been surveyed many times for otter and Fiona is not aware of otters utilising Loch Lomond at the location of the development. They are however in the vicinity, for example further north on the west side of Loch Lomond. The results of the extended phase 1 survey and walkover survey will determine the requirement for an otter survey to be undertaken.
- Bats – The section relative to bats in the ES should be clearly titled ‘Bats’; the scoping report title for the bat section is currently noted as ‘Notable Fauna Surveys’. The methodology proposed in the scoping report is acceptable however it should be noted

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that further surveys, (emergent survey) will be required for those buildings and trees (which are identified as having bat potential features) that are to be demolished/felled or altered. It is recognised that this level of detail, relative to which buildings or trees are proposed to be removed, may not be available at PPP stage but it will be necessary to determine bat conservation status prior to a planning decision being made.

- Badgers – Several mammal holes are throughout Drumkinnon Wood indicating that it has had a substantial badger sett. However it is not thought to be in use at present. For the avoidance of doubt a protected species survey should be carried out taking particular note of the areas which may have been used by badgers previously. Again, it is recommended that Fiona Stewart, NP Natural Heritage Planning Officer, be contacted for further information on this.
- Watervole, Red Squirrel, Pine Marten – Methodology is acceptable however the walkover survey will influence the level of detail required in further survey work and also where further survey work will not be required.

3.1.3 In line with the casework agreement between the Loch Lomond and the Trossachs National Park Authority and SNH, SNH advises the National Park on implications for Natura sites, SSSI's and protected species only. Advice in relation to impacts on landscape interests within the National Park (see point 3.7 of this response), non-designated natural heritage interests and outdoor access issues are determined by the LLTNPA.

3.1.4 SNH have advised that the surveys proposed in section 4.3 of the Scoping Report are suitable.

3.1.5 Designated Sites

SNH have advised that based on the distance between the proposed development site and designated sites, and the habitat and location of the proposed development site, it is agreed that it is unlikely that there will be any direct impacts on their protected features resulting from the development. However, the sites should be considered with regard to potential indirect impacts, for example resulting from increased visitor numbers to the area.

Please note, the Loch Lomond SAC on Creinch Island is approximately 6.3km north of the site rather than 2.6km as stated in the Scoping Report.

3.1.6 SEPA reviewed the Scoping Report submitted and made the following comments in relation to ecological issues:

- The guidance [A Functional Wetland Typology for Scotland](#), should be used to help identify all wetland areas; National Vegetation Classification (NVC) should be completed for any wetlands identified. The results should be submitted, including a map with all proposed infrastructure overlain on the vegetation maps.

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- The results of the NVC survey should be used to identify if wetlands are groundwater dependent terrestrial ecosystems (GWDTE's).
- The route of roads, tracks or trenches within 100m of GWDTE's should be considered as well as structures/foundations within 250m of such ecosystems.
- For areas where avoidance is impossible, details of how impacts upon wetlands are minimised and mitigated should be provided within the ES or planning submission.
- Minimal details are provided in respect of excavations to be carried out; in this regard it is recommended that the applicant takes cognisance of SEPA guidance (LUPS-GU31-Land Use Planning System SEPA Guidance). If excavations are close to the site boundary, a buffer zone (100 or 250m) to sensitive habitats might fall outwith the site, in which case any vegetation survey will need to include these buffer zones.

3.2 Trees and Woodland

The National Park Woodland Adviser has advised that the following additional information and assessment should be included within the ES:

- The vegetation survey should include the assessment of the species considered ancient woodland indicators, in order to assess the quality of the woodland (in relation to the woodland being recorded on the Ancient Woodland Inventory and Native Woodland Survey of Scotland).
- Any proposed loss of woodland should be assessed with respect to the Scottish Government Control of Woodland Removal Policy.
- Should the Control of Woodland Removal Policy be applicable then proposals for compensatory planting within the NP should be outlined and demonstrated as viable.
- Given the proposal potentially affects a significant area of periurban woodland, which has the capacity to support a population of roe deer, the existing population should be assessed and proposals to mitigate any impact on this population (if present) should be provided.
- The location of the proposals forms a core area of Forest Habitat Network (source - Forestry Commission Scotland 2017). The EIA should also include an assessment of potential impact on this Habitat Network.

3.3 Noise and Vibration

West Dunbartonshire Council Environmental Health Section note the potential for the proposed development to affect noise sensitive receptors and for existing noise sources to affect any new residential development. The methodology discussed in the scoping report for assessing noise and vibration is noted and the Council Service would expect early discussions with the consultant on this and monitoring locations agreed.

3.4 Air Quality

West Dunbartonshire Council Environmental Health Section note the potential for the proposed development to affect air quality within Balloch and the surrounding area and recommend early discussion with the Service with respect to the methodology chosen for the assessment.

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3.5 Ground Conditions and Geology

- 3.5.1 West Dunbartonshire Council Environmental Health Section has stated that there are areas of potentially contaminated land across the proposed site. Early discussion with the Service, in particular the Contaminated Land Officer, is recommended with regard to historic uses of the site, methodology and suitability of site investigation to ensure survey work meets the Services requirements as regulator.
- 3.5.2 Petroineos were consulted on the Scoping Report with regards to the two high pressure pipelines which run through the site. A copy of the response is attached and highlights some points in relation to the description of the pipelines within the Scoping Report. They do not require any further information to be included within the ES regarding the pipelines and they will be consulted on any future planning application on the site. It is, however, worth noting that any excavations should be clearly shown on a map relative to the existing infrastructure (pipelines) on site.

3.6 Water, Hydrology and Flood Risk

SEPA have provided further advice relative to flood risk, waste water drainage, surface water drainage, pollution prevention and environmental management, engineering activities in the water environment, existing groundwater abstractions and water abstraction within their consultation response which should be read in conjunction with this letter. A summary of the advice is provided below.

3.6.1 Flood risk

A relatively small part of the site is at medium-high risk of river flooding. A couple of minor watercourses also flow through or in proximity to the site which also potentially represent a flood risk. Parts of the site also lie within the low or medium risk probability extent of the surface water hazard map. It is recommended that contact is made with West Dunbartonshire Council Flood Prevention Officer to discuss this issue.

SEPA are fully in agreement with the proposal to undertake a Flood Risk Assessment and would be fully supportive of the key flood management strategy being proposed which is the avoidance principle.

3.6.2 Waste water drainage

Details of the waste water provision for the development should be provided in the ES including options for waste water treatment facilities. Waste water should be directed to the public sewerage system. If the system has insufficient capacity, early dialogue with Scottish Water will be required.

3.6.3 Surface water drainage

The treatment of surface water runoff by sustainable drainage systems (SUDS) is a legal requirement for most forms of development.

It is important to ensure that adequate space to incorporate SUDS is incorporated within the site layout. Best practice requires large mixed use development of this type to have two levels of treatment for surface water runoff.

3.6.4 Pollution prevention and environmental management

The applicant should, through the EIA process, systematically identify all aspects of site work that might impact upon the environment, potential pollution risks and identify the principles of preventative measures and mitigation. A draft Schedule of Mitigation should be produced as part of this process.

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A Construction Environmental Management Document is a key management tool to implement the Schedule of Mitigation. The principles of this document should be set out in the ES outlining how the draft Schedule of Mitigation will be implemented.

3.6.5 Engineering activities in the water environment

A site survey of existing water features and a map of the location of all proposed engineering activities in the water environment should be included in the ES.

Where developments cover a large area, there will usually be opportunities to incorporate improvements in the water environment required by the Water Framework Directive within or immediately adjacent to the site either as part of mitigation measures for proposed works or as compensation for environmental impact.

3.6.6 Existing groundwater abstractions

A list of groundwater abstractions both within and outwith the site boundary, with a radius of i) 100m from roads, tracks and trenches and ii) 250m from borrow pits and foundations should be provided. If ground water abstractions are identified within this radii, the route or location of engineering works should avoid this area or further investigation will be required to show that impacts on abstraction are acceptable.

3.6.7 Water abstraction

Where water abstraction is proposed, the ES or planning submission should detail if a private or public source will be used. Further information will be required if a private source is to be used.

3.7 Landscape and Visual

SNH no longer provide advice to the National Park Authority on landscape as the National Park has its own Landscape Adviser.

The NP Landscape Adviser recommends that a Full Landscape and Visual Impact Assessment (LVIA) should be prepared by a Landscape Architect in accordance with Guidance for Landscape and Visual Impact Assessments (3rd Edition, 2013): <http://www.snh.gov.uk/protecting-scotlands-nature/looking-after-landscapes/tools-and-techniques/landscape-visual/> and should include the following:

- a) the planning and legal context including published policies on landscape designation and landscape character areas.

The Scoping Report references relevant policies in the Loch Lomond and The Trossachs (LLTNP) Local Development Plan, LLTNP National Park Partnership Plan and the SNH LCA.

Reference should also be made to the following additional documents;

- Special Landscape Qualities of Loch Lomond and The Trossachs National Park (2010) http://www.snh.org.uk/pdfs/publications/commissioned_reports/376.pdf

This report covers Loch Lomond and the Trossachs National Park as a whole and is considered on a par with a National Scenic Area. Therefore the assessments and judgements in the LVIA should be made accordingly.

The Scoping Report references the NSA in paragraphs 9.3.11, 9.5.2, 9.5.3 and 9.7.1. We note the whole Park is acknowledged as sensitive in 9.5.4.

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- Landscape Character Assessment SNH Review (2015).
The applicant should refer to the completed Review Descriptions work for LLTNP and draft mapping which is available from SNH prior to publication on their website in late 2017. This work includes landscape character type rationalisation and in particular the south end of Loch Lomond as Loch Lomond basin LCT. The SNH review will include standardising the LCA "background chapter" information, on geology, climate, human settlement, etc. at a later date than the LCT descriptions. In the meantime this background can be usefully found in the current LLTNP LCA SNH 2009 and the State of the Park Report (2005).

b) a description of the methodologies and techniques used in the assessment, including measures and criteria of impacts and thresholds of significance.

- A study area of 20km would seem reasonable to understand any potential wider impacts of the proposals on the experience of the south Loch Lomond basin given that there is an assumption of the inclusion of key structures within the proposed development.
- Draft ZTV's, one of bare ground and a second with screening of woodland cover, have been prepared using proposed roof lines and one point for a proposed tower of 100m height. The Scoping Report suggests that the main landscape and visual receptors will be confined to a corridor to the north of the site. It is however noted that site visits will be undertaken to test this and refine the study area. The ZTV's may require to be rerun and further confirm angles of view should the location of key structures become more defined and as any adjustments are incorporated.
- LLTNP Landscape Adviser will work with the applicant on the final list of viewpoints to be used for landscape and visual receptors. Please refer to the draft list of receptors below.

c) Special Landscape Qualities – Assessment of Landscape Experience

An assessment of how the Special Landscape Qualities are experienced should be carried out as part of the LVIA to understand the experience of the landscape. This assessment should feed in to the understanding of the landscape character and visual resource and the likely effects of the development. A narrative describing the relationship between people and the landscapes of the southern Park gateway should extend the LVIA to inform both the mitigation and the likelihood and risk of effects.

The Special Landscape Qualities likely to be affected by the proposals are the Park's General Qualities and the area based qualities of Loch Lomond.

The assessment should identify the patterns of visibility and combinations of special landscape qualities and be presented in a table with supportive narrative.

- Sequential Travelling Assessment – In addition, the above assessment should be informed by assessing how people move through the landscape using the many routes that criss cross the Lowland Loch basin and use a series of defined viewpoints to be agreed with LLTNP Landscape Adviser.

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- Landscape Character - the applicant has identified the two Landscape character types (LCTs) on which the proposals are located and on which direct impacts will occur. Further Landscape Character types in the study area should include (LCA review 2015); Lowland Loch Basin, Loch Lomond Islands, Highland Summits and Steep Ridgeland and Hills and Parallel Ridges.
 - Sensitivity to change – the acknowledgement in point 9.3.14 is noted that sensitivity to change should always be determined by on site specific conditions. In addition the context of the National Park and the varied gateways and 'scenic routes' to, from and within it means sensitivity to change will be higher for several receptors.(Refer Special Landscape Qualities and Sequential Travelling Assessment)
 - Magnitude of effects – the intention to consider the change in visual extent is noted in point 9.3.15. All analysis and judgements should be well supported in the narrative text and supported by tables and matrices.
 - Significance of effects –the example cited regarding small changes to part of a view is noted. All analysis and judgements made should be well argued in the narrative text to make clear what the significant issues and effects are and supported by tables and matrices.
- d) Consideration of alternatives and options, and if there are no alternative options, provide justification. This should include the rationale for the overall design and layout of the entire site and the many interdependent elements proposed within it. The wider landscape context should be considered as part of the survey and analysis of the sensitivities, constraints and opportunities. Specifically the proposed inclusion of buildings of large scale and height in the overall masterplan and their potential impact on the wider landscape experience of the south Loch Lomond basin should be considered.
- e) Details of the proposal (all aspects), including all stages of the project life cycle.

The Scoping Report submitted includes Draft Chapter 3 with a list of the proposed elements or aspects of the proposal. It is understood that modifications will be made to this and that some elements will not necessarily be included.

- f) An assessment of all the key elements giving rise to effects on the landscape and visual resource

The LVIA should cross reference with other sections of the ES where relevant and in particular the proposed Chapter 3 on the development proposal to assist the prediction of landscape and visual effects.

- g) Baseline information on the landscape and visual resource, including description, classification, and evaluation.
- Special Qualities and Special Landscape Qualities of Loch Lomond and The Trossachs National Park (LLTNP)
 - Landscape Character Assessment including:

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- Landscape Character Types
- Local landscape character - localised detailed study. This will assess the local amenity in landscape and visual terms and define the key elements, characteristics and character within the project area. (see above background information)
- Cultural heritage

Refer to the following Loch Lomond and the Trossachs National Park Reports:

- *The Special Qualities of the LLTNP 2005* (Loch Lomond North):
- *The Special Landscape Qualities of LLTNP 2010*:
- *SNH Landscape Character Assessment Loch Lomond and the Trossachs National Park 2009*
- *Historic Scotland - Inventory of Gardens and Designed landscapes*.
- *LLTNP Historic Designed Landscapes Project 2012 – Summary Report*
- *LLTNP Relative Wildness Study 2010*.

h) Baseline assessment of the landscape and recreational experience

Interpreting visitor management figures and evidence available will assist in the assessment of landscape value and recreational experience. Cross referenced with the likelihood of effects and risks on the Special Landscape Qualities assessment and how the landscape is experienced by people.

- Refer to the following Loch Lomond and the Trossachs National Park Reports *Valuing the Park A Summary of Tourism Data (2011)*
- Request current visitor survey information and figures from LLTNP access team. This information will assist in the assessment of landscape value and recreational experience.
- Assessment of existing and former heritage sites

i) Identification of all of the potential landscape and visual impacts identified, with the predicted magnitude of impacts and significance,

It is noted in the Scoping Report, point 9.5.15, that only locations where the ZTV indicates there will be potential views will be included for assessment and that this work indicates very limited extent of visibility. This will require to be borne out by the site visit (Scoping Report point 9.3.11) and consultation with LLTNP.

j) Likely Landscape and Visual receptors

The range of possible landscape and people receptors is noted; Residential, Business, Community Facilities, Leisure and Recreation and Transport listed in points 9.5.18 – 9.5.29 of the Scoping Report.

The recognition of the importance of location and views to some business and tourism receptors in 9.5.25 is noted and welcomed. All relevant receptors should be identified

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and the effects on the Special Landscape Qualities, landscape and visual resource expanded upon in the narrative and well argued in the assessments.

Not all the residential properties listed in the scoping letter are within the National Park boundary and would not require assessment.

The following list is representative of the potential landscape and visual receptors and is not a definitive list. It is recommended that your Landscape Architect selects and provides grid references and direction of views for representative, illustrative and specific viewpoints in **consultation with the NPA Landscape Advisor.**

○ **Landscape – West Riverside**

- Munros/Hill summits : Ben Lomond, Luss Hills, Ben Dubh, Ben Bowie.
- Hills/Islands: Shantron Hill, Duncryne, Conic Hill, Gualann, Dumgoyne, Goukhill, Inchmurrin, Inchcailloch, Whinney Hill, Loch Lomond Islands
- Lochs/Rivers: Loch Lomond, River Leven, Drumkinnon Bay.
- Woodlands: Drumkinnon Woods west and east, River Leven Riparian woodlands
- Designed Landscapes; Balloch Country Park, Cameron House, Rosdhu, Luss, Midross, Auchindennan House, Arden, Boturich.

○ **Landscape - Woodbank House**

- Designed Landscapes: Woodbank House, Cameron House
- Woodlands – Old Luss Road, Loch Lomond Shores

Visual – West Riverside

Roads/tracks/footpaths/boat routes to include an agreed series of defined viewpoints for sequential travelling assessment :

- Old Luss Road travelling north and south, Woodbank House entrance, Duck Bay and Luss.
- A82 travelling north from Dumbarton and StoneyMollan – long views to Ben Lomond, travelling south – key viewpoints and laybys between Firkin, Luss and Balloch.
- A811 travelling west ; key viewpoints between Gartocharn and Balloch.
- A81 travelling south looking west at Drymen Bridge.
- Balloch Main street – McDonalds roundabout, Pier Road, Moss O Balloch, train station, bus station, Carrochan Road and Mollanbowie Road
- East Loch Lomond B837 – key views between Balmaha and Rowardennan.
- West Highland Way – key viewpoints between Drymen and Rowardennan including Garadhban, Conic Hill and Ross Wood.
- John Muir Way / Three Lochs Way – key viewpoints at Whinney Hill, Balloch Country Park, Ben Lomond Way, Lomond Shores, Gouk Hill and Ben Bowie.
- West Loch Lomond cycle route (NCR40) key viewpoints on Old Luss Road at Arden, Luss and Firkin
- Clyde and Loch Lomond Cycle Route (NCR7) - Moor Park, Ballagan, Strathcarron/entrance Balloch Park, River Leven-Park boundary.

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- Boats/Ferries/waterbus routes; Balloch-Luss, Inchcailloch–Balmaha-Luss, Arden-Inchmurrin, Maid of Loch slipway, Duncan Mills slipway and River Leven jetties.
- Footpath – Lomond shores overflow car park - Drumkinnon Woods – Pier Road.
- Footpath Mill of Haldane – Blairquhomrie (on Auchincarroch Road)
- Footpath Balloch Park – Whinney Hill (Woodland Trust)
- Viewpoints - Firkin, Luss, Duck Bay, Arden, Cameron House, Lomond Shores (jetty/Drumkinnon tower) , River Leven at Balloch Bridge ,
- Mountains/Hills – Ben Lomond, Ptarmigan Ridge, Arrochar Alps, Luss Hills, Conic Hill, Shantron Hill, Duncryne, Whinney Hill, Dumgoyne

Residential/properties: representative viewpoints from

- Pier Road south
- Clairinch and Inchruin Housing Estates (boundary properties)
- Millanbowie Road (NE) south of Robin House
- Dumbain Farm – (upper Mill of Haldane)
- Blairhosh - Westerton lodge - Gallagherad
- Upper Stoney-mollan

Visitor destinations:

- Mountain/Hill Summits ; Ben Lomond summit, Ben Dubh, Ben Bowie, Goukhill, Conic Hill ,Duncryne.
- Balloch Castle – key views from the Castle, riverside walks; boat house play area, breakwater, main gates and stone jetty (via Moss O Balloch car park).
- River Leven – Fisheries jetties either side of river
- Balloch Main Street; station platform, Sweeneys Kiosk at TIC car park, Moss O Balloch car park, Balloch House Hotel
- Lomond Shores; Gateway centre jetty, Drumkinnon Tower, play area, Drumkinnon Bay, Duncan Mills slipway, Maid of Loch at Balloch Pier.
- Cameron House boathouse and jetty
- Boturich Castle.
- Duck Bay, Luss Pier, Loch Lomond Golf Course, Sweeneys Cruises, Inchmurrin pier.

Visual - Woodbank House

- Roads/Paths : Old Luss Road at entrance to Lomond Shores,
- West Loch Lomond Cycle Way / Three Lochs Way /John Muir cyclepath
- Woodbank House - entrance – internal views - stables
- John Muir Way – path and from bridge over A82.
- Residents: properties on Stoney-mollan Road at 29 and 16 and cottages on Lower Stoney-mollan road.
- Businesses: Drumkinnon Cottage, Lomond Woods Holiday Park (northern boundary), former gatehouse (north on Old Luss Road) Queen of the Loch restaurant.

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- k) Visualisations to show the post-construction (phased) visual impacts from significant visual receptors (using photomontages or wireframes) and to demonstrate design principles (e.g. using diagrams). 3D modelling may be considered.

West Riverside

- Balloch Park – from Castle, boat house and breakwater
- Balloch Main street - from Balloch bridge and TIC car park
- Balloch Pier – from Maid of the Loch
- Drumkinnon Bay – to show development in association with Drumkinnon Tower
- Lomond Shores – Gateway Centre jetty, roundabout at Marsdens
- Cameron House marina jetty.
- Loch Lomond - Inchmurrin Pier
- Ben Lomond
- Conic Hill
- Ben Dubh

Woodbank House

- Old Luss Road at site entrance, north and south of boundary showing setting and incorporation of principle designed landscape features.

Multiple visualisations from a limited number of viewpoints and individual visualisations (See above, to be agreed).

- l) Mitigation measures to avoid, reduce, or compensate for adverse impacts on the landscape character and visual qualities must be clearly presented. Landscape Mitigation recommendations will be informed by the LVIA including Special Landscape Qualities and sequential travelling assessments and should include restoration and compensation measures.

3.8 Traffic and Transport

3.8.1 West Dunbartonshire Council Roads Service has noted the following in response to the scoping report:

- Point 8.2.2 - The minor unnamed road should be named Pier Road as there are only three roads within the site - Old Luss Road, Ben Lomond Way & Pier Road. Balloch Road housing estate should be Drumkinnon Gate. There are two small streams both unnamed within the North Western corner of the site.
- Point 8.2.5 - There has been one recorded flood event on Old Luss Road from its junction with Lower Stoney-mollan Road to the site boundary. The source of flooding was a blockage within the combined sewer system.
- Point 8.4.2 – Flood Prevention Team should be changed to Flood Risk Management Team
- Point 10.1.3 – BEAR Scotland should also be consulted as they are the operation company of the A82 north of Stoney-mollan Roundabout (*Please note, the Planning Authority will consult BEAR Scotland on the future planning application, not at EIA scoping stage*)
- Point 10.2.2 Transport Scotland are best placed to comment on existing delays and any level of mitigation required to address an increase in traffic on the A82 associated with this project

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- Point 10.2.3 – Parking for the development should conform to the appropriate standards set out in WDC Parking Standards
- Point 10.2.4 - Proposals are at an early stage to consider improvements to Balloch Station as part of Balloch Village Plans Project(BVPP). Scotrail / Abellio are best placed to comment on any proposal.
- Point 10.2.5 - Proposals should also ensure that existing use of John Muir Way and NCN 7 is enhanced and not discouraged by increased traffic.
- Point 10.3.2 – It is suggested that the following roads are included in the TA: A811, A813, B857, Balloch Road and other local roads to be identified when more details are available. Transport Scotland will also provide their requirements. The considerations listed have conflicting priorities and aims. A hierarchy of aims should be devised and developed to address this issue.
- Point 10.4.2 - This methodology should encompass and enhance BVPP, currently being developed in partnership between WDC, LLTNP, Sustrans, Abellio and the local community.

3.8.2 Transport Scotland has advised the proposed scope and methodology noted in chapter 10 of the Scoping Report is acceptable in terms of covering Transport Scotland's interests in considering development impacts on the A82 trunk road.

3.8.3 Transport Scotland note that a separate Transport Assessment (TA) will be prepared as a supporting study to the EIA, and will be undertaken in accordance with Transport Scotland's Transport Assessment Guidance (2012). This will include a detailed assessment of affected roads and junctions as well as considering requirements for sustainable modes of transport.

3.8.4 It is proposed to consult with West Dunbartonshire Council and Transport Scotland's Development Management teams to agree the final scope of study for the TA. Transport Scotland welcome the opportunity to discuss their requirements and agree the study parameters along with the local roads authority. It is highlighted that there may be a requirement to create a transport model and the specific aspects of this, in terms of data collection and coverage (both network and time periods) would also require to be agreed with Transport Scotland. Consideration should be given to peak seasonal conditions on the network.

3.8.5 The proposals are for a leisure development that will consist of some/all of the following; a hotel, holiday lodges, camping areas, leisure / recreational facilities, education and visitor interpretation facilities, and a hot food café / restaurant. Within Chapter 3 however it is stated that the quantum of development is not yet known. Whilst it is accepted that some assumptions on development scale may need to be made in order to progress these studies, any comments Transport Scotland make will be provided in the context of these assumptions.

3.9 **Archaeology and Cultural Heritage**

3.9.1 The attached letter from WOSAS sets out their requirements in relation to archaeological survey work, studies and assessment. This has not been duplicated in this section, but should be included as forming part of the National Park's scoping opinion. You will note that the response from WOSAS outlines the requirement for a written scheme of

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investigation as a planning condition. Archaeology as a topic area could therefore be scoped out of the ES.

3.9.2 The attached letter from Historic Environment Scotland(HES) sets out their requirements in relation to the Built Heritage and should be considered as forming part of this scoping opinion. In summary, HES are content with the heritage assets within their remit which have been scoped in to the assessment and would encourage further engagement with HES as the proposals develop.

3.10 **Socio-economics, Tourism, Recreation and Access**

3.10.1 All potential socio-economic impacts (both direct and indirect) on Balloch and the surrounding area should be considered. This should include an understanding of the existing local employment base, and potential direct and indirect employment expected to be created by the proposed development, both during construction and operation phases. The anticipated impacts on the local Balloch area and wider (National Park) economy and community should be considered. The ES's socio-economic analysis should include qualitative and quantitative assessment as noted in the Scoping Report.

3.10.2 Consideration needs to be given to the impacts of the proposals on recreation, including existing as well as proposed recreational uses, and on access. The following requirements have been set out by, National Park Recreation & Access Adviser:

- A Public Right of Way audit and impact assessment (i.e. diversions during construction)
- “Activity Audit & Proposals” for current popular activities, where access rights apply, which would be effected by the proposal i.e. swimming, fishing, canoeing, rowing, all-ability access, cycling, walking etc
- Consideration of core path designations and where these need to be moved/altered
- Proposals for non-motorised access connecting the proposal to the existing path network and sustainable transport hubs. These should include Balloch Village, and Long Distance Routes (LDRs) – such as West Loch Lomond Cycle Path, NCN7, The Three Lochs Way and John Muir Way.

4 **CUMULATIVE IMPACTS**

4.1 The proposals must be considered together with other development in the area (e.g. Loch Lomond Shores, Duncan Mills Memorial Slipway, pontoons along the River Leven, Sweeney's Boats) and other planning applications/proposals (e.g. Balloch Street Design Project).

5 **RATIONALE FOR THE SCHEME AND SITE SELECTION**

5.1 The EIA process includes a statutory requirement for the consideration of alternatives. In the context of this application, the consideration of different sites, layouts and designs should be demonstrated and the rationale for the selection of the proposed development provided. If there is no alternative then the application needs to say why this is so. The impact of different siting and design options on the landscape should be analysed, and the potential for their assimilation into the landscape evaluated. A clear rationale for the proposed site, layout and

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design should be provided in environmental terms and with particular reference to landscape and design.

6 NON TECHNICAL SUMMARY

6.1 As per the Regulations, a Non-Technical Summary, written in simple, non-technical language, should accompany the Environmental Statement. This should describe the options for the proposed development and the mitigation measures that would be employed to offset the environmental impacts that would result from the proposed development.

7 CONCLUSION

7.1 I can confirm that the Park Authority considers the main impacts of this development to be landscape/visual, woodland, noise, ground contamination, ecology, historic environment, traffic/transport, recreation and access and socio economic impacts. The impacts on the water environment and archaeology are also important.

7.2 Please note that I have not repeated the advice of external consultees (see attached) within this letter however they should be considered as part of this scoping opinion.

7.3 It is strongly recommended that further pre-application discussions take place. Some concerns have been raised by consultees and it would be helpful for you to have further meeting(s) with us in order for them to be able to discuss concerns with you directly.

7.4 I trust that this Opinion will be of assistance to you in carrying out the Environmental Impact Assessment. However, please do not hesitate to contact me in the first instance, should you wish to discuss any aspects further. You should also note that this Scoping Opinion, and the associated specialist comments attached, is provided without prejudice to the future consideration or determination of the Planning Application by National Park Authority officers or Members.

7.5 In terms of document handling, please note that we can process files only of a maximum size of 8MB and therefore, when the ES is submitted, it should be divided into appropriately sized and named sections.

Yours faithfully,

Julie Gray
Development Management

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Appendix 1

THE TOWN AND COUNTRY PLANNING ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2011

SCHEDULE 4 - INFORMATION FOR INCLUSION IN ENVIRONMENTAL STATEMENTS

PART 1

- 1.** Description of the development, including in particular -
 - a) a description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases;
 - b) a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used; and
 - c) 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 development.
- 2.** An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for the choice made, taking into account the environmental effects.
- 3.** A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors.
- 4.** A description of the likely significant effects of the development on the environment, which 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, resulting from:
 - a) the existence of the development;
 - b) the use of natural resources;
 - c) the emission of pollutants, the creation of nuisances and the elimination of waste, and the description by the applicant or appellant of the forecasting methods used to assess the effects on the environment.
- 5.** A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.
- 6.** A non-technical summary of the information provided under paragraphs 1 to 5 of this Part.
- 7.** An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant or appellant in compiling the required information.

PART 2

- 1.** A description of the development comprising information on the site, design and size of the development.
- 2.** A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects.
- 3.** The data required to identify and assess the main effects which the development is likely to have on the environment.
- 4.** An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for the choice made, taking into account the environmental effects.
- 5.** A non-technical summary of the information provided under paragraphs 1 to 4 of this Part.

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Appendix 4.2 – Scoping Report

West Riverside and Woodbank House

Environmental Impact Assessment Scoping Report

On behalf of



Project Ref: 35854/4503 | Rev: B | Date: April 2017

Office Address: 160 West George Street, Glasgow, G2 2HG

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Document Control Sheet

Project Name: West Riverside and Woodbank House

Project Ref: 35854

Report Title: EIA Scoping Report

Date: April 2017

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For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved
A	22/02/2017	Draft Scoping Report	DS	MJ	
B	03/04/2017	Final Scoping Report	DS	MJ	DMcD

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1 Introduction

- 1.1.1 This document is the EIA Screening and Scoping Report for the proposed redevelopment of West Riverside and Woodbank House, Balloch, West Dunbartonshire. Whilst these two areas are distinct, they are collectively referred to as 'the site'. A site location plan is attached at Appendix A.
- 1.1.2 This report sets out the scope and content of the EIA to support a forthcoming planning application and the method by which it is intended to be carried out.
- 1.1.3 Peter Brett Associates (PBA) has co-ordinated this Screening & Scoping Report taking account of the EIA Regulations and the range of issues identified, together with our own knowledge of the site and technical expertise. The report contains specialist inputs from
- Peter Brett Associates – Traffic & Transport, Ground Conditions & Geology, Socio Economics Tourism & Recreation
 - Envirocentre – Ecology, Water Hydrology & Flood Risk, Air Quality, Noise & Vibration
 - Gillespies – Landscape and Visual Impact
 - Headland Archaeology – Archaeology

1.2 Site Location

- 1.2.1 Our client, Flamingo Land Ltd, proposes the development of the West Riverside Site, Balloch as marketed by Scottish Enterprise, and the land encompassing Woodbank House (ruin) and its attendant structures (Grade A Listed), Old Luss Road, Balloch.
- 1.2.2 A red line site location plan is attached at Appendix A however in contextual terms, the development site comprises the lands outlined in red below in Figure 1.1.

Figure 1.1 – Aerial view of site



1.3 Screening Request

- 1.3.1 We are instructed by our client to make a request for a screening opinion under Article 6 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 (hereafter referred to as The Regulations).
- 1.3.2 The site extends to some 33.5ha, and therefore exceeds the thresholds identified for EIA screening under Classes 10 or 12 of Schedule 2 of the Regulations. Furthermore, the site is located within the boundaries of Loch Lomond and the Trossachs National Park. Within the meaning assigned to it by The Regulations, it is a 'Sensitive Area':
- "sensitive area" means any of the following: —*
- (g) an area designated as a National Park by a designation order made by the Scottish Ministers under section 6(1) of the National Parks (Scotland) Act 2000(f).*
- 1.3.3 The site is generally covered by the designations Mixed Use - MU1, and Visitor Experience VE1 & VE4 in the town of Balloch within the LLTNP Local Development Plan (LDP).
- 1.3.4 In accordance with Article 6(2) of the Regulations we have provided the following information in relation to the proposed development.

Site location Plan

- 1.3.5 A site location plan is attached in Appendix A.

Nature and Purpose of Development

- 1.3.6 A description of the proposed development is contained in Section 3 below.

Possible Effects on the Environment

- 1.3.7 The proposed development will take place on land at West Riverside and Woodbank House, Balloch, portions of which have been previously developed. A number of environmental features have been identified in the preliminary work completed to date which suggest that the proposed development described above, could have effects on the environment.
- Ecology
 - The proposed development site is not within or adjacent to any designated sites of ecological importance.
 - The nearest SSSI is 1.4km distant at the closest point (Boturich Woodlands).
 - The nearest SAC is 2.6km distant – Creinch Island, part of Loch Lomond Woods SAC).
 - The nearest SPA is 5.7km distant – Inner Clyde SPA.
 - The nearest RAMSAR Site is 2.6km distant – also at Creinch Island, part of Loch Lomond RAMSAR site.
 - Whilst there is little potential for direct impacts on designated sites of ecological importance, it is recognised that the proposals are coming forward on a site that is at present undeveloped. Given the waterside, woodland and open field attributes, the possibility of matters of ecological importance arising cannot be discounted at this point. The ecological and arboricultural attributes of the site will require evaluation as part of the design process.
 - Heritage
 - Woodbank House, with attendant garden buildings sits within the site. It is a Grade A listed building (ref LB1125). The building and its attendant structures are included in the Buildings at Risk Register, and there is evidence that the

remaining structure is unsound. Part of the strategy for the development of the overall site will involve development proposals for the Woodbank House site.

- The Winch House, Including Slipway at Drumkinnon Bay is also a category A listed building (ref LB46721). The building itself is outside the proposed site boundary, however given that proposals will come forward on adjacent land, the potential impacts on this building need to be considered.
- Balloch Castle, a scheduled monument and its attendant grounds, (a designated landscape) within Balloch Castle Country Park are located on the opposite bank of the River Leven and there is potential for impact on this area.
- Other heritage records exist for items in the surrounding area which will also require evaluation as part of the proposals.

■ Landscape & Visual

- The proposed development will occur in an area famed for its natural beauty. Whilst not located within the National Scenic Area, the proposals are some 950-1000m south of the NSA, there is potential for the development to be seen from there and from the other adjacent sensitive areas e.g. Balloch Castle and Country Park.

■ Physical constraints

- Areas of the site are identified as being subject to high risk of river and surface water flooding. Part of the proposed development will be to include flood risk mitigation measures.
- Part of the site has been previously developed and may be contaminated.
- A high pressure pipeline runs through the Drumkinnon Wood area and is to be treated as a development constraint.
- The proposals are predominantly a tourism and accommodation development and will generate additional traffic in the immediate area.
- The proposals will bring increased activity to the area, potentially generating noise and other environmental effects.
- There may be potential effects on the river network as development will be taking place adjacent to Loch Lomond and the River Leven.

■ Economics and Tourism

- The proposals are for a major tourism related development that will bring additional visitors, jobs and investment to the area.

■ Transport and Access

- Effects on the local transport network could result from the additional traffic and activity in the area.

1.3.8 In summary, the proposed development is of a scale and nature covered by Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011. It also sits within a Sensitive Area. The site location and its characteristics, including proximity to existing environmental designations, mean that effects on the environment are possible, a number of which have been highlighted here.

1.3.9 We hereby request that Loch Lomond & Trossachs National Park Authority determine whether EIA is required.

1.4 Scoping

1.4.1 In light of the possible effects on the environment summarised in paragraph 1.3.7 above, and their various interactions, together with the site location, we have taken the view that EIA is a likely requirement. This Report serves as a request for a Scoping Opinion from Loch Lomond & The Trossachs National Park regarding an EIA for the proposed development. Accordingly, the remainder of this document sets out the intended scope of an EIA which would be

undertaken for the proposed development. The EIA would be reported within an Environmental Statement accompanying any planning application or applications for the proposed development.

- 1.4.2 By virtue of making an EIA scoping request at this time, any EIA subsequently undertaken for the proposed development would proceed in accordance with the requirements of the Town and Country Planning (Scotland) (Environmental Impact Assessment) (Scotland) Regulations 2011. In accordance with the transitional provisions detailed within EU Directive 2014/52/EU – the Revised EIA Directive this would be the case even if a planning application for the proposed development is submitted after May 2017, when the Town and Country Planning (Scotland) (Environmental Impact Assessment) (Scotland) Regulations 2017 are expected to be enacted.
- 1.4.3 In common with adopted practice, this report is set out on a topic by topic basis and includes the following structure in respect of each environmental aspect considered to be of potential relevance to the proposed development:
- Introduction
 - Baseline conditions
 - Relevant guidance and assessment methodology
 - Assessment criteria
 - Consultation
 - Potential Effects¹
 - Mitigation and Enhancement (if appropriate)
- 1.4.4 The assessment methodologies proposed within this Scoping Report are based on recognised good practice and guidelines specific to each environmental aspect. A summary of the proposed content and structure of the ES is outlined in Appendix B.
- 1.4.5 For the purposes of this Scoping Report, potential cumulative effects of the development have not been identified. At present the proposals for the site are insufficiently defined to consider what the cumulative effects may be. However, as part of the EIA scoping exercise, subsequent consultation and ensuing scheme design it is intended that other projects of relevance will be identified and, where appropriate, the cumulative impacts of development will be assessed in the ES.

Proposed Consultation

- 1.4.6 Intended consultees are identified in each chapter and are summarised in Appendix C.

¹ Note on Terminology employed

In this Scoping Report, reference is made to the *potential effects* of the development. The term “effect” refers to how the impact will affect different receptors (as a consequence of their sensitivity or importance).

The significance of the effect on the receptor is assessed by considering the magnitude of the impact against the sensitivity of the receptor.

2 Policy & Legislative Context

2.1 Introduction

- 2.1.1 An application for Planning Permission in Principle for development is to be lodged under the provisions of the Town and Country Planning (Scotland) 1997 Act as amended ('The Act'). In accordance with the Town and Country Planning (Hierarchy of Development) (Scotland) Act 2009, the proposal will be a 'major' application as it is development with a site size in excess of 2ha.

2.2 Legislative Context

The Environmental Impact Assessment Regulations

- 2.2.1 The preparation of an EIA for development projects such as this in Scotland, is governed by the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 ('the Regulations').
- 2.2.2 Where an EIA is required, environmental information must be provided by the developer in an Environmental Statement. Schedule 4 of the Regulations specifies the information that must or may be provided in such a Statement.
- 2.2.3 The Regulations prohibit the Scottish Ministers from granting consent for an EIA development without taking into account an Environmental Statement, together with any associated environmental information.

Obtaining a Scoping Opinion (Regulation 14)

- 2.2.4 Under Regulation 14, the developer of an EIA development may ask the Planning Authority before submitting an application for planning permission, to state in writing their opinion as to the information to be provided in the Environmental Statement (i.e. to provide a 'scoping opinion').
- 2.2.5 The request for a scoping opinion must be in writing and should include basic information on the proposed development as set out below:
- a. a plan sufficient to identify the land;
 - b. a brief description of the nature and purpose of the proposed development and its possible effects on the environment; and
 - c. such further information or representations as the person making the request may wish to provide or make.
- 2.2.6 This information is presented in this Scoping Report.

The Environmental Impact Assessment Process

- 2.2.7 Environmental Impact Assessment (EIA) is a process which identifies the likely significant environmental effects of a development and then seeks to avoid, reduce or offset any adverse effects through 'mitigation measures'. EIA follows a series of stages.
- 2.2.8 In this case the next stages are:
- Scoping – consultation on the proposed scope and methodology of the EIA;
 - Environmental baseline studies – establish what is there;
 - Assessment of effects – determine the potential effects;
 - Mitigation – modify proposals to incorporate mitigation measures and re-assess residual effects;
 - Preparation of Environmental Statement;

- Submission of Planning Application with Environmental Statement;
 - Consideration of application and environmental information by Loch Lomond & Trossachs National Park and consultees;
 - Decision to refuse or grant consent (with or without conditions).
- 2.2.9 In reality the EIA process is iterative, and runs in tandem with project design. As potential adverse effects are identified, the design of the project will be adjusted and mitigation measures proposed. Consultation, a vital component of the EIA process, continues throughout each stage and contributes both to the identification of potential effects and mitigation measures.
- 2.2.10 The EIA process therefore provides the opportunity to develop projects, for which the environmental effects have effectively been minimised (or removed). In many cases significant effects on, for example, ecology, birds, archaeology and noise can be prevented through sensitive location and design of infrastructure. Others, for example the effects of construction, can be effectively managed through the adoption of best practice working methods.
- 2.2.11 At this early scoping stage however it is important to identify all 'potential' effects so that a rigorous assessment process, with input from independent experts, is followed, based on sound objective evidence.

2.3 Policy Context

National Planning Framework

- 2.3.1 The National Planning Framework for Scotland (NPF3) sets out the spatial strategy for Scotland's development. Published in June 2014, it notes that part of the vision is to have successful and sustainable places. There is also a desire to have improved transport links to facilitate growth.
- 2.3.2 NPF3 states that planning should address the development requirements of businesses and enable key opportunities for investment to be realised.
- 2.3.3 The Framework includes a strategy for development in the National Park Areas:
- Scotland's two National Parks – Cairngorms, and Loch Lomond and The Trossachs – are special places. National Park Partnership Plans provide the strategic framework for co-ordinated delivery of the four National Park aims, supporting their role as exemplars of a partnership approach to increasing sustainable economic growth and providing multiple benefits for residents, visitors and the wider Scottish economy.*
- Our National Parks are sustainable, successful places. We want to see positive planning and innovation continue to strengthen communities, encourage investment, support tourism, deliver affordable rural housing, and encourage high quality placemaking and visitor experiences. Both parks can be low carbon places, with potential for increased use of microgeneration and to support the biomass supply chain. They are also connected places, with programmed improvements to key routes including the A82 and A9, the scenic routes initiative, the development of the National Walking and Cycling Network, and other path network improvements.*
- Above all, our National Parks are natural, resilient places. We expect their exceptional environmental quality, comprising some of the very best of Scotland's nature and landscapes, to continue to form the foundations of their development plans.*
- 2.3.4 NPF3 highlights that Scotland's city regions should be the focus for investment in the future as they are the major economic drivers in the country. Within the Glasgow City Region, it notes that *"The Strathleven area has significant potential for growth and regeneration"*. In particular sectors such as the creative industries, financial and business services, learning and life sciences are often situated in city region locations. NPF3 says that there is scope for the city regions to capitalise on new and expanding growth sectors.
- 2.3.5 There is a desire across the Glasgow City Region including Balloch for proposals which drive employment and economic development. Derelict and vacant land is identified as an

opportunity for investment and that a planned approach is required to bring development forward in areas that would benefit from regeneration.

- 2.3.6 NPF3 promotes the Central Scotland Green Network (CSGN) which is a national priority. It emphasises that the remediation of derelict land and the promotion of active travel such as walking and cycling should be encouraged by the CSGN Trust and others. Moreover, the promotion of green infrastructure and 'greening' of the urban environment is also encouraged. NPF3 notes that well-designed green infrastructure can assist regeneration proposals.
- 2.3.7 Continued investment in infrastructure is encouraged in order to strengthen transport links within Scotland and to the rest of the world.

Scottish Planning Policy

- 2.3.8 Scottish Planning Policy (SPP), published in 2014, contains a '*presumption in favour of development which contributes to sustainable development*'.
- 2.3.9 SPP highlights that policies and decisions should be guided by a number of principles including appreciating the net economic benefit of a development, supporting the delivery of accessible business development, having regard to the principles of sustainable land use and supporting good design (Para. 29).
- 2.3.10 Another key principle of SPP is to seek to direct the right development to the right location (Para. 40). Using land which is adjacent to settlements for a mix of uses is encouraged in SPP as it will promote more compact and higher density areas. The re-use of brownfield land is considered sequentially preferable to development on greenfield sites. Development is also encouraged in locations where it will result in an improvement in the local economy.
- 2.3.11 SPP contains policies to support business and employment. SPP states that the planning system should "*promote business and industrial development that increases economic activity*" (Para. 93). Sites that cater for different sectors and sizes of business are encouraged. Due weight to the economic benefit of the development also needs to be taken into account. Key sectors noted as opportunities for growth in SPP include tourism and financial and business services (Para. 94).
- 2.3.12 SPP states that any development that affects a national designation such as a Site of Special Scientific Interest will only be permitted if the overall integrity of the site is not affected or if material considerations such as social, environmental or economic benefits outweigh the loss of the site (Para. 212). Development which could potentially adversely affect Natura 2000 designations such as a Special Protection Area (SPA) will also not be permitted unless there are no suitable alternative solutions, there are overriding reasons (e.g. social or economic) which are in the public interest or if suitable compensation measures are introduced to ensure that the network is protected (Para. 208). Ramsar sites are also noted as being "*protected under the relevant statutory regimes*" (Para 211).
- 2.3.13 SPP promotes safeguarding the historic environment. Development on sites that have listed buildings needs to be designed and sited carefully in order to preserve or enhance the character and setting of the historic asset (Para.141). SPP supports the transformational change to a low carbon economy. New developments that contribute to energy efficiency, heat recovery and efficient energy supply and storage are encouraged (Para. 154).
- 2.3.14 Planning for zero waste is also encouraged. Developments that minimise the "*use of primary materials and promote efficient use of secondary materials*" are encouraged (Para. 176). All new development including commercial and industrial properties should have a provision for waste separation and collection in order to satisfy the requirements of the Waste (Scotland) Regulations (Para. 190).
- 2.3.15 Maximising the benefits of green infrastructure is advanced in SPP. Development which provides safe and easy access to green infrastructure is encouraged (Para. 221). New and enhanced opportunities for access linked to wider networks are also supported (Para. 228). Any development which results in the loss of green infrastructure should be remedied through the creation of accessible infrastructure elsewhere (Para. 231).

Local Development Plan

2.3.16 The current statutory Development Plan is the Loch Lomond and the Trossachs Local Development Plan 2017 – 2021 (the LDP), which was adopted by LLTNPA in December 2016.

2.3.17 The LDP is split into four distinct sections, of which Section 2 – Vision, Section 3 – Place and Section 4 - Policies are directly relevant to the proposed development.

LDP Section 2 – Vision

2.3.18 The Development Strategy Map (page 17) identifies Balloch, where the site is located, as a focus for 'Strategic Tourism Opportunities'.

LDP Section 3 – Place

2.3.19 Section 3.2 provides proposal maps showing land use allocations for each settlement within the LLTNP area. The following land use allocations within Balloch are of relevance to the proposed development:

- Balloch VE1: West Riverside – allocated for Visitor Experience related uses, as defined in draft Visitor Experience Planning Guidance. The allocation covers the eastern part of the West Riverside site.
- Balloch VE4: Woodbank House – allocated for visitor experience related uses. This allocation covers the full extent of the Woodbank House site.
- Balloch MU1: The Old Station – allocated for mixed use (visitor experience and transport) uses. This allocation adjoins the West Riverside site.

2.3.20 No further details are provided in Section 3 regarding development requirements or design principles for each of the identified land allocations. The main effect of these land allocations is therefore simply to safeguard the sites for specific land uses.

LDP Section 4 – Policies

2.3.21 LDP policies of potential relevance to the proposed development are identified in Table 2.1 below.

Table 2.1 – Relevant Policies within the adopted LDP

Policy Reference	Policy Title
Overarching Policy 1	Strategic Principles
Overarching Policy 2	Development Requirements
Overarching Policy 3	Developer Contributions
Housing Policy 1	Providing a diverse range of housing
Housing Policy 2	Location and types of new housing required
Visitor Experience Policy 1	Location and scale of new development
Visitor Experience Policy 2	Delivering a World class Visitor Experience
Transport Policy 2	Promoting sustainable Travel and Improved Active Travel options
Transport Policy 3	Impact assessment and Design standards of new Development

Policy Reference	Policy Title
Natural Environment Policy 1	National Park Landscapes, seascape and Visual Impact
Natural Environment Policy 2	European sites - Special Areas of Conservation and Special Protection areas
Natural Environment Policy 3	Sites of Special Scientific Interest, National Nature Reserves and RAMSAR Sites
Natural Environment Policy 4	Legally Protected Species
Natural Environment Policy 5	Species and Habitats
Natural Environment Policy 6	Enhancing Biodiversity
Natural Environment Policy 8	Development Impacts on Trees and Woodlands
Natural Environment Policy 9	Woodlands on or adjacent to development sites
Natural Environment Policy 11	Protecting the Water Environment
Natural Environment Policy 12	Surface Water and Waste Water Management
Natural Environment Policy 13	Flood Risk
Natural Environment Policy 16	Land contamination
Historic Environment Policy 1	Listed Buildings
Historic Environment Policy 3	Wider Built Environment and Cultural Heritage
Historic Environment Policy 4	Gardens and Designed Landscapes (GDL)
Historic Environment Policy 6	Scheduled Monuments and Other Nationally Important Archaeological sites
Open Space Policy 2	Protecting Other Important Open Space
Waste Management Policy 1	Waste Management Requirement for new Developments

LLTNP Planning Guidance

- Listed Buildings and Conservation Areas planning guidance:
 - Does provide criteria for development proposals in the grounds of listed buildings, including the protection of key views and landscape setting

Draft LLTNP LDP Supplementary Guidance and Planning Guidance

2.3.22 A number of *draft* Supplementary Guidance and Planning Guidance documents were published by LLTNPA in 2015 for consultation alongside the LLTNP LDP Proposed Plan. At the time of writing (February 2017) these documents remain in draft form. Given that the LDP has recently been adopted, it is expected that LLTNPA will shortly progress to finalise these documents. There are therefore material considerations for the purposes of this development.

2.3.23 Of relevance to the proposed development are:

- Design and Placemaking Draft Supplementary Guidance, which:
 - Provides guidance regarding expected content of Design & Access Statements for major applications;
 - Encourages an 'Ecosystem Approach' to design, and suggests preparation of a 3 stage Site & Area Appraisal;
 - Identifies a range of detailed urban and environmental considerations for development proposals in the National Park and also includes consideration of Designing Streets Planning Policy;
 - Includes specific guidance to ensure that proposed "holiday park developments", of varying types, are all high quality.
- Developer Contributions draft planning guidance:
- Visitor Experience draft planning guidance:
 - Defines different types of tourism accommodation and infrastructure.
 - States that a Business Statement, demonstrating the viability and market demand for tourism development proposals, is "sometimes required". Details the expected content of Business Statements.

Government Economic Strategy 2015

- 2.3.24 The overall purpose of the Economic Strategy is to deliver increased sustainable growth. In order to deliver this, one of the key priorities is securing sustainable investment. This includes investment in business and infrastructure.
- 2.3.25 The Strategy highlights that it is important to foster an environment that supports business growth. Investment in sectors in which Scotland has an advantage, including financial and business services and tourism, is encouraged.
- 2.3.26 The strategy states that investment in infrastructure includes "*smaller scale, local interventions to improve our infrastructure networks*".
- 2.3.27 The Strategy calls for businesses to be resource efficient and low carbon in order to improve efficiency and productivity.

3 Location and Nature of Development

- 3.1.1 The application site is located to the north of Balloch, and contains two distinct areas, known respectively as West Riverside and Woodbank House. Old Luss Road is the interface between the two. The project boundary is defined in Appendix A and comprises a total area of c. 33.5 ha.
- 3.1.2 The west Riverside Site is bounded generally by the River Leven to the East, Loch Lomond Shores and Loch Lomond to the North, Old Luss Road and Ben Lomond Way to the west and Balloch Road and the houses in Clairinch to the South.
- 3.1.3 The Woodbank House area comprises the grounds of the former Woodbank estate and is bounded generally by the A82 to the West, Old Luss Road to the East and the Lower Stoney-mollan Road to the South.
- 3.1.4 At present the precise quantum of development for which planning permission will be sought is unknown. The project parameters however are clear as is the context set by the LDP. The development site comprises a mix of previously developed land and greenfield areas or woodland. The LDP allocates the majority of the West Riverside site as VE1 for tourism and leisure related activities. A small portion of West Riverside is also allocated for mixed use purposes (MU1). Woodbank House is all allocated as VE4 for Visitor Experience.
- 3.1.5 The nature and extent of uses will be guided by the LDP which notes the following for Balloch:
- Balloch sits on the shores of Loch Lomond and forms the southern gateway to the National Park.*
- Balloch attracts a high number of tourists with easy access from Glasgow. Balloch is notable for being the main access to Loch Lomond, the Country Park, Loch Lomond Shores and numerous historic buildings.*
- Future development includes housing, visitor experience, leisure and mixed use. Several development opportunities support the aim of bringing back into use great listed buildings including Balloch Castle and Woodbank House. Loch Lomond Shores is an exceptional retail and visitor attraction within the National Park and the links from the train station will be improved.*
- 3.1.6 Taking account of the above it is likely that the proposed development will include some or all of the following elements:
- hotel and holiday lodge accommodation;
 - controlled camping areas;
 - leisure and recreational facilities;
 - education and visitor interpretation facilities;
 - hot food café / restaurant uses;
 - transport infrastructure;
 - public realm enhancements including footpaths and cycleways;
 - viewing platform(s);
 - appropriate ancillary uses; and
 - landscaping and site development infrastructure including drainage and potential flood mitigation measures, SUDS measures, water supply, utilities etc.
- 3.1.7 The following sections of this Scoping Report provide a description of each proposed ES technical chapter and describe the current understanding of the baseline conditions and assessment methodology for each discipline that will determine the likely significant environmental effects of the development. Potential mitigation measures have also been identified where appropriate, although these will be set out in detail in the ES. LLTNPA is invited to comment on the methodologies with a scoping response.

3.1.8 The following topics are considered:

- Ecology;
- Noise and Vibration;
- Air Quality;
- Ground Conditions and Geology;
- Water Quality and Flood Risk;
- Landscape and Visual Impacts;
- Traffic and Transport;
- Archaeology and Heritage;
- Socio-Economics, Tourism and Recreation; and
- Other topics.

4 Ecology

4.1 Introduction

- 4.1.1 The proposed development has the potential to impact upon the ecological systems of the area. Therefore, an Ecological Impact Assessment (EclA) will be undertaken according to guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM)². This will establish the current baseline conditions and identify ecological sensitivities within the proposed development site and the immediate vicinity. The proposed design will then be assessed within this context to identify predicted impacts and any required mitigation measures.
- 4.1.2 The assessment will be undertaken and verified by experienced and competent ecologists who are all Members of CIEEM.

4.2 Baseline Conditions

- 4.2.1 A site visit was undertaken by EnviroCentre on 12th December 2016 to inform the production of an Ecological Constraints and Opportunities Plan (ECOP), as presented in Appendix D. An ECOP is a useful tool/drawing that may be used to present ecological information to other professionals and can assist with gaining the best outcomes for biodiversity^{3,4}.
- 4.2.2 The site can be considered in two separate areas: the land at West Riverside; and the area associated with Woodbank House. The area surrounding West Riverside is dominated by Drumkinnon Woods. This semi-natural woodland is located south east of the Loch Lomond Shores complex, across an undulating landform and is dissected by footpaths. The woodland is bounded to the west and north by roads accessing Loch Lomond Shores and the pier. Part of the woodland is designated as Ancient Woodland (long-established of plantation origin). Although subject to a level of disturbance, the woodland has the potential to support a range of wildlife.
- 4.2.3 A corridor of woodland is also present alongside the River Leven, which flows into the Clyde. Pockets whilst pockets of landscaped woodland, amenity areas and car parks are present in the north of the site and to the east of the Loch Lomond Shores complex.
- 4.2.4 The area associated with Woodbank House is situated to the west of Old Luss Road and approximately 500m east of the A82. At the centre of the site are the remains of Woodbank House, a Grade-A listed property, which is now largely derelict.
- 4.2.5 The remains of the house are accessed from Old Luss Road by a driveway through an area of paddock, used for grazing horses and surrounded by the remains of the former terraced gardens. Ancient woodland surrounds the site of the building with mature specimens of broadleaved species such as oak and yew. The woodland and small watercourses present to the north and south of the site boundary at Woodbank House have the potential to support a range of faunal species.

² CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester

³ British Standard document 42020:2013 *Biodiversity - Code of practice for planning and development* (2013).

⁴ Chartered Institute of Ecology and Environmental Management (CIEEM) *Guidelines for Preliminary Ecological Appraisal* (April 2013)

4.3 Relevant Guidance and Assessment Methodology

- 4.3.1 Based on the outcome of the ECOP, the baseline ecological assessment of the site will comprise the following elements.

Desk Study

- 4.3.2 In order to anticipate the potential ecological sensitivities at the site, a desk study will be conducted in advance of the field studies and will include a review of:

- Existing data on statutory designated sites available through Scottish Natural Heritage (SNH) Sitelink website (up to 5km from the site)⁵;
- Existing data on non-statutory designated sites available through the Loch Lomond & The Trossachs National Park (LLTNP) Local Development Plan 2017-2027 (LDP) (up to 2km from the site)⁶;
- Records of Ancient Woodland available through Sketchmap (up to 2km from the site)⁷;
- Notable species records from Glasgow Museums Resource Centre (up to 2km from the site)⁸
- The UK Biodiversity Action Plan (UKBAP)⁹ and the LLTNP Local Biodiversity Action Plan (LBAP) Wildpark2020¹⁰; and
- The Scottish Biodiversity List¹¹.

The results of the desk study are presented in Appendix E.

Vegetation Surveys

- 4.3.3 A Phase 1 Habitat Survey will be undertaken according to the standard Joint Nature Conservation Committee method¹² and CIEEM guidelines⁴. This is a method that rapidly records vegetation and wildlife habitat over large areas. The output of this survey comprises a habitat map and associated photographs. The information is used to identify ecologically sensitive features, inform additional species survey requirements and, ultimately, recommend mitigation and enhancement measures in connection with the proposed development.
- 4.3.4 The Functional Wetland Typology¹³ will be used to aid the identification of any wetland habitats that derive their water from groundwater and surface water. This information is useful in identifying if and where further surveys are required to identify the presence and potential sensitivity of Ground Water Dependent Terrestrial Ecosystems (GWDTEs).
- 4.3.5 Rhododendron, an invasive plant, was identified in multiple locations across the site during the ECOP visit. Any Invasive Non-Native Species (INNS) encountered during the Phase 1 Habitat Survey will be identified. Their exact locations and their extents will be mapped.

⁵ SNH Sitelink available at: <https://gateway.snh.gov.uk/sitelink/>

⁶ Loch Lomond and Trossachs LDP available at: <http://www.lochlomond-trossachs.org/planning/planning-guidance/local-development-plan/>

⁷ Sketchmap available at: <http://sketchmap.co.uk/>

⁸ Glasgow Museums Resource Centre available at: <http://www.glasgowlife.org.uk/museums/GMRC/Pages/default.aspx>

⁹ The UKBAP available at: <http://jncc.defra.gov.uk/page-5717>

¹⁰ LLTNP LBAP available at: <http://www.lochlomond-trossachs.org/park-authority/what-we-do/conservation/wild-park-2020-nature-conservation-action-plan/>

¹¹ The Scottish Biodiversity List available at: <http://www.biodiversityscotland.gov.uk/advice-and-resources/scottish-biodiversity-list>

¹² JNCC (2010). *Handbook for Phase 1 habitat survey; a technique for environmental audit*. Peterborough: Joint Nature Conservation Committee

¹³ SNIFFER (2009). WFD95: A Functional Wetland Typology for Scotland; Project Report. Edinburgh: SNIFFER

Tree Survey

- 4.3.6 A tree survey, in reference to BS5857:2012 *Trees in relation to design, demolition and construction – Recommendations*¹⁴, will be undertaken to gather data on all individual and groups of trees within and immediately adjacent to the red line boundary. This will allow a tree constraints plan to be produced detailing: tree/woodland group ID, quality category, above and below ground constraints considered to be posed by trees and groups of trees in relation to the proposed development.
- 4.3.7 Once a design freeze has been reached, a tree protection plan will be produced showing the proposed design, minus incompatible or unviable trees, tree protection barrier position and precautionary areas where mitigation may be required to minimise negative impacts to tree stock.

Notable Fauna Surveys

- 4.3.8 The ECOP identified buildings, structures and mature trees that may have the potential to support roosting bats. A ground based external search for Potential Roost Features (PRFs) on buildings and trees, and direct evidence of bats, will be undertaken to identify those structures and features present within the site which may provide suitable habitat for roosting bats and may require further survey work. The survey will be undertaken in accordance with the assessment criteria set out by the Bat Conservation Trust (BCT)¹⁵.
- 4.3.9 The criteria used to assess the suitability of the building for bat roosts can be found in Table 4.1 below.

Table 4.1 – Active Bat Roost Indicators and Potential Roosting Features in Buildings

Signs indicating possible use by bats	Features of buildings frequently used as bat roosts
Live bats or dead specimens	Gaps in windowsills and window panes
Droppings and their relative freshness, shape and size	Underneath peeling paintwork or lifted rendering
Feeding remains including the amount and type of prey	Behind hanging tiles, weatherboarding, eaves, soffit boxes, fascia and lead flashing
Urine splashes and fur-oil straining around crevices and holes	Under tiles and slates
Distinctive smell of bats	Gaps in brickwork and stonework

- 4.3.10 The indicators used to assess the suitability of trees for roosts are provided in Table 4.2 below.

Table 4.2 – Potential Bat Roost Features (PRFs) in Trees

PRFs in trees frequently used as roosts	Signs indicating possible use by bats
Hollows and cavities from: woodpecker, rot and knot holes.	Tiny scratches around PRF
Hazard beams and other vertical or horizontal cracks and splits in stems or branches	Staining around PRF
Partially detached or plated bark	Bat droppings in or around PRF
Cankers, included bark and compression forks with potential cavities	Audible squeaking at dusk or during warm weather
Partially detached ivy with stem diameters in excess of 50mm	Flies around PRF

¹⁴ BSI (2012). BS 5837:2012 *Trees in relation to design, demolition and construction - Recommendations*. BSI Standards Limited 2012.

¹⁵ Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. (London The Bat Conservation Trust, Ed.) (3rd ed.)

PRFs in trees frequently used as roosts	Signs indicating possible use by bats
Bat or bird boxes	Smoothing of surfaces around cavity

- 4.3.11 According to their suitability to host roosting bats, trees will be categorised as shown in Table 4.3 below.

Table 4.3 – Categorising PRFs in Trees

Suitability	Trees
High	A tree with one or more potential roost features that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat
Moderate	A tree with one or more potential roost features that could be used by bats due to their size, shelter, protection, conditions and/or surrounding habitat but unlikely to support a roost of high conservation status
Low	A tree of sufficient size and age to contain PRFs but with none seen from the ground; or features seen with only very limited roosting potential

Badger

- 4.3.12 During the ECOP, a mammal hole was identified at NS 38493 82061 along with suitable habitat for badger throughout the site. A badger survey will be undertaken of the area within the site boundary plus a 50m buffer according to the standard guidance¹⁶, which involves a search for the following field evidence:

- Setts (any structure or place that displays signs indicating current use by badger/located within an active badger territory as defined by the standard guidance¹⁷);
- Paths (network of paths generally linking setts to foraging habitat);
- Footprints;
- Guard hairs;
- Snuffling (badgers use their snouts to turn over vegetation or soft soil to forage for bulbs and invertebrates);
- Scratching posts (marks on tree trunks/fallen trees where badgers have left claw marks);
- Breach points (gaps in fences or crossing points over roads);
- Dung pits (single faeces deposit placed in a small excavation); and
- Latrines (collections of faecal deposits often used by badger clans to mark home range boundaries).

- 4.3.13 A habitat assessment will be undertaken to identify foraging resources and commuting routes.

Otter

- 4.3.14 The banks of Loch Lomond and the small watercourses within the site have potential to support otter. An otter survey will be conducted along the banks of Loch Lomond and all watercourses and standing water within the site boundary plus a 250m buffer up and down-stream from the

¹⁶ SNH (n.d.-b). Scotland's Wildlife: Badgers and Development. Scottish Natural Heritage. Retrieved from <http://www.snh.org.uk/publications/on-line/wildlife/Badgersanddevelopment/development.asp>

¹⁷ Ross, B. (n.d.). *Licensing Guidance; What is a badger sett?* Inverness: Scottish Natural Heritage.

site extents. The survey will follow best practice guidelines¹⁸ and would aim to identify suitable otter habitat and field signs, including:

- Spraints (otter faeces/droppings used as territorial signposts. Often located in prominent positions and can be placed on deliberate piles of soil or sand). Three categories are used for describing otter spraint: Dried fragmented (Df); Dried intact (Di); and Not fully dry (Nd);
- Footprints;
- Feeding remains (can often be a useful indication of otter presence);
- Paths/slides (otter can often leave a distinctive path from and into the watercourse);
- Holts (underground shelter) are generally found:
 - Within trees roots at the edge of the bank of a river;
 - Within hollowed out trees;
 - In naturally formed holes in the river banks that can be easily extended;
 - Or preferably in ready-made holes created by other large mammals such as badger setts, rabbit burrows or outlet pipes; and
- Couches/lay-ups (couches or lay-ups are places for lying up above ground are usually located near a watercourse, between rocks or boulders, under dense vegetation).

4.3.15 In order to assess their importance, and thus determine the likely impact of any proposed development, the status of otter resting sites was assigned from Low to High according to Table 4-4 below¹⁹:

Table 4.4 – Guidance for Assigning Status of Otter Resting Sites

Resting Site Status	Definition
Low	Feature with limited evidence of otter activity – low number of spraints, not all age classes present. Insufficient seclusion to be a breeding site or key resting site, unlikely to have links to the key otter requirements. Most likely to provide a temporary 'stop off' for otters when moving through their territory. Loss/disturbance of such a feature is unlikely to be significant in terms of the individual or population.
Moderate	Feature containing sprainting with a range of age classes, but not in significant quantities. Availability may be limited by season, tides or flow. Unlikely to be suitable as a breeding/natal site but will be a key resting site and may be linked to other important features within the territory. The impact arising from a loss or disturbance of such a feature will be determined by the availability of more suitable or well used sites within the otter's territory.

¹⁸ Chanin, P. (2003). *Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology* (No. 10). Peterborough: EN, CCW, EA, SEPA, SNH & SNIFFER

¹⁹ Bassett, S., & Wynn, J. (2010). Otters in Scotland: How Vulnerable Are They to Disturbance? CIEEM In Practice, (70), 19–22. Retrieved from file:///M:/Library/_By%20author/CIEEM/In-Practice-IP70_Dec_2010.pdf

<p>High</p>	<p>Feature has a high level of otter activity, including an abundance of sprainting of all age classes, large spraint mounds, well used grooming hollows, paths and slides. Affords a high degree of cover and is linked to key features such as fresh water and abundance of prey. May be suitable as a breeding area (spraints may be absent from natal holts). The site is usually available at all times of year and at high and low tide/flow. The loss/ disturbance of such as feature will often be considered significant in terms of the individual or population.</p>
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Water Vole

4.3.16 The watercourses within the site boundary may have the potential to support water vole. A water vole survey will be undertaken in conjunction with the otter survey and will cover the same area, and will follow standard survey guidelines²⁰. Water voles tend to confine their activity to within 3m of the edge of the bank along a watercourse. Field evidence includes:

- Faeces: 8-12 mm long, 4-5 mm wide; cylindrical and blunt ended pellets; colour variable with food type. Most droppings left in latrines near the nest, at range boundaries and at water entry points;
- Latrine sites: concentrations of faeces, often with fresh droppings on top of old ones;
- Runways: often 5-9 cm broad and multi-branched; usually within 2m of water's edge and often forming tunnels through vegetation; leading to water's edge or burrows;
- Burrows: 4-8 cm diameter, wider than high; eroded entrances then contract down to typical size; entrances located at water's edge; however some entrances can be up to 3m from the water; no spoil heaps;
- Nests: size and shape of a rugby ball, often in base of rushes, sedges or reeds;
- Feeding stations: located along runways, or at platforms along water's edge; usually a pile of cut/chewed vegetation in sections approximately 10cm long; vegetation ends show marks of two large incisors. Piles of chopped grass, sedge or rush stems, rush pith and leaves;
- Lawns: short, grazed vegetation around land entrances, often used during nursing periods;
- Footprints: difficult to tell from rat; adult hind foot 26-34 mm (heel to claw); stride 120mm (smaller than rat); occur at water's edge and lead into vegetation; and
- Sound: characteristic 'plop' when a vole enters the water.

4.3.17 Emphasis will be placed on locating latrine sites, as they are the most useful sign for recording purposes. They indicate whether there is definite presence of water voles at a site.

Red Squirrel

4.3.18 The areas of woodland within the site have the potential to support red squirrel. A survey will be undertaken based on best practice guidance²¹ which involves a search of suitable habitat (primarily coniferous woodland) for two distinct signs of squirrel activity. It should be noted that

²⁰ Dean, D. M. Strachan R. Gow, & Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds: Fiona Mathews and Paul Chanin. The Mammal Society, London.

²¹ Gurnell, J., Lurz, P., McDonald, R. & Pepper, H. (2009). *Practical techniques for surveying and monitoring squirrels*. Surrey: Forestry Commission. Retrieved from <http://www.forestry.gov.uk/pdf/fcpn011.pdf/FILE/fcpn011.pdf>

neither of these methods accurately distinguishes between red or grey squirrels (*Sciurus carolinensis*) but would inform the requirement for further survey.

1. Drey count – dreys are the nests made by both species of squirrel in trees. Dreys are distinguishable from birds' nests as they are normally 50cm in diameter and 30cm deep, comprise a ball shape and are usually densely constructed. The dreys are normally located close to the main stem of the tree at a height of 3m or more; and
2. Feeding evidence – where cone producing trees (conifers) are evident evidence of squirrel feeding is searched for. Although the two species of squirrel cannot be distinguished from feeding remains, the manner in which squirrels break open seeds and nuts, which are then left on the forest floor, is diagnostic.

Pine Marten

- 4.3.19 The areas of woodland and open glades within the site have the potential to support pine marten. A passive sign survey will be conducted for pine marten according to standard guidance²². The survey will include a search for scats (e.g. on prominent features such as tree stumps, dead logs or stones), footprints and potential den sites as well as the presence of scats on paths, rides and track ways through woodland or rock habitats.
- 4.3.20 An assessment of the habitat will also be undertaken to identify likely prey resources, which include small mammals, birds and invertebrates, and potential resting sites and commuting opportunities.
- 4.3.21 It should be noted that in areas where pine marten populations are sparse and territorial defence is relatively unimportant, searches for signs (incl. scats) may fail to detect presence simply because the animals are less likely to deposit scats as territory markers; in such situation most scats are deposited at den sites and in foraging areas.

Other species considerations

- 4.3.22 The results of the Desk Study and the Phase 1 Habitat Survey will inform the requirement for targeted survey for avian species, brown hare and hedgehog, based on the availability of suitable habitats.

Statutory and Planning Context

- 4.3.23 The compilation of the EcIA will take cognisance of the legislation, planning policies, conservation initiatives and general guidance presented in Table 4..5 below.

Table 4..5 – Legislation, Planning Policies, Conservation Initiatives and General Guidance related to Ecology and Ornithology

Scope	Document
European Legislation	Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (The Habitats Directive) Environmental Impact Assessment (EIA) Directive (2014/52/EU) on assessing the potential effects of projects on the environment Water Framework Directive 2000/60/EC of the European Parliament European Directive 2009/147/EC on the conservation of wild birds
National (UK) Legislation	The Wildlife and Countryside Act 1981 (as amended) (WCA) The Protection of Badgers Act (1992)

²² The Mammal Society (2012). *UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation*. (W. J. Cresswell, J. D. S. Birks, M. Dean, M. Pacheco, J. W. Trehwella, D. Wells, & S. Wray, Eds.). Southampton: The Mammal Society.

Scope	Document
Scottish Legislation	<p>The Conservation (Natural Habitats, &c.) Amendments (Scotland) Regulations 2007 (The Habitats Regulations)</p> <p>The Nature Conservation (Scotland) Act 2004 (NCA)</p> <p>The Wildlife and Natural Environment (Scotland) Act 2011 (WANE)</p>
Policy & Advice Documents	<p>The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011</p> <p>Scottish Planning Policy (SPP)</p> <p>BS 42020:2013: Biodiversity. Code of practice for planning and development 2013</p> <p>LLTNP Local Biodiversity Action Plan- Wildpark2020 (LBAP)</p> <p>The Scottish Biodiversity Strategy</p> <p>CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester</p> <p>Collins, J. (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines. (London The Bat Conservation Trust, Ed.) (3rd ed.).</p>

4.4 Consultation

- 4.4.1 During the consultation phase of the EclA consultation shall be carried out with organisations such as SNH, LLTNP, West Dunbartonshire Council, and other statutory bodies (as applicable) and bodies likely to hold ecological data. Data obtained from these sources will be used to define the ecology survey details and requirements and to inform the EclA.

4.5 Potential Effects

- 4.5.1 The assessment will draw on data collected during the desk study and fieldwork and will consider information gained during the consultation process.
- 4.5.2 The proposed survey work will provide sufficient information to place the site in context with regard to ecological and conservation value. This will provide sufficient information to identify the site's ecological sensitivities and to undertake the impact assessment based on the following broad themes:

Potential Negative Impacts

- Direct habitat loss, fragmentation and damage;
- Habitat loss, fragmentation and damage for faunal species;
- Habitat loss, fragmentation and damage for avian species;
- Discharge to a waterbody and other hydrological impacts;
- Disturbance to/ displacement of faunal species;
- Disturbance to/ displacement of faunal species;
- Terrestrial faunal injury and fatality; and
- Avian injury and fatality.

Potential Positive Impacts

- Habitat creation and enhancement
- 4.5.3 The assessment of potential impacts will be undertaken against the baseline and the significance of these assessed using standard EIA criteria and professional judgement in line with CIEEM Guidelines for the completion of the EclA. This approach allows the impacts to be systematically identified and assessed for each aspect and stage of the Project according to standard assessment criteria and parameters.
- 4.5.4 The assessment process will be iterative, drawing on the expertise and experience of not only the project ecologists, but consultees, hydrologists, noise experts, environmental professionals and the wider design team.

4.6 Assessment of Significance

- 4.6.1 Having established the baseline and the potential impacts that may arise from this type of development we will assess the impacts in terms of the significance of the resulting effects.
- 4.6.2 Important Ecological Features (IEFs) will be identified and the nature, duration and magnitude of the potential impact ascertained. From these parameters the significance of the effect will be derived along with a statement of confidence. This information will then be fed back to the design team during project meetings, both before, during and after the assessment has been undertaken to ensure that the design process remains dynamic and responsive.
- 4.6.3 The exercise will be quantitative as far as possible with the use of professional judgement where necessary. The assessment methodology and decisions made will be comprehensively recorded to allow for full transparency, thereby allowing a full evaluation of results.

4.7 Mitigation and Enhancement

- 4.7.1 Mitigation seeks first to avoid adverse impacts and where impacts are unavoidable to reduce the significance of residual effect to an acceptable level. It also seeks enhancement and compensation where possible to provide the best practicable option.
- 4.7.2 Many of the old stone buildings with slate or tile roofs have the potential to support roosting bats. Suitable bat roosting habitat could be increased across the site by the provision of bat boxes on new and existing structures.
- 4.7.3 Both intact and defunct species-poor hedgerows are present across the site and should be retained where possible. A hedgerow mix of wild flowers could be sown to enhance grass, herb and flower diversity along the borders of the hedges.
- 4.7.4 Areas of open grassland and rides within the woodland could be enhanced by planting a mix of native wild flowers along the margins. This would increase biodiversity and encourage invertebrate species to the area.
- 4.7.5 Log piles, fallen branches and standing dead -wood are present within the wood land along with associated lichens, mosses, ferns and fungi. These are important habitats for invertebrate species and should be retained and protected where possible.
- 4.7.6 Some areas of woodland will be required to be felled to facilitate the proposed development. Remaining areas of woodland to be retained where possible and protected during construction. New planting to link woodland areas would increase habitat connectivity.
- 4.7.7 The riparian corridor along the watercourses could be enhanced. This could include planting of trees to provide a range of habitats along the riparian corridor increasing biodiversity and connectivity and would protect the watercourses.

5 Noise & Vibration

5.1 Introduction

- 5.1.1 The noise assessment will consider both the suitability of the site for the intended use and the potential for noise from the project to impact existing residential receptors. The assessment will determine the significance of any noise impacts on sensitive receptors.
- 5.1.2 Certain construction activities may give rise to noise on occasion. The project is at the Planning in Principle stage and the development design has not been finalised. As details of potential construction activities (i.e. type and size of plant etc.) are unknown at this stage, construction noise impacts will not be considered in the EIA. The same approach will be applied to vibration effects arising from the construction. Noise and vibration from construction activities shall be considered with advice on mitigation measures provided in the construction noise management plan.

5.2 Baseline Conditions

- 5.2.1 Existing noise sources surrounding the site include road traffic, speedboat / jet ski noise and commercial noise from Loch Lomond Shores. Road traffic noise sources include the following roads; Balloch Road, Ben Lomond Way, Pier Road, Old Luss Road, Stoneyhollan Road & A82. Commercial noise from Loch Lomond Shores includes delivery vehicle noise, loading / unloading activities and mechanical services noise.

5.3 Relevant Guidance and Assessment Methodology

- 5.3.1 The noise assessment of the site will comprise the following elements:
- Measurement of existing noise environment at several locations in and around the proposed development site. This will include background noise measurements, measurement of existing road traffic noise, commercial noise from Loch Lomond Shores and speedboat/jet ski noise. (Noise monitoring locations to be confirmed following consultation with the Environmental Health Officer).
 - Assess the impact of existing noise sources including road traffic, speedboats/jet skis and commercial noise at Loch Lomond Shores on proposed residential resort accommodation.
 - Predict and assess the impact of new commercial and entertainment noise generated by the development at existing residential properties. A combination of desktop calculation and noise modelling using CadnaA software shall be used to predict and assess the noise.
 - Predict and assess the impact that the increase in road traffic noise generated by the new development will have on existing residential properties in the surrounding areas. CadnaA software shall be used along with predicted average annual weekly traffic flows (AAWT) to produce noise contours showing the impact in the surrounding areas.
 - If necessary, advise on mitigation measures required to reduce the noise to within noise assessment criteria.
- 5.3.2 Having established the baseline and the potential impacts that may arise from this Project we will assess the impacts in terms of the significance of the resulting effects. Noise Legislation relevant to the proposed development includes;

PAN 1/2011 Planning and Noise

Advice on the role of the planning system in helping to prevent and limit the adverse effects of noise is provided in *Planning Advice Note (PAN) 1/2011 'Planning and Noise'* (The Scottish Government, 2011a). The associated *Technical Advice Note (TAN) 1/2011 'Assessment of Noise'* (The Scottish Government, 2011b) provides guidance on Noise Impact Assessment methods.

Calculation of Road Traffic Noise

- 5.3.3 The Calculation of Noise from Road Traffic (CRTN) is the standard UK procedure which defines measurement and calculation methods for assessing road traffic noise.

World Health Organisation (WHO) Guidelines for Community Noise 1999

In *Guidelines for Community Noise*, (World Health Organisation, 1999), 55dB(A) was indicated as a criteria threshold below which few people are seriously annoyed (for an outdoor living area), during daytime and evening and other circumstances. To avoid sleep disturbance night time noise events exceeding 45dB (A) at the outside facades of living spaces should be avoided. In addition, the guidance identifies that negative sleep impacts are avoided at 30dB for continuous noise sources. It also provides guidance on the attenuation provided to internal living areas when windows are partially opened i.e. up to 15dB reduction in external noise levels.

BS8233: 2014 Guidance on sound insulation and noise reduction for buildings

- 5.3.4 BS8233:2014 (British Standards Institution, 2014) provides guidance on how to deal with control of noise from outside buildings, noise from plant and services within buildings and room acoustics for non-critical situations. It provides suggested internal noise levels which should not give rise to sleep disturbance during night time periods nor living room disturbance during daytime periods, as detailed in Table 5.1 below.

Table 5.1 – Indoor Ambient Noise Levels for Dwellings

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 dB LAeq, 16 hour	-
Dining	Dining room / area	40 dB LAeq, 16 hour	-
Sleeping (daytime resting)	Bedroom	35 dB LAeq, 16 hour	30 dB LAeq, 8 hour

BS 4142:2014: Methods for Rating and Assessing Industrial and Commercial Sound.

BS4142:2014 provides methods for rating and assessing sound of an industrial and/or commercial nature, which includes:

- Sound from industrial and manufacturing processes;
- Sound from fixed installations which comprise mechanical and electrical plant and equipment;
- Sound from loading and unloading of goods and materials at industrial and/or commercial premises; and
- Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements in or around an industrial and/or commercial site.

The methods described use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.

The standard is applicable to the determination of the following levels at outdoor locations:

- Rating levels for sources of sound of an industrial and/or commercial nature;
- Ambient, background and residual sound levels;
- Investigating complaints;
- Assessing sound from proposed, new, modified or additional source(s) of sound of an industrial and /or commercial nature; and
- Assessing sound at proposed new dwellings or premises used for residential purposes.

The noise assessment will consider the sensitivity of sensitive receptors using the following criteria:

- Rating Level (LA_r,Tr) – Background (LA₉₀,T) <5 dB(A), the sensitivity is LOW;

- Rating Level ($L_{Ar,Tr}$) – Background ($L_{A90,T}$) ≥ 5 dB(A), but less than 10 dB(A), the sensitivity is MEDIUM; and
- Rating Level ($L_{Ar,Tr}$) – Background ($L_{A90,T}$) ≥ 10 dB(A), the sensitivity is HIGH.

The magnitude of noise impacts i.e. the predicted change in noise level with and without the proposed development option is assessed using the criteria in Table 5-2.

Table 5.2 – Assigning Magnitude of Noise Impact

Magnitude	Change in noise level, $L_{Aeq, T}$ dB (After – Before)
Major	≥ 5
Moderate	3 to 4.9
Minor	1 to 2.9
Negligible	0.1 to 0.9
No Change	0

The magnitude of noise impacts from existing road traffic noise sources on proposed resort accommodation is assessed using the criteria in Table 5.3 below.

Table 5.3 – Assigning Magnitude of Road Traffic Noise Impact

Night Noise Level ¹ , $x = (\text{Existing} - 45) L_{Aeq,8h}$	Day Noise Level ¹ , $x = (\text{Existing} - 55) L_{Aeq,16h}$	Magnitude of Impact
> 15	> 10	Major adverse
$10 \leq x \leq 15$	$5 \leq x \leq 10$	Moderate adverse
$5 \leq x < 10$	$3 \leq x < 5$	Minor adverse
$0 \leq x < 5$	$0 \leq x < 3$	Negligible adverse
$x < 0$	$x < 0$	No adverse impact

A significance of Effects will then be assigned for each sensitive receptor using the criteria provided in Table 5.4 below.

Table 5.4 – Significance of Effects

Magnitude of Impact (After – Before) $L_{Aeq, T}$ dB	Sensitivity of Receptor based on likelihood of complaint $X = (\text{Rating } (L_{Ar, Tr}) - \text{Background } (L_{A90, T}))$ dB		
	Low ($x < 5$)	Medium ($5 \leq x < 10$)	High ($x \geq 10$)
Major (≥ 5)	Slight / Moderate	Moderate / Large	Large / Very Large
Moderate (3 to 4.9)	Slight	Moderate	Moderate / Large
Minor (1 to 2.9)	Neutral / Slight	Slight	Slight / Moderate
Negligible (0.1 to 0.9)	Neutral / Slight	Neutral / Slight	Slight
No change (0)	Neutral	Neutral	Neutral

5.4 Consultation

- 5.4.1 Consultation will be undertaken with West Dunbartonshire Council's Environmental Health Officer to agree the noise assessment methodologies.

5.5 Potential Effects

Noise Sensitive Receptors

- 5.5.1 The site is extensive in area and the development design not yet finalised. As such the most exposed noise sensitive receptors used for assessment purposes shall be confirmed at a later stage.
- 5.5.2 A number of existing residential properties in the area surrounding the site have been identified as most exposed to the noise of the proposed development. These include;
- Houses on Clairinsh;
 - Houses and flats on Pier Road;
 - Houses, businesses, guesthouses and hotels on Balloch Road;
 - Houses and Glenfarn Guesthouse on Drumkinnon Road;
 - Houses, Marstons Inn Lodge and Lomond Woods Holiday Park on Old Luss Road; and,
 - Houses on Lower and Upper Stoneyrollan Road.

Key Potential Impacts

- 5.5.3 The key potential noise impacts from the proposed development can be summarised as follows:

Whole Site

- The increase in road traffic noise generated by the development has the potential to impact on existing noise sensitive receptors throughout the surrounding area. This will be particularly relevant to residential properties on or around Balloch Road, Pier Road and Ben Lomond Way.
 - Potential for existing noise sources, such as road traffic on Balloch Road, Pier Road and Ben Lomond Way to impact on proposed resort accommodation.
 - Potential for commercial and entertainment noise from proposed resort attractions to impact on existing residential properties and proposed resort accommodation.
- 5.5.4 In addition to the above, the following area specific potential noise impacts are noted:

South-east

- Potential for noise from speedboats and jet skis on the River Leven to impact on proposed houseboats and lodges.
- Potential for road traffic entering and departing from the lodge car park to impact on existing residential properties on Pier Road and Clairinsh.

North-east

- Potential for noise from speedboats and jet skis on the River Leven to impact on proposed houseboats and lodges.

North

- Potential for noise from speedboats and jet skis on the River Leven to impact on proposed houseboats and lodges.
- Potential for delivery vehicle and mechanical services noise at Loch Lomond Shores to impact upon proposed resort accommodation.

Area South of Loch Lomond Shores

- Potential for delivery vehicle and mechanical services noise at Loch Lomond Shores to impact upon proposed resort accommodation.

- Potential for increase in traffic flow due to extension of, and increased use of car park to impact upon existing residential properties on Clairinsh.

West

- Potential for noise from Glendale Kennels to the south-west of the proposed development to impact upon proposed resort accommodation.

5.6 Mitigation and Enhancement

- 5.6.1 Mitigation seeks first to avoid adverse impacts and where impacts are unavoidable to reduce the significance of residual effect to an acceptable level. It also seeks enhancement and compensation where possible to provide the best practicable option.
- 5.6.2 If required, advice on mitigation measures required to reduce the noise to within criteria limits shall be provided.
- 5.6.3 Potential noise mitigation measures include;

Site Layout

Specifying adequate distance between source and noise-sensitive buildings or areas, use of acoustic screens around plant, limiting vehicle noise through speed control, road surfacing and driving style;

Acoustic barriers

Incorporating both fencing and baffle mounds;

Engineering

Reducing noise at source (e.g. with quieter machines or methods of working) and containment of noise (e.g. within acoustic enclosures).

6 Air Quality

6.1 Introduction

- 6.1.1 The air quality assessment will consider the suitability of the site in terms of local air quality for residential development, and the potential for the project to adversely affect local air quality, both during the construction phase and on completion. The key issues in relation to air quality are traffic emissions from the local road network both surrounding and accessing the site and dust emissions during the construction phase.
- 6.1.2 During the construction phase, certain operations may generate significant dust. It is anticipated that this will be managed through the use of best practice techniques e.g. a dust management plan. As construction activities are considered to be temporary, with any dust emissions being managed, the construction of the project will not be considered in the assessment to support a PPIP application. At the detailed planning stage, a Dust Management Plan will be compiled and agreed with West Dunbartonshire Council Environmental Health Department.

6.2 Baseline Conditions

- 6.2.1 The main pollutants of concern associated with road traffic emissions are NO₂, PM₁₀ and PM_{2.5}.
- 6.2.2 In order to inform the Scoping Report, the relevant 1km background air quality concentration maps were obtained from the Scottish Air Quality and DEFRA websites. The 2015 measured annual average concentrations of NO₂, PM₁₀ and PM_{2.5} are 5.89µg/m³, 9.30µg/m³ and 6.35µg/m³ respectively for background square (238500, 681500). Pollutant concentrations are therefore well below the relevant National Air Quality Objectives of 40µg/m³, 18µg/m³ and 10µg/m³ respectively which indicates that air quality is relatively good within the area of the site.
- 6.2.3 The 2016 Air Quality Progress Report for West Dunbartonshire Council (WDC) (the most up-to-date report available) does not identify any Air Quality Management Areas (AQMA's) within the council's boundary.
- 6.2.4 Air Quality monitoring carried out during 2015 throughout WDC's boundary identified no exceedances of the objectives for NO₂, PM₁₀ or PM_{2.5}. No significant changes in emission sources within the Council area have been identified during 2015, indicating air quality is generally good throughout the WDC area.
- 6.2.5 WDC monitor NO₂ using passive diffusion tubes at 24 locations throughout the council area, one of which is situated in proximity of the site as shown in Table 6.1 below.

Table 6.1 – Location of NO₂ Passive Diffusion Tube

Site Name	Site Type	OS Grid Reference	Orientation to Site	NO ₂ 2015 Annual Mean Concentration (µg/m ³)
DT22 (Balloch 1)	Urban Traffic	238584 681562	South West	24.6

Source: West Dunbartonshire Council

- 6.2.6 As shown in Table 6.1 above, DT22 reported a 2015 annual average NO₂ of 24.6µg/m³ further indicating that air quality is relatively good in proximity of the site.

6.3 Relevant Guidance and Assessment Methodology

- 6.3.1 Air quality in the UK is protected by national and regional legislation. In the UK, Part IV of the Environment Act 1995 places a statutory duty on local authorities to periodically review and assess the air quality within their area. This involves consideration of present and likely future air quality against air quality standards and objectives. Guidelines of the "Review and Assessment" process of local air quality were published in the 1997 National Air Quality Strategy (NAQS) and associated guidance and technical guidance. In 2000, the Government reviewed the 1997 Strategy and produced a revised Air Quality Strategy for England, Scotland, Wales

and Northern Ireland, which resulted in the production of air quality standards and objectives. The most current revision of the Strategy available is dated March 2011 (DEFRA, 2011).

- 6.3.2 The objectives adopted in Scotland are contained within the Air Quality (Scotland) Regulations 2000 and Air Quality (Scotland) Amendment Regulations 2002 for the purpose of Local Air Quality Management and consolidate the provisions of the previous Air Quality Regulations. The Air Quality Standards (Scotland) Regulations 2010 introduce objectives for Particles (PM₁₀, PM_{2.5}), Polycyclic Aromatic Hydrocarbons and lead with the Air Quality (Scotland) Amendment Regulations 2016 amending the Air Quality (Scotland) Regulations 2000 to bring into statute an objective for PM_{2.5}.

Air Quality Guidance:

- Technical Guidance LAQM.TG(16)
 - Policy Guidance (LAQM.PG(16))
 - Land-use Planning & Development Control: Planning for Air Quality (EPUK & IAQM, 2015)
 - Guidance on the assessment of dust from demolition and construction (IAQM, 2014)
- 6.3.3 An Air Dispersion Modelling System (i.e. ADMS-Roads) will be used for modelling the impacts on air quality from road traffic emissions. The assessment will be based on the results of the Traffic Assessment of the Project.
- 6.3.4 The air quality assessment will be carried out in accordance with current European and National legislation, guidance and best practice relating to this type of assessment and will include the following:-
- Consideration of current conditions;
 - Assessment of potential impacts; and
 - Mitigation measures and residual impacts as appropriate.
- 6.3.5 The assessment will be undertaken for the following years:
- 2015 for verification purposes and to determine baseline;
 - Year of Development opening - baseline;
 - Year of Development opening - baseline and committed; and
 - Year of Development opening - baseline, committed and generated.
- 6.3.6 The roads considered in the Air Quality assessment are listed below:
- Balloch Road:
 - A811 Lomond Road: and,
 - A82.

- 6.3.7 The sensitive receptors that shall be considered in the assessment are listed in Table 6.2 below and Figure 6.1. These will be agreed with West Dunbartonshire Council prior to the assessment process and are therefore not finalised.

Table 6.2 – Sensitive Receptors

SR I.D	SR Description
1.	The site of any proposed boutique hotel or hostel
2.	Site of future development
3.	South Eastern corner of Woodbank site
4.	Anchorage B&B (Existing Development)
5.	2 Clairinsh
6.	8 Drumkinnon Road
7.	Arbor Travel Lodge
8.	27 Laudervale Gardens
9.	28 Lomond Road
10.	Cameron Drive

N.B: Refer to Drawing No 168659-002 in Appendix F for all roads and sensitive receptor locations.

- 6.3.8 The impacts will be assessed as per the document “Land-Use Planning & Development Control: Planning for Air Quality”. This guidance provides an assessment approach to defining whether the impact on air quality associated with the proposed development should be of material concern. The magnitude of the impact is determined by assessing the amount a pollutant concentration at a sensitive receptor is predicted to change on comparison of ‘without development’ against the ‘with development’ scenarios.

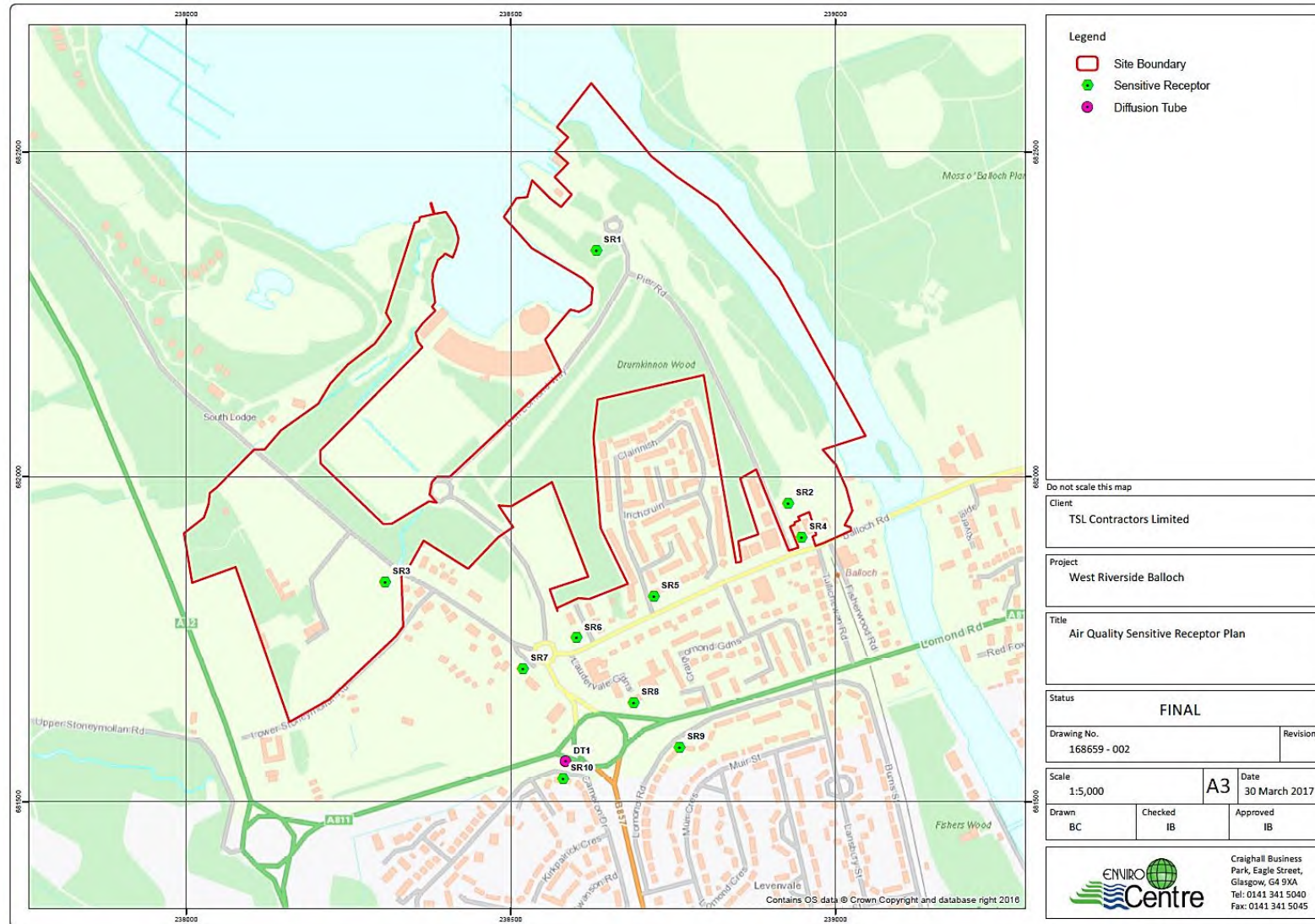
6.4 Consultation

- 6.4.1 Consultation with West Dunbartonshire Council’s Environmental Health Officer will be undertaken to confirm details regarding the assessment methodology.

6.5 Potential Effects

- 6.5.1 Although data indicates that air quality is generally good within the vicinity of the West Riverside and Woodbank House sites, the potential exists for a significant increase in traffic pollutant concentrations to impact existing and future residents in the vicinity of Balloch Road and the A811 Lomond Road.

Figure 6.1 – Roads and Sensitive Receptor Locations



6.6 Mitigation and Enhancement

- 6.6.1 Mitigation seeks first to avoid adverse impacts and where impacts are unavoidable to reduce the significance of residual effect to an acceptable level. It also seeks enhancement and compensation where possible to provide the best practicable option.
- 6.6.2 Mitigation measures to control dust during construction will be specified within contract documentation and incorporated into an Environmental Management Plan (EMP). The precise measures will depend on the intended operations and the degree of severity of the dust issue. Such measures may include but not necessarily be limited to:
- Regular water-spraying and sweeping of unpaved and paved roads to minimise dust and remove mud and debris;
 - Using wheel washes, shaker bars or rotating bristles for vehicles leaving the site where appropriate to minimise the amount of mud and debris deposited on the roads;
 - Sheeting vehicles carrying dusty materials to prevent materials being blown from the vehicles whilst travelling;
 - Enforcing speed limits for vehicles on unmade surfaces to minimise dust entrainment and dispersion;
 - Ensuring any temporary site roads are no wider than necessary to minimise surface area;
 - Dampening down of surfaces prior to their being worked; and
 - Storing dusty materials away from site boundaries and in appropriate containment (e.g. sheeting, sacks, barrels etc.).

7 Ground Conditions & Geology

7.1 Introduction

- 7.1.1 Certain ground conditions can be a cause of land instability, either as a result of natural processes or as a result of historical anthropogenic activities such as mining or excavation, resulting in landslides or slips and ground compression. The presence of contamination in soils and / or water can present risks to human health and the environment, which can adversely affect or restrict the beneficial use of land. Without appropriate mitigation, the presence of substances with potential to cause harm to human health, property and the wider environment may severely limit or altogether preclude development and the beneficial use of land.
- 7.1.2 The Ground Conditions and Geology Chapter in the Environmental Statement will describe:
- the baseline conditions (based on historical information and an intrusive ground investigation);
 - the approach to assessing the potential impacts arising from the ground conditions (instability) and land use (contamination) during the construction phase and subsequent operational phases; and
 - the mitigation measures required to prevent, reduce, or offset the impacts.
- 7.1.3 The potential environmental effects will be assessed using a “source – pathway – receptor” approach to identify potential pollutant linkages. The principal planning objective is to ensure that any unacceptable risks to defined receptors from any adverse ground conditions are identified so that appropriate action can be considered and taken to address those risks. Potential receptors include:
- Human Health – including current and future occupiers, construction and future maintenance workers, and neighbouring properties/third parties;
 - Ecological systems - international or nationally designated sites (as defined in the statutory guidance (Defra Circular 04/12)) “in the local area” will be identified as potential ecological receptors.
 - Controlled waters – including surface water and groundwater;
 - Property, Animal or Crop (existing or proposed) - including buildings, service lines and pipes, crops, livestock, pets, woodland; and
 - Archaeological sites and ancient monuments.
- 7.1.4 On the basis of the summary of baseline conditions, primarily related to historical activities in certain areas of the site (see below), significant effects associated with land and groundwater quality (including stability) are considered likely in the absence of mitigation.

7.2 Baseline Conditions

- 7.2.1 The baseline conditions will be determined from a review of:
- available published information including published geological, hydrogeological and aquifer vulnerability maps and historical Ordnance Survey maps;
 - existing ground condition information from the British Geological Survey’s (BGS) geology maps;
 - a review of studies previously undertaken within the site boundary; and
 - a ground investigation, which has been commissioned and ongoing, and will be completed prior to the Environmental Statement, with the objective of characterising the ground conditions, ground gas potential and groundwater status across the site.
- 7.2.2 Although certain areas of the site have been investigated previously, the most recent investigation was in 2005. As such, the ongoing ground investigation has been designed to provide data required to inform proposed development scheme.

- 7.2.3 An assessment of data gained during previous investigations will be incorporated into the ground investigation interpretive report.

Baseline Summary: Current Land Use

- 7.2.4 The site can be described as two parcels of land bisected by Old Luss Road: the West Riverside area lies to the north east of this road whilst land at Woodbank House is situated to the south west.

West Riverside

- 7.2.5 The West Riverside area is bounded to the north by the Loch Lomond Shores complex and Loch Lomond itself, to the west by a minor unnamed road and a landowner boundary, to the east by the River Leven and to the south by Balloch Road, the Balloch Road housing estate and Old Luss Road. The site is an irregular shape and effectively surrounds the Balloch Road housing estate on three sides. The site mainly comprises wooded areas (including Drumkinnon Wood) with recreational parkland and footpaths. Pier Road runs from south to north through the site. A beach area (Loch Lomond shore) is present in the north west and a small stream (tributary) flows south to north through the strip of land in the north western corner of the site where it enters Loch Lomond. The shoreline is used for mooring boats and pontoons are present in the water for this purpose.
- 7.2.6 An oil pipeline operated by Ineos runs east-west through the northern portion of the West Riverside site approximately parallel with Ben Lomond Way. The exact location is visible via pipeline markers and two fenced off areas in the north east near the junction of Ben Lomond Way and Pier Road – these are understood to be valve gear / headworks associated with the pipeline. The pipeline does not intrude into the Woodbank House area.

Woodbank House

- 7.2.7 The Woodbank House area currently comprises two relatively flat grassy fields in its eastern area which are bisected by an access track running from east to west. The track leads to an area of mixed woodland in the western area which has a more varied topography with levels generally rising to the west and becoming particularly steep in the north west. Within the woodland are the remnants of Woodbank House, outbuildings and a walled garden. The buildings are in a state of advanced disrepair as a result of a fire (at the main hotel building) and subsequent dereliction.

Baseline Summary: Historical Land Use

West Riverside

- 7.2.8 The available historical maps from 1864 show that the West Riverside area was primarily occupied by fields and woodland (labelled as Drumkinnon Wood). Balloch Rail Station was situated in the south east of the site and a railway line ran up the eastern site boundary connecting Balloch Pier to the wider rail network. Throughout the history of the site, various branches, sidings and associated infrastructure were present associated with the rail line. The north western most strip of land was shown to comprise mixed woodland, bounded by a track to the west. The south eastern portion (connecting the north western strip of land to the land in the east) was grassland (presumed to be agricultural).
- 7.2.9 An excavation labelled as a Sand Pit was shown in the north western area of the site, within Drumkinnon Wood in 1899 and a curling pond was present in the north eastern corner. The excavation in the west appears to have been enlarged on the mapping from 1958.
- 7.2.10 In the 1960s, excavations labelled as Gravel Pits were shown at the north western extent of the site. The excavations encroached onto the site, but were present more extensively offsite to the north west. The excavations continued to extend throughout the sequence of maps, until recent mapping which showed this area as part of Loch Lomond – indicating that the former excavations have been flooded – with a new shoreline created that is currently occupied by the Lomond Shores Centre.

West Riverside and Woodbank House

- 7.2.11 A Sand Pit was labelled in the south western corner of the site in 1968, however, the extent of the pit is unclear from the historical maps. There was no evidence of the pit in maps from 1983 and therefore the pit is presumed to be disused and decommissioned.
- 7.2.12 Two small refuse tips were shown in maps from 1968 to be approximately 50m east of the north western strip of land, and were removed in the 1970s.
- 7.2.13 A water pumping station was evident in the 1890s (Dumbarton Council Council) on the south eastern site boundary / off site.
- 7.2.14 The Loch Lomond silk drying and finishing factory with associated tanks was constructed in the 1930s and was located immediately offsite to the south along with several associated outbuildings and a railway line. The factory (subsequently labelled as Works) was present on mapping until around 1992. The works and infrastructure have since been demolished and the housing estate on Clarinish Road has been constructed in its place.

Woodbank House

- 7.2.15 Historical mapping shows the Woodbank House area to have remained largely unchanged since the first mapping (1864) when it comprised fields and woodland. The only significant infrastructure that appears to have been present on the site is associated with the (now derelict) hotel and outbuildings. The buildings were labelled on maps as Woodbank, and as a hotel from around 1958.

Geology

- 7.2.16 According to the available BGS information, the superficial deposits underlying the proposed development area largely comprise Glaciofluvial Deposits (centre) with Raised Marine Deposits of Clay, Silt, Sand and Gravel in the northern portion of the site boundary and Glaciofluvial Deposits in the south west. The superficial deposits are thought to extend to depths of around 50m below ground level (bgl). Where development (including sand and gravel extraction, railway land etc.) has taken place, localised areas of Made Ground are likely to be present.
- 7.2.17 The bedrock geology below the proposed development is the Teith Sandstone Formation comprising sandstones, mudstones and siltstones.

Hydrogeology

- 7.2.18 The baseline hydrogeology is summarised in Table 7.1 below.

Table 7.1 – Hydrogeology

Item	Details
Aquifer Classification	The superficial and bedrock aquifers underlying the majority of the site is considered highly productive (in terms of potential yield)
Depth to Groundwater	Unknown however a review of historical exploratory holes on the BGS website indicate a minimum groundwater depth of approximately 1m bgl
Groundwater Flow Direction	Unknown but assumed to be in a northerly direction, following local topography, towards Loch Lomond
Groundwater Abstraction	None known within 1km
Groundwater Vulnerability	SEPA has named the underlying groundwater body as Alexandria bedrock and localised sand and gravel aquifers,

Item	Details
	<p>described as having an overall status of Good with High confidence in 2008</p> <p>Due to the Good water status and the permeability of the underlying geology, the groundwater is considered to be moderately vulnerable</p>

Hydrology

- 7.2.19 The site is partially bounded to the north and east by Loch Lomond and the River Leven respectively.
- 7.2.20 According to SEPA, Loch Lomond has an ecological status of 'Poor' and a chemical status of 'Pass'. These assessments are a result of multiple pressures on the Loch including diffuse pollution (from farming practices / sewage) morphological alterations, recreational activities and abstraction.
- 7.2.21 Likewise, the River Leven has a SEPA ecological status of 'Poor' and chemical status of 'Pass'.
- 7.2.22 Taking into account the status of the water bodies and their immediate proximity to the proposed development site, their vulnerability is considered to be Moderate.

Potential for Contamination and Geotechnical Considerations

- 7.2.23 A review of the site history and environmental context (summarised above) has identified the following issues and potential constraints that will require investigation, assessment and potential remediation in support of the proposed development:
- Railway land, sidings and infrastructure in the east – these represent a potential source of contamination from the materials brought onto the site to make up the railway lines (ballast) and the spills and leaks of fuel and lubricants and other chemicals.
 - Infilled ground associated with localised excavations (e.g. sands and gravel pits) – excavations that have been backfilled with unknown material to unknown specification represent a potential source of contamination, gas generation and instability.
 - Potential soil and groundwater contamination associated with the silk dyeing and finishing factory and 'works' located immediately offsite to the south – this potentially contaminative industrial land use could have impacted land quality and groundwater quality, and the possibility exists for contamination to have migrated onsite with groundwater flow.
 - Buildings and infrastructure associated with the former Woodbank House – the presence of the derelict buildings themselves represent a potential constraint to the investigation and development. In terms of potential contamination, the exact former uses of the buildings are unknown, however, heating and fuel use represent potential sources of localised contamination. The main house has been largely destroyed by fire, leaving a potential legacy of contamination in the former building footprint. The presence of asbestos in the ruins cannot be ruled out.
 - Ineos oil pipelines – the pipelines running through the site from west to east represent a constraint to investigation and the proposed development. A stand-off zone within which no development and limited ground investigation will exist on either side of the pipelines.
 - Made Ground / Fill – Made Ground or fill material may be present in localised areas of the site, with unknown physical and chemical properties. Made Ground represents a potential source of instability, contamination and ground gas.
 - The geotechnical properties of the superficial deposits will require assessment prior to the development.

Proposed Ground Investigation

- 7.2.24 At the time of writing, a site wide intrusive investigation has been commissioned and is ongoing. The results of the investigation will be available to inform this aspect of the Environmental Statement. The proposed investigation will comprise (approximately) 54 window sampler boreholes to depths of around 5m.
- 7.2.25 In situ and laboratory based geotechnical testing will be undertaken and the results assessed with respect to the foundation and drainage design of the proposed development.
- 7.2.26 Representative soil and groundwater samples will be collected for laboratory analysis and the contamination status assessed.
- 7.2.27 Environmental monitoring standpipes will be installed in representative boreholes and gas and groundwater monitoring undertaken.
- 7.2.28 Following the assessment of the ground investigation data, recommendations for further (more detailed) investigations and, if necessary, remediation measures will be provided.
- 7.2.29 Recommendations for the design of the foundation and drainage solutions for the site will be produced.

7.3 Relevant Guidance and Assessment Methodology

- 7.3.1 The general approach to the assessment of contamination and stability issues during the ground investigation and the production of the Environmental Statement are set out below.

Relevant Guidance

- 7.3.2 Policy on land contamination aims to prevent new contaminated land from being created and promotes a risk based approach to addressing historical contamination. With regard to historical contamination, regulatory intervention is held in reserve for land that meets the legal definition and cannot be dealt with through any other means, including through planning. Land is only considered to be "contaminated land" in the legal sense if it poses an unacceptable risk.
- 7.3.3 UK legislation on contaminated land is principally contained in Part IIA of the Environmental Protection Act 1990 (which was inserted into the 1990 Act by section 57 of the Environment Act 1995). Part IIA was introduced in Scotland on 14 July 2000 and provides a risk-based approach to the identification and remediation of land where contamination poses an unacceptable risk to human health or the environment. The broad approach, concepts and principles behind land contamination management adopted by the Part IIA regime are applied to the determination of planning applications.
- 7.3.4 The Regulatory Reform (Scotland) Act 2014 introduces a duty on the Scottish Environment Protection Agency (SEPA), and Scottish Natural Heritage (SNH), among others, to promote sustainable economic growth. The Act enables regulations to be made to apply a "fit and proper person" test to decisions on pollution prevention and control permits. Enforcement options for regulators are also extended. A new offence of "significant environmental harm" is created, covering harm to the quality of the environment, harm to the health of humans and other organisms, damage to property, offences to human senses and impairment or interference with amenities or other legitimate uses of the environment. At the time of writing the Scottish Government (SG) is still working on the guidance to support the Regulatory Reform (Scotland) Act 2014 section 45 contaminated land and special sites.
- 7.3.5 The Contaminated Land (Scotland) Regulations 2000 introduced a scheme for remedying contaminated land, including the identification of 'special sites' enforced by SEPA, remediation notices and their contents, and sets out the information to be held on a contaminated land register maintained by local councils. The Contaminated Land (Scotland) Regulations 2005 aligned the contaminated land regime with the water environment protection regime where contaminated land is a source of pollution. Environmental Protection Act 1990: Part IIA Contaminated Land - Statutory Guidance: 2006 (replaces the earlier 2000 version) contains revised guidance to place the changes to the contaminated land regime into context. Annex 3 provides a short summary of Scottish Executive policy in this field, a description of the contaminated land regime, a guide to the 2000 Regulations and a note on the 2005 Regulations.

The guidance follows established approaches to risk assessment, including the concept of contaminant-pathway-receptor.

- 7.3.6 Planning Advice Note PAN 33 (2000) Development of contaminated land promotes a suitable for use approach and provides advice on various matters including the implications of the new contaminated land regime for the planning system and the development of contaminated land. Planning Advice Note (PAN) 51 (2006) Planning, Environmental Protection and Regulation provides useful guidance on radioactive contaminated land and Special Sites and aligns planning advice with The Environmental Protection Act: Part IIA Contaminated Land Statutory Guidance (2006), in terms of the specific need to consider potential contamination risks that may impact upon water and the wider environment.

Approach

- 7.3.7 Guidance on ground condition assessment is given in CLR 11 Model Procedures for the Management of Contaminated Land (EA, 2004), that sets out a process based on a tiered risk assessment with increasing level of detail required to progress through the tiers. The guidance includes a definition of 'risk', where a risk is said to be a combination of *"(a) the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land; and (b) the scale and seriousness of such harm or pollution if it did occur"*.
- 7.3.8 In order to inform the assessment effects and impacts, it is intended to prepare a Ground Conditions Report comprising a ground stability appraisal that summarises the likely residual ground conditions, the environmental setting and assesses the information to identify potential issues which might have associated environmental liabilities or affect the site redevelopment. A further ground investigation will be completed with the objective of further characterising the ground conditions, ground gas potential and groundwater status across the site. The information will be used to inform remediation, if required, and foundation design together with any mitigation measures.

Methodology

- 7.3.9 In order to assess potential effects and identify the need for mitigation measures, Conceptual Site Models (CSM) will be prepared for baseline, construction phase and operational phase of the development using the data identified above. Potential effects will be considered separately for each potentially complete pollutant linkage such that any potential impacts are identified and mitigated as required.
- 7.3.10 Each CSM considers:
- The principal pollutant hazards (the contamination sources);
 - The principal pathways between the identified hazard(s) and receptor(s); and
 - The principal receptor(s) at risk from the identified hazards, for example, people, environmental assets, surface or groundwater.
- 7.3.11 The qualitative risk is determined by the interrelationship between the potential for a source of contamination to be present, the potential for migration of the contaminant along a given pathway, and the significance of potential receptors. A pollutant linkage is identified where all three elements (source-pathway-receptor) are present.
- 7.3.12 The magnitude and likelihood of the possible consequences that may arise as a result of a hazard are assessed and a classification allocated as Very Low, Low, Moderate, High or Very High. The criteria used are reproduced in Tables 7.2 to 7.4 below.

Table 7.2 – Criteria for Classifying Hazards / Potential for Generating Contamination

Classification/Score	Potential for generating contamination/gas based on land use
Very Low 1	Land Use: agriculture, residential, allotment, recent retail or office use Contamination: None or low level residual concentrations. Gas generation potential: Inert Made Ground

Low 2	Land Use: recent small scale industrial, railway tracks, small scale fuel storage (heating). Contamination: Locally or slightly elevated concentrations. Gas generation potential: Shallow thickness of Alluvium
Moderate 3	Land Use: railway yards, collieries, scrap yards, light industry, engineering works. Contamination: Locally elevated concentrations. Gas generation potential: Dock silt and substantial thickness of organic alluvium/peat
High 4	Land Use: gas works, chemical works, heavy industry, non-hazardous landfills. Contamination: Possible widespread elevated concentrations. Gas generation potential: Shallow mine workings Pre 1960's landfill
Very High 5	Land Use: hazardous waste landfills. Contamination: Likely widespread elevated concentrations. Gas generation potential: Domestic landfill post 1960
"Greenfield" is land which has not been developed including not used for crop production or animal husbandry. In this instance a Greenfield site will not have a contamination source therefore there are no pollutant linkages to be assessed.	

Table 7.3 – Criteria for Classifying Probability

Classification	Definition
High likelihood	There is a pollution linkage and an event either appears very likely in the short-term and almost inevitable over the long-term, or there is already evidence at the receptor of harm / pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter-term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.

Table 7.4 – Significance Ranking according to Severity of Consequence and Probability

Classification	Description
Very high	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation is likely to be required in the short term.

High	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short-term and are likely over the longer-term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer-term.
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

- 7.3.13 The significance of any effects of the proposed development related to ground contamination is then determined by comparing the risks associated with the construction phase to the baseline conditions, and the risks associated with the operational phase with the baseline conditions, both with the mitigation measures in place. These effects are assessed using the matrix presented in Table 7.5 below.

Table 7.5 – Determining Significance of Potential Effects

		Significance of Potential Effect				
Risk Related to Proposed Scheme	Very High	Severe Adverse	Major Adverse	Moderate Adverse	Minor Adverse	Not Significant
	High	Major Adverse	Moderate Adverse	Minor Adverse	Not Significant	Minor Beneficial
	Moderate	Moderate Adverse	Minor Adverse	Not Significant	Minor Beneficial	Moderate Beneficial
	Low	Minor Adverse	Not Significant	Minor Beneficial	Moderate Beneficial	Major Beneficial
	Very Low	Not Significant	Minor Beneficial	Moderate Beneficial	Major Beneficial	Major Beneficial
		Very Low	Low	Moderate	High	Very High
Risk Related to Existing Baseline Conditions						

- 7.3.14 For example, if a pollutant linkage is identified as having a low risk in the baseline and a moderate risk in the Proposed Scheme this would be assessed as a Minor Adverse effect.

- 7.3.15 Table 7.6 presents descriptions of examples for ground condition which are broadly based on those presented in Section 6.3 of CIRIA Report C552.

Table 7.6 – Descriptions of Significance of Potential Effect for Ground Conditions

	Description
Severe	Generally associated with receptors having a very high sensitivity classification. Controlled water examples would be a site within a Source Protection Zone

	(SPZ) or a Primary surface water body within 100m. Acute (short term) risks to human health. Catastrophic damage to buildings/property (e.g. by explosion).
Major	Generally associated with receptors having a high sensitivity classification. Controlled water examples would be a site over a Principal aquifer outside of a source protection zone or a Primary surface water body within 100m. Chronic (long term) risks to human health
Moderate	Generally associated with receptors of local or county importance and/or with the potential for replacement. Controlled water examples would be a site over a Secondary A aquifer or within 100m of a Secondary surface water body
Minor	Generally associated with receptors having a low sensitivity classification (receptor of local importance). Controlled water examples would be a site over a Secondary B aquifer or a Tertiary surface water body within 100m. Protective equipment required during construction works. Repairable damage to buildings or property
Not Significant	No effect or an effect which is beneath the level of perception, within normal bounds of variation or within the margin of forecastable error. Generally associated with receptors having a very low sensitivity classification. Controlled Water examples would be a site over unproductive groundwater and surface water body more than 250m away.

7.3.16 This comparison approach allows any effects of the Proposed Scheme during the Construction and Operational Phases to be identified as Beneficial, Neutral or Adverse and, depending on the magnitude of the change in risk, to be assessed as being Negligible, Minor, Moderate, Major or Severe.

7.3.17 The mitigation measures that will be required to address possible unacceptable risks during both the Construction and Operational Phases are then identified and the residual risks assessed with the mitigation measures in place.

7.4 Consultation

7.4.1 It is proposed to consult with the following during the completion of the ground investigation and EIA:

- Scottish Environmental Protection Agency (SEPA); and
- West Dunbartonshire Council (WDC) Environmental Health Officer.

7.5 Potential Effects

7.5.1 The potential for significant contamination based on land use is considered to vary between Low and High across the site, depending primarily on the former use.

7.5.2 The site is considered to be located in an environmental setting that is sensitive in respect of surface water and associated ecological systems.

7.5.3 The presence of contamination, bearing capacities of the ground, groundwater and ground gas status of the site will be better quantified following the commissioned ground investigation.

7.6 Mitigation and Enhancement

7.6.1 Good practice advises that the EIA should be an iterative process rather than a single, post design, environmental appraisal. In adopting this approach the findings of the environmental and technical studies will be continually used to inform the design of the proposed development.

- 7.6.2 In the event that likely significant negative effects are identified, the development will be amended to avoid or minimise these as far as practicable within the parameters of the project. This is referred to as 'embedded mitigation' i.e. mitigation which has been embedded within the project design.
- 7.6.3 A Construction Environmental Management Plan (CEMP) will be prepared which will limit effects through best practice with more detailed mitigation measures developed through the design process.

8 Water, Hydrology & Flood Risk

8.1 Introduction

- 8.1.1 The water environment is considered to encompass hydrology, hydrogeology, drainage and flooding.
- 8.1.2 The proposed development has the potential to cause changes to the baseline hydrological conditions at the site and within the local vicinity. Given the importance of water as a valued resource, and the importance of ensuring sustainable development, an assessment of the water environment is considered essential.

8.2 Baseline Conditions

- 8.2.1 The site comprises two distinct areas of land at West Riverside, adjacent to the River Leven, and Woodbank House, located between Old Luss Road and the A82.
- 8.2.2 The West Riverside area is bounded to the north by the Loch Lomond Shores complex and Loch Lomond itself, to the west by a minor unnamed road and a landowner boundary, to the east by the River Leven and to the south by Balloch Road, the Balloch Road housing estate and Old Luss Road. The site is an irregular shape and effectively surrounds the Balloch Road housing estate on three sides. The site mainly comprises wooded areas (including Drumkinnon Wood) with recreational parkland and footpaths. Pier Road runs from south to north through the site. A beach area (Loch Lomond shore) is present in the north west and a small stream (tributary) flows south to north through the strip of land in the north western corner of the site where it enters Loch Lomond. The shoreline is used for mooring boats and pontoons are present in the water for this purpose.
- 8.2.3 The Woodbank House area currently comprises two relatively flat grassy fields in its eastern area which are bisected by an access track running from east to west. The track leads to an area of mixed woodland in the western area which has a more varied topography with levels generally rising to the west and becoming particularly steep in the north west. Within the woodland are the remnants of Woodbank House, outbuildings and a walled garden. The buildings are in a state of advanced disrepair as a result of a fire (at the main hotel building) and subsequent dereliction.
- 8.2.4 SEPA's Indicative Flood Maps (Figure 8-1)²³ indicate that the northern part of the site surrounding Balloch Pier and the western banks of the River Leven running through the site are located within the 1 in 200 year return period flooding envelope (medium likelihood of flooding), however a flood study of the river undertaken by Jacobs (Figure 8-2)²⁴ which provides a more detailed outline of the modelled flood extents along the river. This report highlights that the northern part of the site from the existing roundabout on Pier Road and above, would be inundated in the 1 in 200 year return period event, and more substantially in the 1 in 500 year return period event. Only a small strip of land along the banks of the River Leven through the site would be affected by this flooding, however it is shown to route out of the western banks immediately upstream of the Balloch Road bridge to a larger extent, affecting the areas surrounding Sweeney's Cruises, the boathouse, slipways and jetty.
- 8.2.5 The Woodbank House area of the site is not indicated as susceptible to river flooding on SEPA's indicative flood maps, however there are areas shown as being at potential risk of surface water flooding that coincide with the two small watercourses running through this area from the hills to the west towards Loch Lomond. Watercourses with catchment areas smaller than 3km² are not shown on the SEPA river flood maps and the surface water flood risk will reflect the lower lying ground in the vicinity of these watercourses.

²³ <http://map.sepa.org.uk/floodmap/map.htm>

²⁴ Jacobs 2009, River Leven Flood Study Review & Update of Original Work

- 8.2.6 In order to fully inform the EIA, a Flood Risk Assessment will be carried out for the site to more accurately assess the risk to all aspects of the proposed site.

Figure 8.1 – SEPA Flood Map

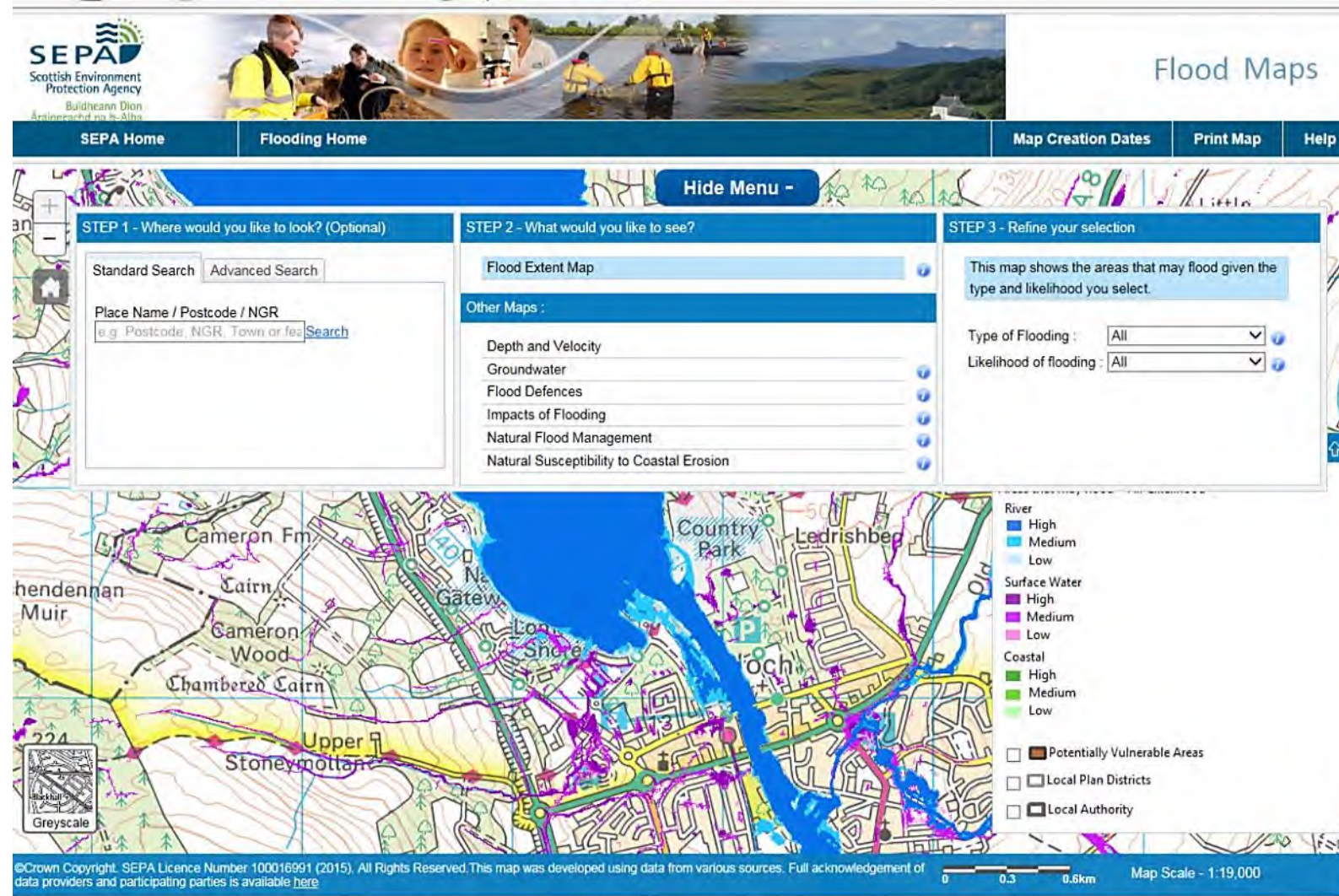


Figure 8.2 – Jacobs River Leven Flood Study



Source: Jacobs River Leven Flood Study (2009)

8.3 Relevant Guidance and Assessment Methodology

- 8.3.1 Assessment will be undertaken in accordance with current European and National Legislation, Guidance and Best Practice.
- 8.3.2 The assessment of the water environment will build upon the information documented in this scoping report including:
- Desk-based review of available information, including previous studies, geological maps, identification of local water receptors, surface water drainage, hydrogeological data, wetlands including groundwater dependent terrestrial ecosystems (GWDTEs) and previous land use where applicable;
 - Consultation with SEPA, West Dunbartonshire Council, Loch Lomond & the Trossachs National Park Authority and Scottish Water;
 - A walkover survey of the site;
 - Evaluation of baseline water environment conditions;
 - Identification of relevant issues and potential impacts from the Project with regards to the water environment.
- 8.3.3 Following the baseline study the assessment of potential impacts on the water environment will be undertaken. This assessment will be based on the following methodology:
- Identification of sensitive receptors;
 - Identification of potential impacts and their significance;
 - Identification and assessment of appropriate mitigation measures;
 - Statement of residual impacts; and
 - Preparation of chapter for Environmental Statement, including plans.
- 8.3.4 Sensitive receptors will be identified and the magnitude of the potential impact ascertained. From these parameters the significance of predicted effects will be derived. This information will then be fed back to the design team during project meetings, both before, during and after the assessment has been undertaken to ensure that the design process remains dynamic and responsive. The exercise will be quantitative as far as possible with the use of professional judgement where necessary. The assessment methodology and decisions made will be comprehensively recorded to allow for full transparency, thereby allowing a full evaluation of results.
- 8.3.5 The methodology for assessing the identified impacts on the water environment and determining mitigation measures will take cognisance of the following legislation and guidance:
- Water Environment and Water Services (Scotland) Act 2003;
 - The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended): A Practical Guide (SEPA);
 - Flood Risk Management (Scotland) Act 2009;
 - Scottish Planning Policy (2014), para. 254–268;
 - Masters-Williams, H., Heap, A., Kitts, H., Greenshaw, L., Davis, S., Fisher, P., Owens, D. (2001). Control of water pollution from construction sites. Guidance for consultants and contractors (C532). London: CIRIA;
 - Planning Advice Note 79 (Water & Drainage);
 - Guidelines for Water Pollution Prevention from Civil Engineering Contracts;
 - Pollution Prevention Guidelines 1 – 28 (as appropriate);
 - SEPA (2017). Guidance for Pollution Prevention including GPP2 and GPP5
 - SEPA (Various). Pollution Prevention Guidelines including PPG 1, 3, 6 and 21;

- SEPA (2009). Engineering in the water environment good practice guide; Temporary construction methods. Stirling;
- SEPA (2015). Technical flood risk guidance for stakeholders;
- SEPA (2016). Supporting Guidance; General binding rules for surface water drainage systems (No. WAT-SG-12). Stirling;
- SEPA (2016). Regulatory method; Sustainable Urban Drainage Systems (SUDS or SUD Systems) (No.WAT-RM-08). Stirling;
- SEPA (2014). The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended); A Practical Guide; and
- Woods Ballard, B. (2015). The SUDS Manual. London: CIRIA.

8.4 Consultation

- 8.4.1 Consultation with SEPA to identify any history of flooding and obtain details of any licenced abstractions or discharges under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) [CAR].
- 8.4.2 Consultation with LLTNPA and West Dunbartonshire Flood Prevention Team and Environmental Health Department to identify any history of flooding and obtain details of any Private Water Supplies within the vicinity of the site.

8.5 Potential Effects

- 8.5.1 The key potential impacts on the water environment can be summarised as follows:
- Potential changes to water quality, primarily during the construction phase;
 - Potential changes in drainage regime and flow patterns; and
 - Potential impact with regards to flooding both on and off site.
- 8.5.2 These impacts have the potential to result in significant effects and will be the focus of the water environment impact assessment to fully demonstrate their significance and where necessary identify specific mitigation measures. The origin of the key impacts and their potential effects are summarised below.

Water Quality

- 8.5.3 During construction, activities on site such as: soil stripping; storage and placement; concrete pouring; and the use and storage of fuels and chemicals may increase the risk of pollutants (e.g. suspended solids, fuel, oils, and concrete) entering the watercourse, or shallow groundwater and being transported out with the site. The site bounds the southern shore of Loch Lomond, which has been designated in parts a Site of Special Scientific Interest (SSSI), a Special Area of Conservation (SAC), a Special Protected Area (SPA) and Ramsar site, and as such it is considered to be a sensitive receptor in terms of any impacts on water quality.
- 8.5.4 Based upon current SEPA River Basin Management Plans²⁵ Loch Lomond is currently classified with an overall status of Moderate, and the River Leven as a heavily modified water body with poor ecological potential.

Surface Water Drainage & Flow Patterns

- 8.5.5 During the construction process and once the development is complete, the existing drainage patterns on site may be disrupted or altered by the development. This could be caused by the introduction of impermeable surfaces preventing infiltration and increasing runoff, or by changes in site topography which may lead to a modified hydrological regime. This type of change in flow

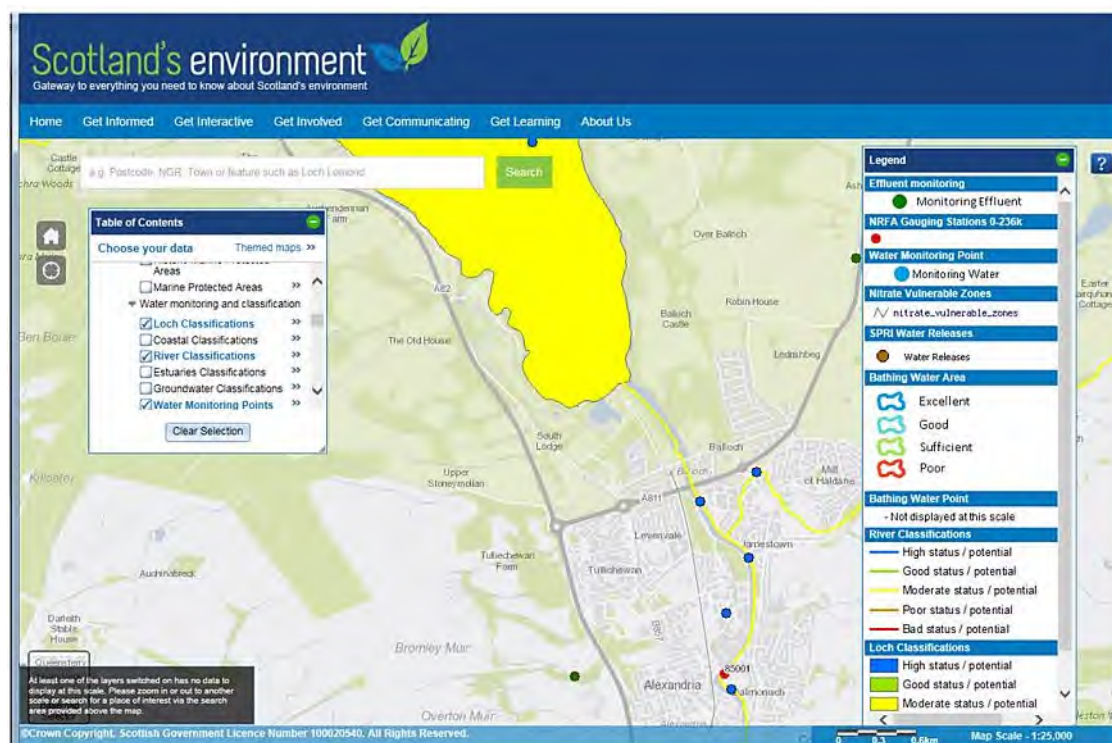
²⁵ <http://map.environment.scotland.gov.uk/seweb/map.htm>

patterns, though not necessarily altering the overall water balance of the site, may change the site's response to rainfall events, which may have effects both within and downstream of the site and could be significant if not effectively managed. There is also the potential for changes in drainage patterns to affect any GWDTEs in the vicinity.

Flooding

- 8.5.6 The SEPA flood map and flood extents plans from the Jacobs Flood Study identify a risk of flooding within the northern part of the site at the head of the River Leven, as well as the area surrounding Sweeney's Cruises and the existing tourist information centre. An FRA will therefore be undertaken to establish the likely frequency and extent of any flood events across the site and to inform the design of the site to avoid any areas of floodplain. SUDS will also be implemented within the site design to ensure that the runoff from the development will be attenuated to greenfield rates to ensure that the risk of flooding downstream is not increased as a result of the development.

Figure 8.3 – SEPA River Basin Management Plans



- 8.5.7 The FRA will extend to the smaller watercourses to the west as they flow towards the main site.

8.6 Mitigation and Enhancement

- 8.6.1 Mitigation seeks first to avoid adverse impacts and where impacts are unavoidable to reduce the significance of residual effect to an acceptable level. It also seeks enhancement and compensation where possible to provide the best practicable option. The magnitude and extent of effects identified will inform and influence the type of mitigation suitable for the development. Mitigation will be discussed and agreed with the design team and inform the environmental management plan and the construction method statement. A summary of the residual impacts following mitigation will be provided.
- 8.6.2 For a project such as this typical mitigation includes the provision of effective construction pollution prevention measures; a Sustainable Drainage System (SUDS) to attenuate surface water runoff and provide water quality treatment; and development out with the functional flood plain, defined as the 0.5% annual exceedance probability (AEP) flood extent.

9 Landscape & Visual Impact

9.1 Introduction

- 9.1.1 Gillespies LLP has been appointed to produce the landscape and visual impact chapter of this Scoping Report.
- 9.1.2 In accordance with best practice, a preliminary desktop Landscape and Visual Assessment (LVA) has been undertaken, together with a visit to the proposed development site and surrounding areas. The primary purpose of this exercise is to undertake a sufficient level of assessment to identify any environmental effects of the project associated with landscape and visual resources of the site and surrounding area, which could be significant and adverse. When undertaking the Landscape and Visual Impact Assessment (LVIA), those effects with greatest significance will receive the greatest attention. The LVIA will form part of the Environmental Statement (ES) that will be submitted to Loch Lomond and Trossachs National Park in support of the application for Planning Permission in Principle.
- 9.1.3 The methodology to be used for the full assessment of the landscape and visual effects is outlined in Section 9.3.

9.2 Baseline Conditions

- 9.2.1 A fuller description of the project site, the site history and the site conditions have been set out in Chapter 3.
- 9.2.2 In summary, there are two sites which form the proposed development and are collectively referred to as 'the site':
- West Riverside, which includes Drumkinnon Woods to the south of the Loch Lomond Shores Development. It is part of the Loch Lomond and The Trossachs National Park and is on the banks of Loch Lomond and the River Leven. The site is also situated adjacent to an area designated as Gardens and Designed Landscapes.
 - Woodbank House is the former Woodbank Hotel, also known as Hamilton House, and is located between the A82 and Old Luss Road to the west of the Loch Lomond Shores development.

West Riverside

- 9.2.3 Drumkinnon Woods is a small area of woodland, with walks and picnic areas, located just to the south-east of Loch Lomond Shores on undulating landform, most likely as a result of former man-made activities. Running east-west through the woodland is a major gas pipeline with associated substations. The woodland is a variety of native tree species, including a number of semi-mature oak. The woodland currently provides a setting for the housing to the south, providing screening and a buffer to the Loch Lomond Shores development.
- 9.2.4 The eastern part of the woods includes a corridor of open grassland with more mixed pioneer woodland species that would benefit from being thinned. This area of woodland lies alongside the River Leven, which flows into the Clyde. Views out are limited due to the woodland and views of the river and the loch are only experienced at the edge of the woodland.
- 9.2.5 The woodland is bounded to the west and north by roads accessing Loch Lomond Shores and the pier. Housing 'pushes' into the site area to the south.

Woodbank House

- 9.2.6 This site is situated to the west of Old Luss Road at the north-western extent of housing in Balloch. The A82 is situated approximately 500m to the west of the site. To the east, Old Luss Road provides access to the housing area and leads to Cameron House and Marina.

- 9.2.7 At the centre of the site are the remains of Woodbank House, a Grade-A listed property, which is now largely a roofless ruinous shell with only part of the south elevation still roofed.
- 9.2.8 The remains of the house are accessed from the Old Luss Road by a drive through an area of paddock, used for grazing horses and surrounded by the remains of the former terraced gardens, with remains of the original garden walls. Many of the trees in the area have self-seeded but do provide a core and a structure to the site.
- 9.2.9 The rising ground between Old Luss Road and the A82 does afford views, in limited locations towards Loch Lomond.

9.3 Relevant Guidance and Assessment Methodology

- 9.3.1 The LVIA will consider the likely impacts of the project on the landscape and visual amenity of the area taking into account the character of the development site and the visual inter-relationships within the wider area. The assessment will be based on the description of the proposed development, described in detail in a separate Chapter of the ES and supporting Figures and diagrams.
- 9.3.2 The change of the character and quality to landscape receptors i.e. impacts, arising from the proposed development, will be assessed within the LVIA. Impacts on visual receptors will similarly be assessed. The resulting significance of landscape and visual effects will then be determined taking into account any mitigation measures.

Baseline Conditions

- 9.3.3 A summary of the proposed development will be included as part of the LVIA, with the full description being set out in a separate chapter of the ES. The baseline information for the LVIA will describe the existing site conditions of the study area and a review of planning policy and context. The LVIA will be undertaken in accordance with current legislation and guidance.

Study Area

- 9.3.4 The landscape character of the site will be described, to place it and its immediate environs in context and to identify the key characteristics with a proposed 20km radial study area. A study area of this radius has been selected as it includes potentially significant visual receptors; Ben Lomond and the Arrochar Alps within the Loch Lomond and The Trossachs National Park. Beyond this distance it is not expected that any views, or intervisibility between the proposed development and landscape and visual receptors, will give rise to any significant adverse effects.

Planning Policy and Context

- 9.3.5 The assessment will be prepared with reference to the following:
- Loch Lomond and The Trossachs National Park Local Development Plan, December 2016
 - Loch Lomond and The Trossachs National Park, National Park Partnership Plan 2012-2107
 - SNH Review 140 Loch Lomond and The Trossachs National Park Landscape Character Assessment, 2009
- 9.3.6 These plans contain several policies for the protection and enhancement of the landscape character and quality. These would be reviewed and taken into consideration when determining any likely effects arising from the impacts of the proposed development on the landscape receptors.

Legislation and Guidance

9.3.7 The assessment will be prepared with reference to the following documents:

- Guidelines for Landscape and Visual Impact Assessment (GLVIA), published by the Landscape Institute and the Institute of Environmental Management and Assessment, 3rd Edition 2013;
- Loch Lomond and The Trossachs Landscape Assessment;
- Landscape Character Assessment: Guidance for England and Scotland

Zone of Theoretical Visibility (ZTV)

9.3.8 Draft ZTV's have been prepared for the LVIA, on the basis of both a 'bare ground' survey i.e. it does not take into account any localised screening by buildings, other structures, trees / vegetation or localised landform and a second ZTV will take into account major tree groups and woodlands (assuming a mature height of 15m) and built-up areas (assuming a ridge-line height of 9.5m) with locations determined from the OS mapping. This helps to demonstrate the screening effects of elements within the landscape which has a bearing on the significance of effects, particularly with respect to visual receptors.

9.3.9 Both draft ZTV's prepared at Scoping stage consider what can theoretically be seen of the most significant elements of the proposed development i.e. roof lines of accommodation and leisure centres and a proposed tower down to ground level.

9.3.10 Further ZTV's would be prepared during the LVIA should the proposals be developed without a tower to demonstrate the different extent of potential visibility.

Desk-based study and site visit

9.3.11 A desk based study will be undertaken to gain an insight into the character and nature of the landscape. This will include a review of sensitive landscapes e.g. National Scenic Areas (NSAs), Areas of Panoramic Quality (APQs), Special Landscape Areas (SLAs), Sites of Special Scientific Interest (SSSIs), Local Nature Reserves (LNRs), Gardens and Designed Landscapes. A ZTV has been prepared to inform the selection of a representative range of both landscape and visual receptor locations. The initial study area was a 20km radius to encompass Loch Lomond and Ben Lomond, both which are popular tourist and leisure destinations. However, the results of the ZTV have demonstrated that the main landscape and visual receptors will be confined to a linear corridor to the north of the site. Site visits will be undertaken to test and check the desk-based research and enable further refinement of the study area and likely sensitive receptors.

Landscape and Visual Impact Assessment

9.3.12 The LVIA will be undertaken in accordance with the 'Guidelines for Landscape and Visual Impact Assessment', the Landscape Institute and Institute of Environmental Management and Assessment, 3rd Edition, 2013. In accordance with the guidelines, the Landscape and Visual assessments will be undertaken separately, however the methodology of assessment follows the same process for both. The steps taken when carrying out the assessments are as follows:

- Establish the landscape or visual baseline
- Identify landscape and visual receptors
- Identify interactions between the proposed development and the landscape/visual receptors
- Identify and describe the likely impacts (i.e. the action being taken)
- Judge the susceptibility of the landscape or visual receptor to specific change
- Judge the value of the landscape receptor or the value of the view

- Combine the susceptibility and the value to determine the sensitivity of the receptor
- Judge the scale, duration and reversibility of the impact and combine to determine the magnitude of effect
- Combine the sensitivity of the receptor with the magnitude of effect to determine the significance of effect
- Propose measures to mitigate any adverse effects where these are judged to be more significant
- Provide a final statement on likely significant effects (i.e. the resulting changes from the impacts)

9.3.13 To assist with making consistent judgements on the significance of effects it can be useful for the sensitivity of the receptor and the magnitude of effect to be laid out in a table, as indicated in Table 9.1 below.

Table 9.1 – Matrix for Determining the Significance of Effects

		Sensitivity of Landscape or Visual Receptor		
		High	Medium	Low
Magnitude of Effect	High	Major	Moderate	Minor
	Medium	Moderate	Moderate	Minor
	Low	Minor	Minor	Negligible/None
	Negligible	Negligible	Negligible/None	Negligible/None

- 9.3.14 Sensitivity to change will require the assessor to consider either the extent to which the landscape receptor can accommodate and tolerate the type of proposed change, or to consider the type of visual receptor. With regards to visual receptors, a residential dwelling or recreation area is generally more sensitive to change than a factory unit or place of work. Furthermore, receptors that experience views in passing from road or rail are less sensitive than receptors experiencing a constant view or view for a long period of time. However, the sensitivity of visual receptors should always be determined based on-site specific conditions, e.g. a road receptor within an urban area would be considered low sensitivity but if the road was part of a scenic route the sensitivity would increase.
- 9.3.15 Magnitude of effect considers the extent of physical loss or change to the landscape receptor, and for the visual receptor the extent of the proposed development that will be visible within the view and the distance from the visual receptor to the development.
- 9.3.16 In combining the sensitivity of the receptor and the magnitude of effect, there are no hard and fast rules. More significant effects would occur, for example, where there is a greater or irreversible loss of mature or diverse landscape elements or a greater change to a view. Less significant effects would occur, for example, where the impacts will be experienced in areas of poorer landscape condition, or where there was only a small change to part of a view. Table 9.2 below sets out the definitions and issues considered when judging the significance of effects.

Table 9.2 – Significance of Effects

Significance (sensitivity x magnitude)	Definition	Issues Considered
None / Negligible	No change to the landscape receptor or no detectable change to the visual receptor	<ul style="list-style-type: none"> There is no physical change or loss to the receptor. The proposals would not conflict with any national policies regarding the protection of the countryside. The proposals would have no effect on the existing view from the visual receptor.
Minor	A detectable but non-material change to the landscape or visual receptor	<ul style="list-style-type: none"> The landscape receptor is considered tolerant of some change or loss to landscape features and elements. Effects occur on areas in poorer condition, degraded character or lower-valued landscapes. The proposals cannot be entirely mitigated for because of the nature of the proposed development or the character of the wider landscape. Effects would be for a short duration and reversible. The proposals would cause a barely perceptible change to the existing view. The proposals would form a part of the middle to long distance view.
Moderate	A material but non-fundamental change to the landscape or visual receptor	<ul style="list-style-type: none"> Noticeable change or loss of landscape features and elements to a valued landscape. The proposals are in conflict with policy for the protection of the natural environment. Mitigation would not prevent the proposed development from altering the landscape in the long term as some features of interest would be partly destroyed or their setting diminished. Effects are for a considerable period of time but some or all could be reversible. Effects are clearly noticeable and affect the quality of a view. The proposals would form a part of the middle distance view.
Major	A fundamental change to the landscape or visual receptor	<ul style="list-style-type: none"> Noticeable change and loss to a sensitive or nationally valued landscape or intensive change to less sensitive or regionally valued landscape. The proposals are in serious conflict with policy for the protection of the natural environment. No or limited mitigation measures possible.

Significance (sensitivity x magnitude)	Definition	Issues Considered
		<ul style="list-style-type: none"> ■ The proposals are likely to degrade, diminish or even destroy the integrity of a range of characteristic features and elements or their setting. ■ The proposals would be substantially damaging to a high quality or highly vulnerable landscape. ■ The proposals would cause a significant deterioration or significantly alter the existing view. ■ The proposals would form a part of the foreground view.

9.3.17 In most instances the effects are likely to be adverse, as indicated in the table above. However, this is not always the case, and in some instances effects can be beneficial, for example where a degraded landscape is to be improved and a more diverse range of habitats created or a derelict site is to be redeveloped and views from adjacent receptors improved.

9.3.18 Where the effects are judged to be moderate or major, these are deemed to be of greatest significance and additional mitigation measures may need to be considered, if possible and practical.

9.4 Consultation

9.4.1 As part of the assessment process consultees are likely to include:

- The Loch Lomond and Trossachs National Park Planning Authority;
- Scottish Natural Heritage (SNH); and
- Historic Environment Scotland.

9.5 Potential Effects

Landscape

9.5.1 The proposed development includes two sites located within Loch Lomond and Trossachs Landscape National Park (LLTNP). West Riverside is located near to the centre of the town of Balloch and on the edge of Balloch Country Park, adjacent to the retail development at Lomond Shores. It will include leisure activities and tourist accommodation, Woodbank House is located on the northwest edge of Balloch adjacent to the A82 and will include leisure and holiday accommodation.

9.5.2 Each site sits within a separate Landscape Character Type (LCT). West Riverside is mostly undulating woodland with existing paths and roads set within the areas of trees and is designated River Valley Farmland with Estates LCT. As also indicated within the Loch Lomond and The Trossachs Landscape Assessment, West Riverside is located adjacent to an area designated as Gardens and Designed Landscapes and adjacent to a National Scenic Area (NSA). Balloch Country Park lies to the east of the site.

9.5.3 Woodbank House sits within designation Rolling Farmland with Estates LCT. This site is more open in character with open grassland and mature trees and provides the setting for Woodbank House, a derelict Category A listed building. This building is also on the Buildings at Risk register. This site overlooks the NSA.

- 9.5.4 The suggested study area of 20km radius includes Ben Lomond, which sits in the Ben Lomond National Memorial Park and falls within land designated as a Site of Specific Scientific Interest (SSSI). The Loch Lomond NNR also lies within the study area. In terms of assessing the proposed development it is recognised that the whole of the LLTNP is a Sensitive Area.
- 9.5.5 The Landscape Assessment will review the qualities and features of both the LCT's; the River Valley Farmland with Estates and Rolling Farmlands with Estates and any further LCT's that lie within the study area. The landscape and natural heritage designations will form part of the assessment in terms of sensitivity of each LCT. However, the LLTNP Local Development Plan does identify Sites for development within these designations.
- 9.5.6 Woodbank House, a Category A listed building is included within the Woodbank House site. The impact of the proposed development on this listed building will require consideration during the EIA process.
- 9.5.7 The Loch Lomond and Trossachs National Park Local Development Plan allocates both sites for Visitor Experiences (VE1 and VE4) while also incorporating an area of Mixed Use' (MU1) within West Riverside
- 9.5.8 As the site directly and physically impacts on both Landscape Character Types, the resulting effects are likely to be determined as being more significant due to loss of features and landscape elements compared with effects to LCT's where there are no physical impacts.
- 9.5.9 However, the fact that the site sits within areas designated for Visitor Experience development and Mixed Use and improved public realm within the LLTNP Local Development Plan, the assessment will need to take this into consideration when concluding the level of the significance of effects on all the LCT's.

Visual

- 9.5.10 Receptor locations (e.g. residential, business/community, leisure/recreation and transport corridors), have been selected to give a good representative range across the study area. Two draft ZTVs have been prepared in support of this Scoping Report to assist in selecting the viewpoints (Figure 9.1, Figure 9.2 and Figure 9.3).

Figure 9.1 – Balloch ZTV Heights (Bare)

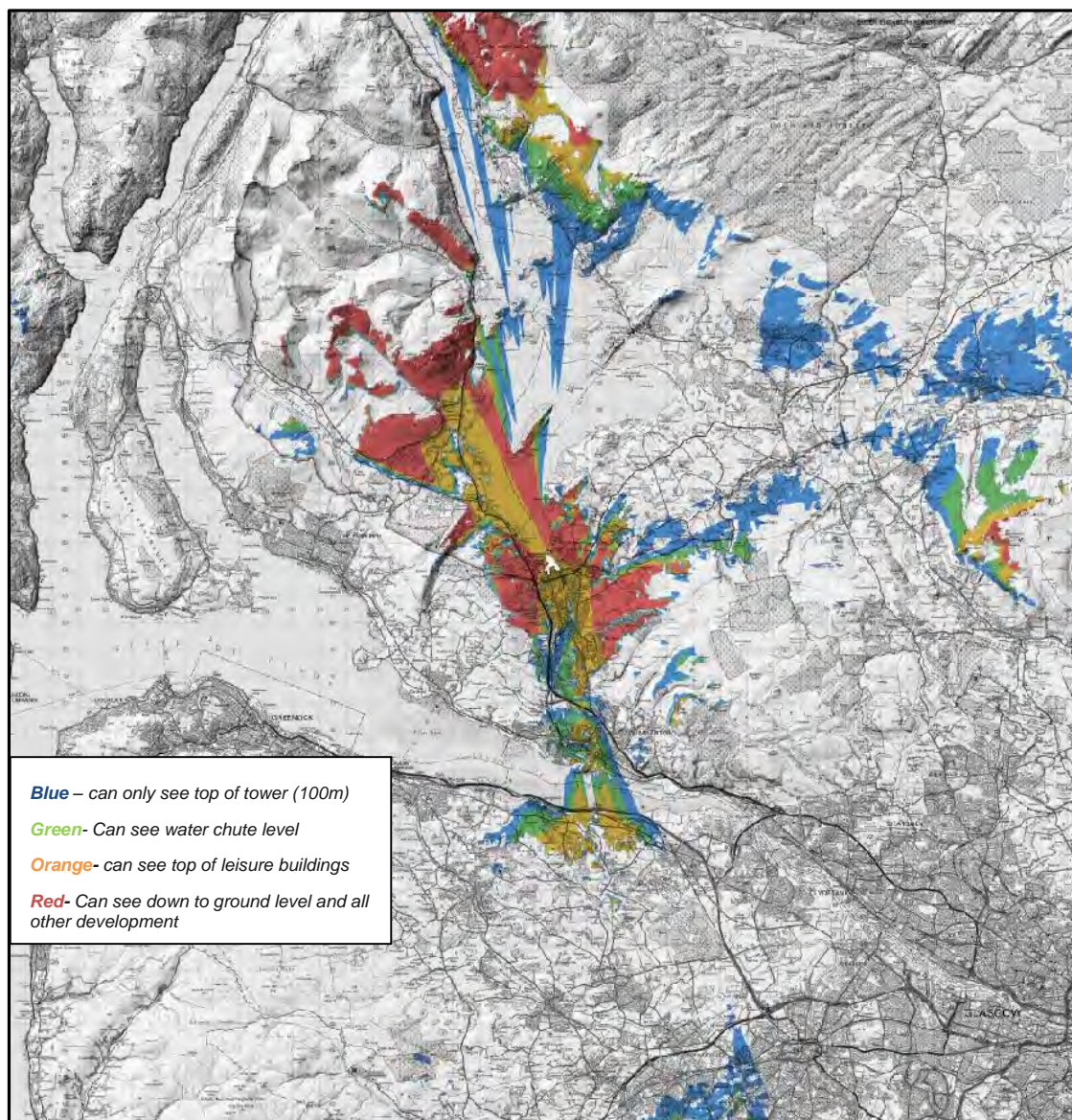


Figure 9.2 – Balloch ZTV Heights Screening

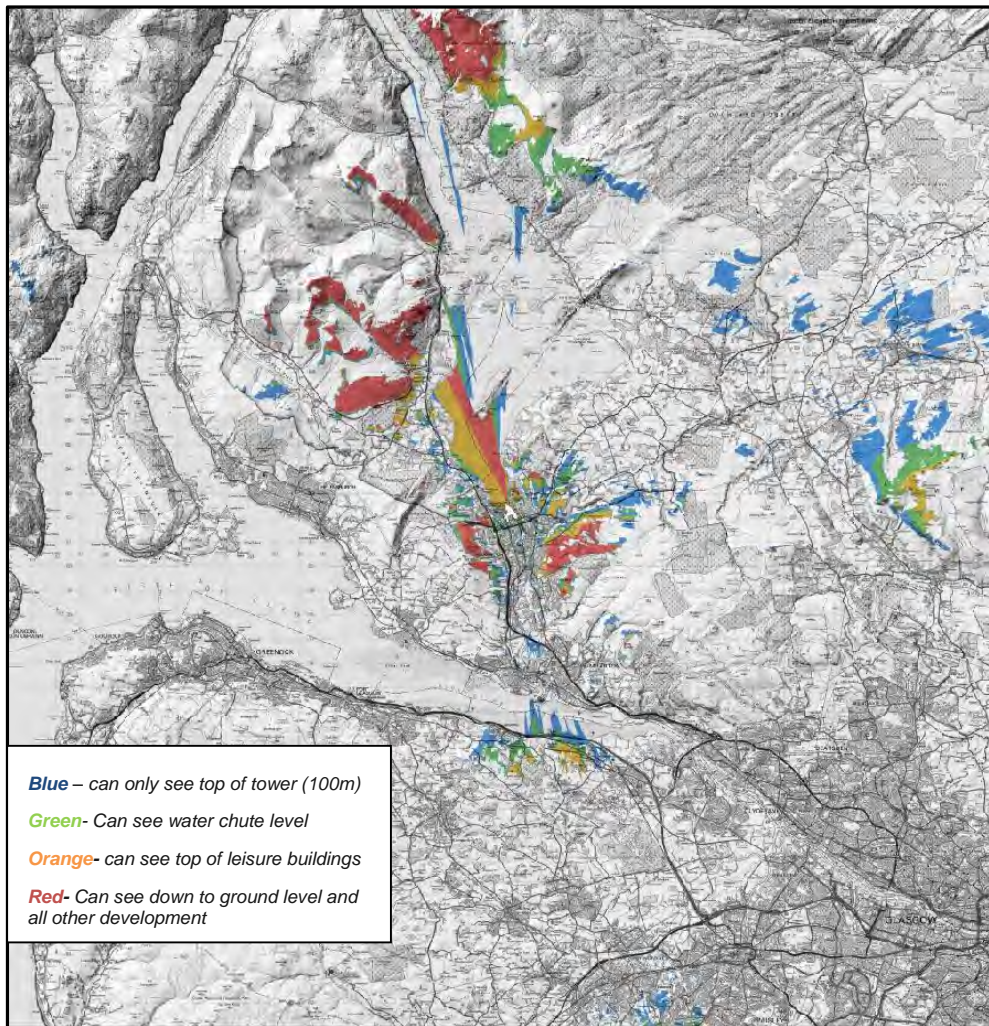
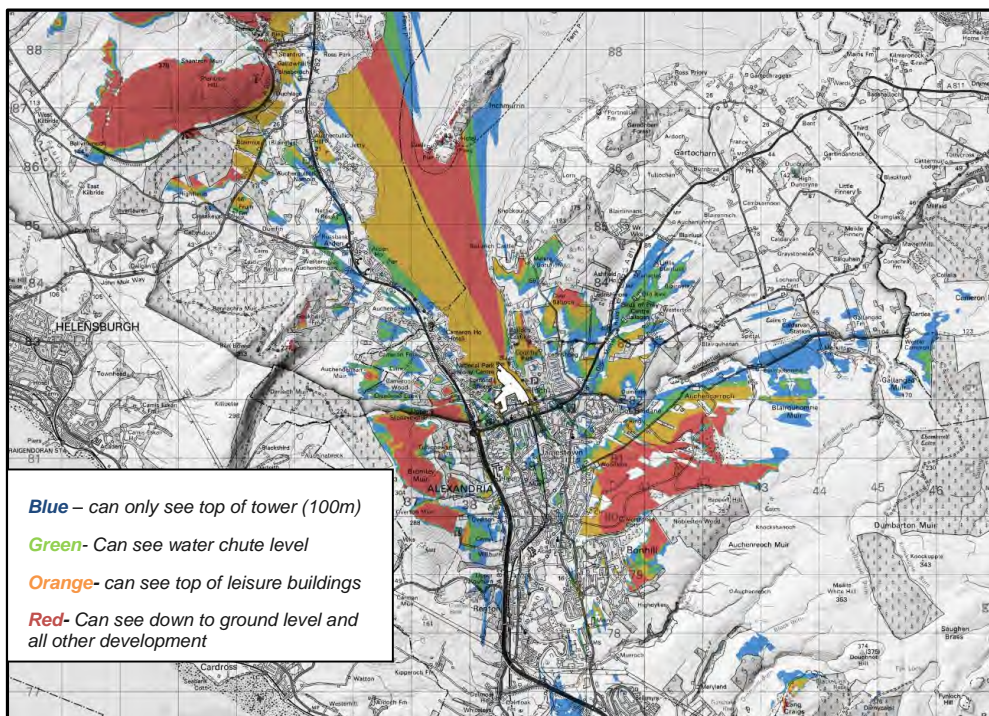


Figure 9.3 – Balloch ZTV Heights Screening (Restricted Area)



- 9.5.11 The ZTVs were prepared on the assumption of the inclusion of key structures as part of the proposed development i.e.:
- Viewing tower – estimated to be 100m in height;
 - Leisure development feature element – estimated to be 50m in height; and
 - Leisure building – ridge line estimated to be 20m in height.
- 9.5.12 As the exact locations for these elements are yet to be determined, the ZTVs for Scoping have been based on a single point, informed by the 2015 Masterplan layout, where the observation tower is indicated.
- 9.5.13 The first ZTV was undertaken on the basis of 'bare ground', (i.e. it does not take into account any localised screening by buildings, other structures, trees/vegetation, or localised landform) it indicates the worse-case situation of the locations that could experience a view of all or part of the proposed development.
- 9.5.14 A second ZTV was prepared, taking into account major tree groups and woodlands (assuming a mature height of 15m) and built-up areas (assuming a ridge-line height of 9.5m) with locations determined from the OS mapping. This helps to demonstrate the screening effects of elements within the landscape which has a bearing on the significance of effects, particularly with respect to visual receptors. It assists with refining the selection of visual receptors.
- 9.5.15 Only locations where the ZTV indicates potential views of the site will be included for assessment and receptors with likely significant adverse effects will be given greatest priority within the LVIA. In this instance, the ZTV indicates that there is very limited extent of visibility due to the combination of existing landform, woodland areas and existing development.
- 9.5.16 The sensitivity of visual receptors and views, as defined in the 'Guidelines for Landscape and Visual Impact Assessment', will be dependent on:
- the location and context of the viewpoint;
 - the expectations and occupation or activity of the receptor;
 - the duration the view is experienced i.e. static or in passing
 - the prominence of the project within the view i.e. foreground, middle distance, long distance
- 9.5.17 In the visual assessment more weight will be given to changes in the view or visual amenity which are greater in scale, visible over a wide area, visible for the greatest duration and visible within the foreground view.
- 9.5.18 Receptors include:
- Occupiers of residential properties with views affected by the development proposals;
 - Businesses and community facilities e.g. schools, public halls
 - Users of all outdoor leisure and recreational facilities, whose attention or interest may be focused on the landscape; and
 - Those travelling through the area by road or rail.

Residential Receptors

- 9.5.19 With respect to residential receptors, views from the whole of the property including gardens rather than simply views from within the property should be taken into account when considering the significance of effects.
- 9.5.20 At the time of undertaking this Scoping Report the selection of the visual receptors has not included any consultation with LLTNP or SNH. Consultations will be undertaken and any particular receptor locations requested by LLTNP or SNH (or other statutory consultees) will be included as part of the assessment.
- 9.5.21 The residential receptors that are likely to experience the most significant effects are those bounding or overlooking the site, as currently these views are likely to include rural elements of woodland or open, agricultural farmland. However, views could be mitigated through the

introduction of proposed structure and buffer planting, which will reinforce existing boundary tree planting and therefore lessen the significance of effects.

9.5.22 There are likely to be residential receptors that will experience views of the site from within the wider study area if these receptors are located on ground higher than the site. However, for most, the effects are likely to be assessed as being of minor significance as the proposed development will be seen in the context of existing urban development. This is particularly the case for residential receptors located to the south of the site.

9.5.23 Residential receptors that would be considered are:

- Bonhill Housing Estate (Selection of key properties);
- Mill of Haldane Housing Estate (Selection of key properties);
- Properties in Clairinsh and Inchcruin housing estate off Balloch Road;
- Properties on Old Luss Road;
- Properties on Auchincarroch Road;
- Upper Stoneyhill;
- Cameron Farm; and
- Glenfern Guest House.

9.5.24 Residential receptors that are not being considered due to Landform are:

- Properties on along the B873.

Business and Community Facilities

9.5.25 The effects on business premises and community facilities are likely to be similar to those of the residential receptors, with effects on those receptors closest to the site assessed as being more significant. These receptors are considered less sensitive than residential receptors as the view from a place of work or community facility is less important. However, the sensitivity of business receptors would be reviewed during the site visit as for some, the location and view can be an important reason for their operations and activities.

9.5.26 Business and Community receptors that would be considered are:

- Cameron House Jetty/Boathouse;
- Lomond Woods Holiday Park;
- Lomond Shores and Tower;
- Commercial Properties along Balloch Road;
- Mc Donald's Restaurant on Old Luss Road; and
- Queen of the Loch Restaurant on Ben Lomond Way.

Leisure and Recreation

9.5.27 There are a number of Public Rights of Way (PRW) within the study area, including the John Muir Way walking route and Regional Cycle Route 40 that runs along the boundary of the site. Views from these routes into Woodbank House are open agricultural landscape, while views into West Riverside A from the John Muir Way path, are restricted due to topography and tree planting and residential development. There will be a perception of being in a semi urban environment. The project will change the character and nature of the views from these public paths.

9.5.28 There are also a number of other important recreation sites within the study area, numerous peaks in the Arrochar Alps, Dumgoyne, Ben Lomond and Islands within Loch Lomond itself. The ZTV (with screening) indicates that all or part of these sites will potentially experience views of the project from the highest peaks and from the westerly point of Inchmurrin Island. As Ben Lomond is Scotland's more easily accessible Munro, consideration should be given as to how

to mitigate expansive southerly views from this popular hillwalking viewpoint. Whilst potentially having a greater likelihood of views of the project, Ben Lomond will also view the project in the context of existing urban development. However, assessment of the views from this peak could conclude that there will be greater significant effects from this location.

9.5.29 Leisure and Recreation receptors that would be considered are:

- Balloch Castle and Key points in Country Park;
- Balloch House Hotel;
- Ben Lomond;
- Inchmurrin Island Pier;
- Duck Bay Hotel; and
- Shantron Hill Viewpoint.

Transport

9.5.30 The proposed development is well serviced for transport. West Riverside is bounded by Balloch Road to the south with Balloch Train Station to south. Travel speeds on Balloch Road are 30mph. Trains depart to Glasgow and Dumbarton locally and link to national rail networks. As this train line terminates just south of the proposed development site, train passengers will only have visibility of the West Riverside development on the station platform. Woodbank House is adjacent to the A82 which connects Glasgow to the Highlands traveling along the shores of Loch Lomond. Whilst the ZTV indicates that there will be inter-visibility between the proposed development site and the A82, views will be brief as vehicles will be traveling at speed. The ZTV indicates that Woodbank House will have inter-visibility with the train line; the full extent of this will be researched through future site visits.

9.5.31 Transport receptors that would be considered are:

- Selected viewpoints traveling south on A82 between Firkin Point and Luss;
- A82 between Dumbarton and Stoneymollan Roundabout traveling north;
- Balloch Train Station and Platform;
- A811 between Gartocharn and Balloch travelling west; and
- B837 between Rowardenan and Balmaha.

9.6 Mitigation and Enhancement

9.6.1 Following the conclusions of the LVIA, should the assessment determine significant and adverse effects to any of the landscape and visual receptors the proposals would be reviewed to consider appropriate mitigation options. This could include elements such as additional planting for screening and selection of materials and finishes.

9.7 Summary and Conclusion

Landscape Assessment

9.7.1 The site, which includes both West Riverside and Woodbank House, is located within the Loch Lomond and Trossachs National Park, adjacent to a NSA.

9.7.2 The proposed development at West Riverside, is within the River Valley Farmland with Estates LCT and is located within Drumkinnon Woods. The proposed development will result in the loss of some existing woodland in order to accommodate the proposals.

9.7.3 Woodbank House sits within designation Rolling Farmland with Estates LCT with the Category A listed Woodbank House within an area designated of Long Established (of Plantation Origin) Ancient Woodland. The proposed development may result in a loss of some rolling farmlands

as a result of this project. Woodbank House may also form part of the proposed development and would be subject to listed building consent.

- 9.7.4 As the project is located in Loch Lomond and Trossachs National Park it does directly affect this designated landscape. Those designated landscapes that have been identified within the study area, are likely to be assessed as having moderate or major significant effects. The Designated Landscape of Ben Lomond and the Arrochar Alps are likely to be assessed as having minor significant effects. The ZTV indicates that only a very small part of Balloch Country Park could potentially have views of the site and locations along the west shore of Loch Lomond and the area of the South of Loch Lomond itself will have views of part or all of the site.
- 9.7.5 The conclusion of the Scoping Study is that a full Landscape Assessment is likely to be required, given that there will be physical changes and inter-visibility with adjacent landscape character types and designated landscapes, within the National Park.
- 9.7.6 Although the proposals are consistent with the activities that currently take place in the surrounding area; the main activities locally being based on tourism and the leisure industry, due to the central location within the National Park and within Balloch itself, the recommendation is to undertake a full landscape assessment as part of an LVIA.

Visual Assessment

- 9.7.7 The greatest changes to views are potentially from those receptors located immediately adjacent to each site and those situated to the north and west, with development becoming part of foreground or middle distant views. West Riverside currently provides a good level of screening of the Lomond Shores development from existing surrounding receptors, principally the residential receptors to the south. Removal of some of this woodland may open up views and receptors immediately adjacent to the proposals may experience increased light (from buildings and road lighting), and traffic movement as part of changes to views. As such, effects to these receptors could potentially be assessed as being significant and adverse.
- 9.7.8 Effects on receptors located to the south and east of the site are likely to be assessed as having only minor significance, as any views of the project will be seen in the context of the existing urban fabric. However, the height of the proposed development, particularly with respect to the observation tower and main leisure buildings could potentially give rise to moderate adverse effects for some receptors.
- 9.7.9 Whilst distant receptors are less likely to experience significant and adverse effects, many are likely to be determined as being sensitive receptors due to their locations within the national park and as such will be included as part of the full LVIA.
- 9.7.10 Overall, it is likely that the effects which will be more significant, to both landscape and visual receptors will be local to the site and it is recommended that a full Visual Assessment is undertaken for this development.

10 Traffic & Transport

10.1 Introduction

- 10.1.1 This aspect of the assessment will cover the transport impacts of the proposed development. In particular, the additional traffic generated by the proposed land-use developments need to be fully considered.
- 10.1.2 The proposed development will have a significant catchment potential and will inevitably lead to increased traffic flows on the A82 Trunk Road and at its key junction at the A811/Stoneymollan Roundabout. These impacts could also be felt on other local roads such as Balloch Road and the A811.
- 10.1.3 This will require engagement with the Local Roads Authority (West Dunbartonshire Council) who assume responsibility for local surface roads and Transport Scotland and their operating company (Scotland Transerv) as they have responsibility for maintaining and operating the A82 trunk road.
- 10.1.4 Cognisance will require to be given to the Design Manual for Roads and Bridges and in particular the requirements of Volume 11 Sec 2 (HA 204/08).
- 10.1.5 The remainder of this section sets out how the potential environmental impacts would be assessed along with other relevant considerations, such as, mitigation measures and consultation requirements.

10.2 Baseline Conditions

- 10.2.1 The proposed site sits adjacent to a largely residential area to the east of the A82 trunk road and south of Loch Lomond Shores. As the site is located close to the waterfront it is constrained to the north and east by the River Leven and by Loch Lomond itself. There a number of existing minor roads running through the site including Pier Road and Ben Lomond Way. These connect to Balloch Road and a number of roundabouts linking motorists from the A811 Stirling Road and the A82 trunk road network. The town of Balloch, in the context of the surrounding road network is shown in Figure 10.1 below.

Figure 10.1– Balloch Road Network



- 10.2.2 The A82 trunk road network already experiences periodic congestion and queues during established peak periods and public holidays, and as such the infrastructure requirements for development of this site will require to be carefully assessed. Consideration of the likely impacts the proposal will have on the existing network will be required to determine what mitigation (if any) is required at all junctions that are affected by the proposal – especially the Stonymollan Roundabout.
- 10.2.3 The expected trips to the proposed development will be considered in respect of sustainability so that any pressure on the road network is minimised and any proposed infrastructure changes would be subject to appraisal.
- 10.2.4 The proposed development site is a very short walking distance to Balloch Train Station – which currently provides a half hourly service to Glasgow and Lanarkshire on the North Clyde line. The station is limited in terms of size/scale and has a limited covered waiting area and passenger facilities, with only one platform.
- 10.2.5 The site is situated very close to National Cycle Network Route 7 and the John Muir Way. These established routes would be secured and enhanced by the development to ensure that the potential connections from these routes are utilised and enhanced.
- 10.2.6 Traffic count data is available in the area via the Department for Transport's (DfT's) network of automatic data collection sites as shown in Figure 10.2 below. There are six relevant fixed counter sites around Balloch as shown on the figure below. Two on the A82 at Overton Road and to the north of Stonymollan Roundabout, and four further sites on the A81; one east of the Stonymollan roundabout, a second at Lomond Bridge, third near the junction of Drymen Road and a final site north east of Balloch, outside the town.
- 10.2.7 These fixed counter sites will be used for assessment of historical data and to consider the volume of traffic over time in the locality.

Figure 10.2 – Traffic Count Data locations



- 10.2.8 In 2015, the two-way flow on the A811 between Roundabout and B857 Luss Road roundabout was approximately 11,865 vehicles per day²⁶.
- 10.2.9 During the same year, two-way flows were approximately 17,000 vehicles per day on the A82 north of the Stonymollan Roundabout.

²⁶ AADT – Average Annual Daily Traffic: the number of vehicles that will drive on that stretch of road on an average day of the year. Units = vehicles per day.

- 10.2.10 The area already attracts many users for a number of different purposes including recreation/education/retail and therefore the sensitivity of the existing land uses will require to be included in the wider impacts alongside other committed developments.
- 10.2.11 An assessment of crash history in the local area will require to be assessed to ensure that all known road traffic collisions and personal injury accidents are recorded. This will require looking back over a minimum of a five-year period and for personal injury accidents it would be prudent to consider the previous 10 years.
- 10.2.12 This will allow recognition of accident clusters and any patterns of behaviour that may be affected by the proposed development so that these can be scrutinised as the plans develop for the site.

10.3 Relevant Guidance and Assessment Methodology

- 10.3.1 A Transport Assessment (TA) will be prepared as a supporting study to the EIA. In preparing it, we will follow Transport Scotland's Transport Assessment Guidance from 2012.
- 10.3.2 We will consult with West Dunbartonshire Council's and Transport Scotland's Development Management teams to agree the final scope of the TA, including a detailed assessment of affected roads and key junctions in the surrounding network to assess the impact of the new development. This may result in the requirement to create a transport model of the local area.
- 10.3.3 Further data collection will be required via road traffic count surveys, at locations to be confirmed and agreed by the Council and the Trunk Road operating company. This will take the form of a combination of survey methods, including Automatic Traffic Counters, junction Turning Counts and Automatic Number Plate Recognition.
- 10.3.4 We will summarise the key issues from the Transport Assessment and contain this within a transport chapter in the EIA. We will identify opportunities to mitigate the impacts of additional traffic and maximise the use of non-car modes of transport.
- 10.3.5 The assessment will identify the likely significant environmental effects arising from the proposed development in respect of all modes of transport. It will be undertaken in accordance with the guidance set out within the Institute of Environmental Assessment (IEA) document 'Guidelines on the Environmental Assessment of Road Traffic (Guidance Note 1)', 1993.
- 10.3.6 In line with IEA guidelines, further assessment will be undertaken on:
- Highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%); and
 - Any specifically sensitive areas where the traffic flows have increased by 10% or more.
- 10.3.1 The assessment will consider the potential effects of both the construction and operational stages using a comparative prediction of local vehicle movements with and without the development, based upon the predicted number of trips generated and the likely modal share.
- 10.3.2 Reflecting the subject matter and order of topics as stated in the Guidelines for the Environmental Assessment of Road Traffic, the Environmental Statement Transport chapter will also consider the potential for significant effects deriving from any of the following:
- Severance;
 - Driver Delay;
 - Pedestrian and Cyclist Delay;
 - Pedestrian and Cyclist Amenity;
 - Fear and Intimidation;
 - Road Safety; and
 - Hazardous / Abnormal Loads.
- 10.3.3 The process to be followed will consider the following:
- Characteristics / size/ activities / waste / risk of pollution / risk of accidents

- Importance of the receiving environment
- Likely scale of change following mitigation / number of people affected / degree of proposed change
- Duration – temporary or permanent changes / cumulative impact in the short medium and long term
- Trends e.g. seasonal flooding, large events, diversions, exceptional loads
- Study area – direct and indirect impacts
- Time period
- Consideration of actions
- Opportunities to improve conditions
- Likelihood of problems occurring

10.4 Potential Effects

10.4.1 Based on the methodology contained within this report and wider general guidance, the scoping process has identified the following likely significant effects of this proposal, which are included within the preliminary EIA scope:

- Increased traffic flows during and post-construction leading to a negative impact on the trunk road network and local roads, plus the associated potential for increased pedestrian severance, air pollution, driver delay and accident rates;
- Changes to local road infrastructure, including proposed mitigation or remedial measures;
- Creation or improvement to active travel infrastructure; and
- Increased use of public transport / potential for additional trips by rail.

10.4.2 Other areas that may also require to be scrutinised include:

- Air quality
- Construction (at all stages)
- Pedestrian Environment
- Cycling Environment
- Community Effects/Impacts
- Vehicle travellers
- Impact of road schemes / policies and plans.

10.5 Mitigation and Enhancement

10.5.1 Prior to any construction taking place the implementation of a construction traffic management plan should be prepared to help mitigate impact of construction traffic movements throughout the phases of the development.

10.5.2 Once operational it is possible that some of the traffic impacts of development can be mitigated by the implementation of travel plan measures. The TA will fully explore the potential to use all modes including walking and cycling, rail and bus as alternative means of accessing the site.

10.5.3 Consideration will also be given to the preparation of travel packs so that when the site is built-out there will be information available to prospective visitors advising them of the optimum travel options to and from the site.

10.5.4 Finally, the provision of active travel infrastructure to encourage greater uptake of walking and cycling for customers of the site and local residents will address some concerns regarding road congestion, noise and air pollution.

11 Archaeology & Cultural Heritage

11.1 Introduction

- 11.1.1 The site of West Riverside and Woodbank House lies at the northern limit of the town of Balloch at the southern shore of Loch Lomond, within the Loch Lomond & the Trossachs National Park, and within Bonhill parish within the local authority of West Dunbartonshire.
- 11.1.2 The Site is within previously agricultural and estate land on the southern banks of Loch Lomond. Four heritage assets were identified within the Site. These included one designated asset; the Category A Listed Building Woodbank House, and three undesignated assets including the course of a disused railway line, a military road and the former Balloch Central Station building.
- 11.1.3 Designated heritage assets in the wider landscape, which may be sensitive to visual change affecting their settings, include Balloch Castle earthwork (Scheduled Monument), Balloch Country Park (Inventory Garden and Designed Landscape) and Balloch Pier, slipway and Engine House engine house (Category A Listed Building).
- 11.1.4 The Site is considered to be of medium archaeological potential: because of this further mitigation measures will be required. A programme of archaeological work should also be implemented to identify any previously undiscovered archaeological remains and allow for their excavation and recording in advance of construction. Consultation with Historic Environment Scotland will be necessary to assess and mitigate potential impacts on the settings of designated heritage assets within the site and the wider Study Area.

11.2 Baseline Conditions

Study areas

- 11.2.1 Two areas have been used in assembling and presenting the data:
 - The Site, comprising, land at West Riverside and Woodbank House form the extent of the proposed site boundary. This report relates to any future development within this area (Figure 11.1)
 - The Study Area extends 1km from the site (Figure 11.2). Within this area background data has been collated to inform the archaeological potential of the site, identify any heritage assets which may be affected as they continue into the site and to identify assets which may be subject to setting effects
- 11.2.2 Please refer to Appendix G (West Riverside, Balloch and Loch Lomond: Archaeological Desk-based Assessment, March 2017) for results of the desk study.

11.3 Relevant Guidance and Assessment Methodology

- 11.3.1 This baseline has been collated by studying of all readily available documentary sources, following the ClfA Standards and Guidance (ClfA 2014). The following sources of information were referred to:
 - Designation data downloaded from the Historic Environment Scotland website on 12 December 2016;
 - The National Record of the Historic Environment (NRHE), including the Canmore database and associated photographs, prints/drawings and manuscripts held by HES;
 - Historic Landscape Assessment data, viewed through the HLAMap website;
 - Historic Environment Record (HER) data from the West of Scotland Archaeology Service (WoSAS) (date received 12 December 2016)
 - The National Collection of Aerial Photography (NCAP);
 - LiDAR data supplied by the Scottish Government;

- Geological data available online from the British Geological Survey;
 - Historic maps held by the National Library of Scotland;
 - Ordnance Survey Name Books;
 - Relevant internet resources; and
 - Readily available published sources and unpublished archaeological reports.
- 11.3.2 The subscription based NCAP website was used to access available aerial photographs. It is considered that the aerial photographs available online are sufficient to inform this assessment.
- 11.3.3 The National Archives of Scotland was not physically visited as part of this assessment, since maps available from the National Library provide sufficiently detailed information about the site to allow a reliable assessment of its archaeological potential and inform any archaeological mitigation. An online search of the National Archives of Scotland catalogue was undertaken for the parish of Bonhill but produced no items of further interest.
- 11.3.4 LiDAR survey data supplied by the Scottish Government, covering both the West Riverside and Woodbank sites was processed in order to enable archaeological interpretation of the results. A Hill-Shade Relief model was used, with two separate simulated light angles applied from azimuths of 315 and 45 degrees.
- 11.3.5 A site visit was made on 20th December 2016. Weather conditions were overcast and cold, but dry. The purpose of this visit was to identify any previously unrecorded archaeological features, assess the topography, and identify levels of ground disturbance within the site. The setting of the site in relation to nearby heritage assets was also considered. The visibility within Drumkinnon Wood was limited due to the heavy tree coverage and dull lighting due to the time of year. The area around Woodbank House was deemed dangerous due to the ruinous state of the building so a safe distance was kept throughout the visit. The surface visibility of the remainder of the site was good.

Identification of heritage assets

- 11.3.6 The assessment aims to identify all known heritage assets potentially affected by the proposed development, and to estimate the potential for currently unknown heritage assets. A heritage asset is defined as any element of the historic environment which has cultural significance. Both discrete features, and extensive landscapes defined by a specific historic event, process or theme, can be defined as heritage assets; and assets may overlap or be nested within one another. Some heritage assets are designated as Scheduled Monuments, Listed Buildings, World Heritage Sites, Conservation Areas, Inventory Gardens and Designed Landscapes (IGDLs), Inventory Historic Battlefields, Historic Marine Protected Areas, or locally designated through policies in the Local Plan. Undesignated assets may be recorded in the NRHE or Historic Environment Records, while many other assets are currently unrecorded.
- 11.3.7 Designated heritage assets within the site and Study Area are shown in Figure 11.1 and Figure 11.2. Non-designated assets the site have been assigned an asset number (prefixed HA for Heritage Asset); designated assets, in this case the Category A listed Woodbank House, retain their Listed Building reference. A single asset number can refer to a group of related features, which may be recorded separately in the HER and other data sources. Heritage Assets within the Study Area are shown in Figure 11.2 (Designated assets) and Figure 11.3 (undesignated assets). Designated heritage assets are labelled with the reference number assigned by Historic Environment Scotland; undesignated assets with the reference number in the WoSAS HER; and assets recorded in Canmore with the Canmore ID number. Other assets have been assigned an asset number (prefixed HA for Heritage Asset).
- 11.3.8 Refer to Appendix G (West Riverside, Balloch and Loch Lomond: Archaeological Desk-based Assessment, March 2017) for the associated tables (Tables 3 to 7).

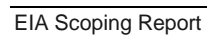


Figure 11.2 – 1km Study Area

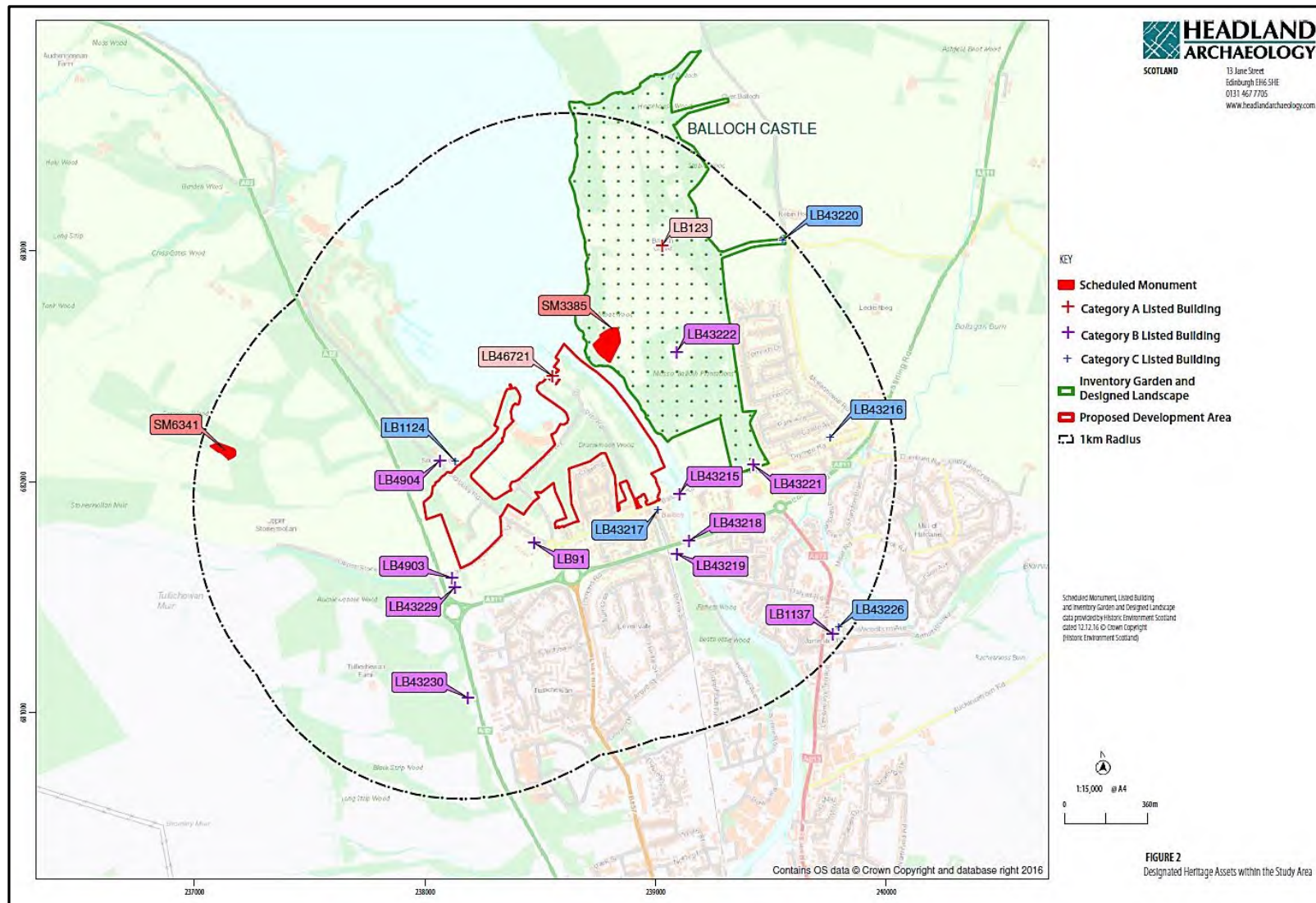
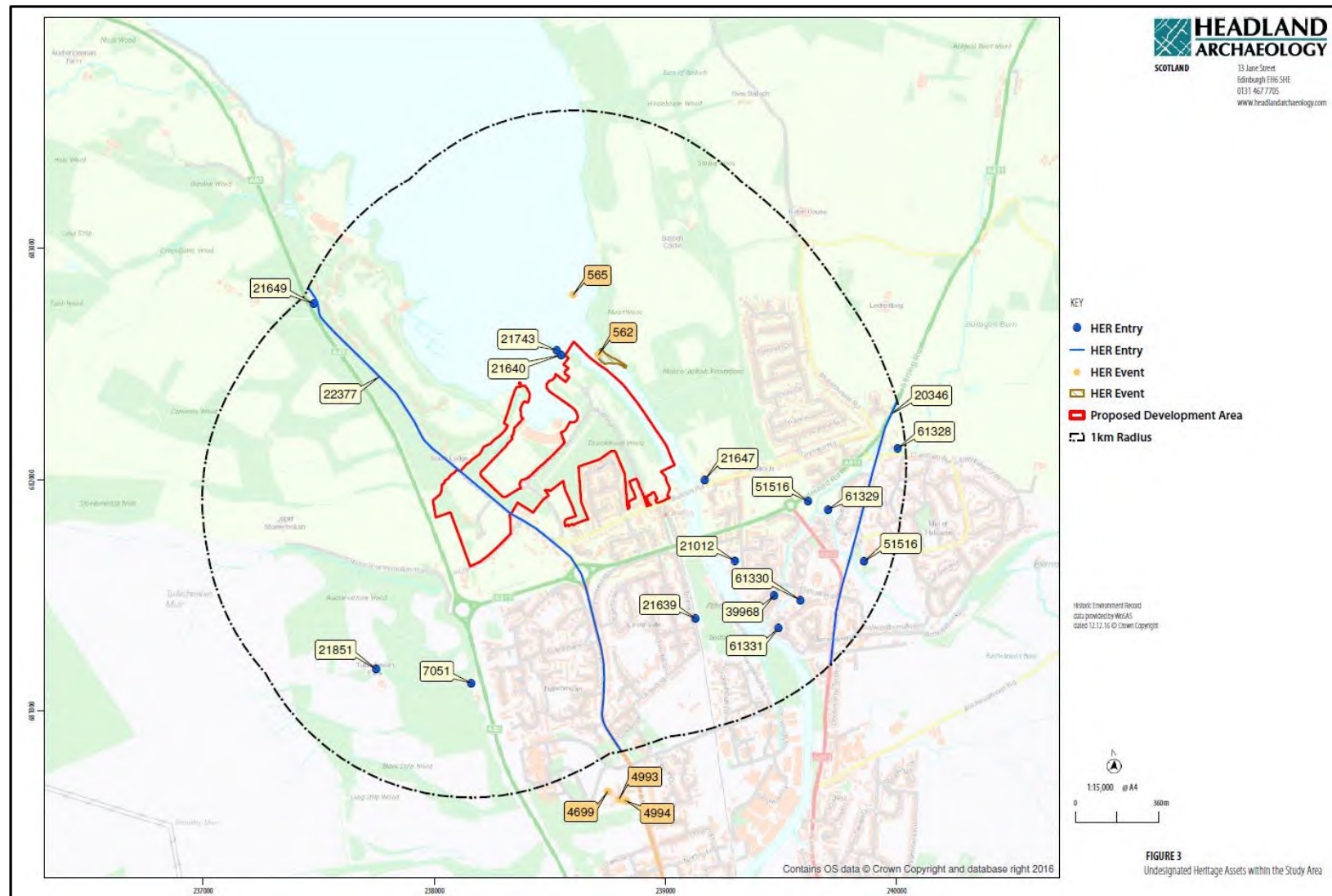


Figure 11.3 – Undesignated Heritage Assets within the Study Area



Assessment of cultural significance and importance

- 11.3.9 Heritage assets are assessed in terms of their cultural significance and importance. Cultural significance is a quality that applies to all heritage assets, and as defined in 'Historic Environment Scotland Policy Statement 2016' (Annex 1, paragraph 3), may be artistic, archaeological, architectural, historic, traditional, aesthetic, scientific or social, and may be 'inherent in the monument itself, its fabric, setting, use, associations, meanings, records, related monuments and related objects'. Following 'Scottish Planning Policy' paragraph 137, the analysis of a heritage asset's cultural significance aims to identify its 'special characteristics' which should be protected, conserved or enhanced. Such characteristics may include elements of the asset's setting, which is defined in Historic Environment Scotland's guidance as "*the way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated*" (HES 2016 'Managing Change in the Historic Environment: Setting', Section 1).
- 11.3.10 The importance of a heritage asset is the overall value assigned to it based on its cultural significance, reflecting its statutory designation or, in the case of undesignated assets, the professional judgement of the assessor (Table 11.1). Assets of national importance and international importance are assigned a high and very high level respectively. The criterion for Listing is that a building is of 'special architectural or historic interest'; following HESPS Note 2.17, Category A refers to 'buildings of national or international importance', Category B to 'buildings of regional or more than local importance', and Category C to 'buildings of local importance'. Conservation Areas are not defined as being of national importance, and are therefore assigned to a medium level. Any feature which does not merit consideration in planning decisions due to its cultural significance may be said to have negligible heritage importance; in general, such features are not considered as heritage assets and are excluded from the assessment.

Table 11.1 – Criteria for Assessing the Importance of Heritage Assets

Importance of the asset	Criteria
Very high	World Heritage Sites and other assets of equal international importance
High	Category A Listed Buildings, Scheduled Monuments, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields, Historic Marine Protected Areas and undesignated assets of national importance
Medium	Category B Listed Buildings, Conservation Areas, and undesignated assets of regional importance
Low	Category C Listed Buildings and undesignated assets of lesser importance

Potential for unknown heritage assets

- 11.3.11 Archaeological features are often impossible to identify through desk-based assessment. The likelihood that significant undiscovered heritage assets may be present within the site is referred to as archaeological potential. Overall levels of potential can be assigned to different landscape zones, following the criteria in Table 11.2, while recognising that the archaeological potential of any zone will relate to particular historical periods and types of evidence. The following factors are considered in assessing archaeological potential:
- The distribution and character of known archaeological remains in the vicinity, based principally on an appraisal of data in the HER;
 - The history of archaeological fieldwork and research in the surrounding area, which may give an indication of the reliability and completeness of existing records;

- Environmental factors such as geology, topography and soil quality, which would have influenced land use in the past and can therefore be used to predict the distribution of archaeological remains;
- Land-use factors affecting the survival of archaeological remains, such as ploughing or commercial forestry planting; and
- Factors affecting the visibility of archaeological remains, which may relate to both environment and land-use, such as soils and geology (which may be more or less conducive to formation of cropmarks), arable cultivation (which has potential to show cropmarks and create surface artefact scatters), vegetation, which can conceal upstanding features, and superficial deposits such as peat and alluvium which can mask archaeological features.

Table 11.2 – Archaeological potential

Potential	Definition
High	Undiscovered heritage assets are almost certainly present, and these are likely to include assets of high or medium importance
Medium	Undiscovered heritage assets are likely to be present, and it is possible, though unlikely, that these may include assets of high or medium importance.
Low	The study area may contain undiscovered heritage assets, but these are unlikely to be numerous and are highly unlikely to include assets of high or medium importance.
Negligible	The study area is highly unlikely to contain undiscovered heritage assets of any level of importance
Nil	There is no possibility of undiscovered heritage assets existing within the study area.

11.4 Consultation

- 11.4.1 No formal consultation with cultural heritage organisations was carried out during the preparation of the DBA. The West of Scotland Archaeology Service (WoSAS) was contacted to obtain a digital data extract from the West Dunbartonshire Historic Environment Record (HER).
- 11.4.2 It is not yet known if there will be a direct impact on the heritage assets associated with the Woodbank Site. It is recommended that consultation with Historic Environment Scotland with regard to Category A Listed Buildings, alterations to them and what restrictions are involved, is sought as a priority. It is also recommended that an appropriate archaeological programme of works is agreed with WoSAS to record these and any associated assets in advance of any alterations. This will most probably involve a building recording survey of the House, and an evaluation (trial trenching, possibly in conjunction with geophysical survey) followed by excavation and recording of any remains of archaeological interest within the remainder of the Woodbank Site. Potential impacts on the settings of Balloch Castle Scheduled Monument and Garden and Designed Landscape will require further detailed assessment, possibly with reference to visualisations of the proposed development.

11.5 Potential Effects

- 11.5.1 Development has the potential to directly impact on cultural heritage assets, including designated and undesignated built heritage and known and unknown archaeology.
- 11.5.2 Potential impacts arising from the proposed development include direct impacts involving disturbance or removal of heritage assets by construction groundworks and setting impacts arising from changes to views from and towards heritage assets.

Predicted Direct Impacts

- 11.5.3 There are five heritage assets within the site. HA1 and HA3 record the course of historic routes; a railway and a military road respectively; HA2 is the old Balloch station building, and LB1125 and HA4 are the Category A-listed Woodbank House and gazebo, and Woodbank stables respectively.
- 11.5.4 The development proposals seek to maintain the area around HA1 as a woodland walk. The course of the military road is preserved in the route of Old Luss Road; no historic fabric survives as upstanding remains. The development proposals also seek to preserve the old Balloch Station building. No significant direct impacts are anticipated upon HA1, HA2 or HA3.
- 11.5.5 The Category A-listed Woodbank House and gazebo (LB1125), and stables (HA4), are considered to be of high importance and any proposed modifications should be designed with reference to this high level of protection.
- 11.5.6 Category A Listed Buildings are Buildings of national or international importance and any alteration to these buildings will be at the discretion of Historic Environment Scotland. The development has the potential to affect the setting of cultural heritage assets. In particular, the views from Balloch Castle Scheduled Monument and the Garden and Designed Landscape; changes to the surrounding landscape may impact upon the desired nature of the park and the pathway walks. The setting of Woodbank House may also be affected.
- 11.5.7 The Site is considered to be of medium archaeological potential and there is a risk of direct impacts through disturbance of presently unknown archaeological deposits which may survive as buried remains within the site.

Predicted Setting Impacts

- 11.5.8 Woodbank House was designed on an east/west axis; eastern views from the front of the house are of the southern end of Loch Lomond and Balloch to the hills beyond. There is a possibility of setting impacts upon HA4.
- 11.5.9 The proposed development will also feature in south-western views from Balloch Castle Scheduled Monument (SM3385) and Balloch Castle IGD (GDL0042), and there is a possibility of setting impacts upon both. Depending on the nature of the development in its vicinity, there is also potential for setting impacts upon the Category A-listed Balloch pier, slipway and engine house (LB46721).
- 11.5.10 Please refer to Appendix G (West Riverside, Balloch and Loch Lomond: Archaeological Desk-based Assessment, March 2017) for full results of the desk study.

11.6 Mitigation and Enhancement

- 11.6.1 Impacts on currently undiscovered archaeological remains may occur during construction of any potential development. Considering the archaeological potential of both of the proposed development areas, archaeological investigation is likely to be required in advance of construction works. This is likely to comprise evaluation (trial trenching, possibly in conjunction with geophysical survey) followed by excavation and recording of any remains of archaeological interest.
- 11.6.2 As previously noted (paragraph 11.4.2), a programme of Historic Building Recording may also be required in connection with Woodbank House and associated assets, depending on the nature and extent of development in this area.

12 Socio-economics Tourism and Recreation

12.1 Introduction

- 12.1.1 The assessment will consider potential socio-economic, tourism & recreation effects that may occur from the proposed redevelopment of West Riverside and Woodbank House. This includes potential effects (beneficial and adverse) on the local tourism economy, business interests, public access and tourism and recreation interests; and potential income, employment and other effects on the local economy.
- 12.1.2 As described in Chapter 3, the proposed development will include a range of uses tailored to attract increased use of the area by visitors to Balloch and Loch Lomond and residents of the local area. As the proposed development will also have frontage to the River Leven consideration will also be afforded to related socioeconomic effects on marine users.

12.2 Baseline Conditions

Overview

- 12.2.1 The development site lies within Loch Lomond and the Trossachs National Park and comprises two distinct areas; West Riverside, adjacent to the Loch Lomond Shores Development, and the curtilage of Woodbank House, a derelict former hotel with adjacent grounds, situated between Balloch and the A82. Collectively these two areas are referred to as 'the site'. The A82 provides the principal access route to the west of Loch Lomond, other parts of the Trossachs, Argyll & Bute and the North West Highlands.
- 12.2.2 As would be expected given the site's location within a National Park, it is proximate to various tourism and recreation resources/receptors, including: Loch Lomond, Ben Lomond, Luss, the River Leven and Balloch itself (with particular reference to visitor-related business activity and the accommodation sector). The closest visitor attractions to the development site are:
- Loch Lomond Shores, a retail and leisure development situated immediately to the north west,
 - the Loch Lomond Steamship, berthed at Balloch Pier within the northern extent of the development site;
 - Loch Lomond Birds of Prey Centre, located within the Loch Lomond Shores complex.
 - Balloch Castle and Country Park are situated east of the development site across the River Leven,
 - other visitor attractions and tourism developments are located at greater distance within Balloch and along the shores of Loch Lomond.

Socio-economic Characteristics

- 12.2.3 A detailed socio-economic baseline of Balloch and the surrounding area will be collated in order to establish the settlement's key characteristics and the area's socio-economic function(s). Analysis undertaken to date indicates that Balloch serves multiple roles, including as a gateway to the Loch Lomond & Trossachs National Park as a stopping point for visitors to the West Coast of Scotland, and as a day trip destination for visitors from Glasgow and other parts of the West of Scotland.
- 12.2.4 As the main gateway to many of the Loch Lomond & the Trossachs National Park's tourism and visitor attractions, Balloch has developed related infrastructure to service its leisure role, but it also serves as an employment and business locus for a wider area including nearby settlements such as Renton and Alexandria. As the area most likely to witness any major socioeconomic effects, the baseline will describe the socio-economic profile of this area and outline the profile of comparator areas. Further details regarding proposed Study Areas are considered below.

Tourism and Recreation

- 12.2.5 Given the importance of tourism and recreation to the National Park the baseline will identify the characteristics of the local tourism sector and consider its importance at a national scale. The baseline will also identify relevant visitor attractions within 10km of the development site as potential tourism and recreational receptors, describe current visitor numbers and examine their role within the local tourism sector.
- 12.2.6 As Balloch's role as a tourism centre has developed, the number and type of accommodation providers in the area has also expanded, and indeed the proposed development includes tourist accommodation. Balloch's accommodation sector will therefore be profiled as part of the baseline and considered as a receptor within the subsequent impact assessment.
- 12.2.7 The John Muir Way national walking route passes through the development site and National Cycle Network Route 7 is situated adjacent to the site, whilst Core Paths and Public Rights of Way are also located in close proximity. Other designated walking routes, and the east and west banks of Loch Lomond, may offer perspectives of the development site from varying distances. The most prominent of these is the West Highland Way (which runs 98 miles from Glasgow to Fort William), although provisional ZTV analysis indicates that views are only likely from elevated and less forested sections on the east side of Loch Lomond. The proposed development may also be accessed by or affect other routes including heritage paths, cycle paths, rights of way and adopted Core Paths. The baseline section of the assessment will therefore identify and describe all designated routes within 10 km of the development site. These routes will be assessed as public access receptors within the Traffic & Transport ES chapter and as potential tourism and recreational receptors within the Socio-economics, Tourism & Recreation ES Chapter.
- 12.2.8 A number of nearby recreational boating locations and related servicing operations may also be directly or indirectly impacted by the construction and operation of the proposed development. Whilst for many marine users of the south of Loch Lomond, effects are likely to be limited to visual amenity rather than access impacts, potential effects on mooring and related facilities specifically on the west bank of the River Leven could potentially occur and therefore require to be assessed. Three boat/cruising clubs are known to have moorings on this bank and will be considered as potential receptors:
- Balloch Cruising Club;
 - Sandbar Cruising Club; and,
 - Slipway Cruising Club.
- 12.2.9 A number of loch cruising tourist operations, including the Maid of the Loch, are also based in Balloch at various departure points from the River Leven and Loch Lomond shore-side. These, along with other marine users of the River Leven and southern area of Loch Lomond adjacent to the development site will be identified within the baseline section and considered as potential receptors within the subsequent impact assessment.

12.3 Relevant Guidance and Assessment Methodology

- 12.3.1 There is no formal guidance on the assessment of socio-economic or tourism effects. The methodology for the socio-economic impact assessment follows guidance in Her Majesty's Treasury's 'Green Book'²⁷ for Economic Appraisal and Evaluation', and good practice guidance²⁸ for economic assessment used by the Scottish Government and Scottish Enterprise. It is also similar to the approach employed in other development projects elsewhere in Scotland.

²⁷ ['The Green Book Appraisal and Evaluation in Central Government'](#), HM Treasury (2003)

²⁸ [Scottish Enterprise Additionality & Economic Impact Assessment Guidance Note](#)

- 12.3.2 The methodology employed for the tourism and recreation assessment has been used in a number of other development projects across Scotland. The approach has been robustly tested and accepted as valid throughout the development process and at public inquiry.
- 12.3.3 The assessment will be undertaken on the following basis and through the following stages:
- Scoping and consultation process;
 - Baseline assessment; and
 - Impact Assessment.
- 12.3.4 The views of this scoping assessment and further consultation with relevant stakeholders will inform the baseline assessment and assist the impact assessment in terms of both quantitative and qualitative factors.
- 12.3.5 The following study areas are proposed for the assessment:
- Socio- economic study area - The study areas for the socio-economic assessment will be based on those settlements closest to the proposed development, limited by a 15-minute drive time catchment. The 'wider area' will be defined within a 30-minute drive time, and 'wider region' within a 45- minute drive time;
 - Tourism and Recreation study area - The study area for the tourism and recreation assessment is defined by a 7.5km radius from the proposed development corridor. Facilities or notable points of focus for visitor attraction and recreation within this area will be reviewed. If any significant tourism/recreation facilities are located just outside the boundary of the study area, these will also be included.
- 12.3.6 These impact assessments will consider the sensitivity of all relevant receptors, the predicted magnitude of changes and will take account of embedded mitigation proposed as an integral part of the design process. Typical thresholds to be adopted for the socio-economic assessment are set out in tables 12.1 – 12.4 below:

Table 12.1 – Socio-economic Sensitivity

Sensitivity	Definition
High	There is low/limited availability of labour and skills in the area's workforce (this is dependent on specific project requirements and the degree to which they can be met in the area under consideration). The Proposed development would lead to labour market pressure and distortions (i.e. wage inflation, skills and capacity shortages, import of labour).
Medium	The receptor has a constrained supply of labour and skills. The Proposed development may lead to labour market pressure and distortions (i.e. wage inflation, skills and capacity shortages, import of labour).
Low	The receptor has a readily available labour force: some skill deficits. The Proposed development is unlikely to lead to labour market pressure and distortions (i.e. wage inflation, skills and capacity shortages, import of labour).

Table 12.2 – Socio-economic Magnitude

Magnitude	Definition
High	Effects would be observed on an international, national or regional scale; and/or where the number of jobs created or lost in the Study Area would be greater than 250 (based upon EU definition of small and medium enterprises). and/or Effects would be of long-term duration (i.e. greater than 5 years). Frequency is not a relevant consideration.
Medium	Noticeable effects would arise that may be judged to be important at a local scale, either because there are large effects on few receptors or smaller effects on a larger proportion of receptors; and/or where the number of jobs created or lost in the Study Area would be greater than 50, but fewer than 250. and/or Effects would be medium-term (i.e. 3-5 years). Frequency is not a relevant consideration.
Low	Small scale effects would arise, with a limited number of affected receptors; and/or where the number of jobs created or lost in the Study Area would be greater than 10, but fewer than 50. and/or Effects would be short-term (i.e. 1-2 years). Frequency is not a relevant consideration.
Very Low	Where an effect would not be discernible; and/or where fewer than 10 jobs would be created or lost within the Study Area. and/or Effects would be temporary (i.e. experienced for less than one year).

12.3.7 The following thresholds shown in Tables 12.3 and 12.4 will be used for the tourism and recreation assessment:

Table 12.3 – Tourism and Recreation Sensitivity

Sensitivity	Definition
High	Where the receptor or resource (visitors to activities, resources, attractions or businesses) is defined as being of International or National status and generates high visitor numbers
Medium	Where the receptor or resource is defined as being of regional status and generates medium visitor numbers
Low	Where the receptor or resource is defined as being of local status and generates low visitor numbers

Table 12.4 – Tourism and Recreation Magnitude

Magnitude	Definition
High	The extent of change experienced by receptors (visitors to activities, resources, attractions or businesses) is large scale and a large number of people or activities will be affected; or The majority of the development is visible, at close proximity, from the receptor's location
Medium	The extent of change experienced by receptors is small in scale, but a large number of people or activities will be affected; or The extent of impacts on activities, resources and/or businesses is large in scale but only a small number of people or activities will be affected; or The development is partially visible from limited viewpoints in the receptor's location
Low	The extent of change experienced by receptors is small in scale and will only affect a small number of people or activities; or where the proposed development would be unlikely to be visible (as it would be obscured by hills or woodland, etc.) or would be visible at a distance or where the receptor is not susceptible to impacts from turbine visibility.
Very Low	Where impacts on receptors would be negligible

12.3.8 Where predicted employment generation, visitor numbers to the proposed development and associated expenditure are additional to the baseline scenario, positive socio-economic benefits may be generated. However, the potential for displacement, deadweight effects and leakage will be taken account of within the impact assessment to ensure the accuracy of predicted socio-economic effects from the proposed development.

12.4 Consultation

12.4.1 As part of preparing the socio-economic, tourism and recreational impact assessment the project team will seek to consult the following stakeholders: Loch Lomond & Trossachs National Park Authority (as local tourism and recreational lead body and statutory planning authority);

- West Dunbartonshire Council (as public access and local authority);
- Scottish Enterprise (the owners of part of the development site);
- Visit Scotland (as national tourism lead body)
- Dunbartonshire Chamber of Commerce;
- Scottish Rights of Way and Access Society (Scotways);
- Forestry Commission Scotland (Drumkinnon Wood is included in the National Forestry Estate);
- The Crown Estate;
- Business associations representing: the local accommodation sector; boating organisations (users of existing quay/riverside facilities); cruising companies; other marine business interests; local retailers and food & drink operators; and identified major visitor attractions in the area;
- Local and regional interest groups representing the interests of recreational users of the area, including: walkers; boaters, riders, fishing and other marine interests. This will include

seeking consultation from Scotways regarding all public rights of way within the vicinity of the development site.

12.5 Potential Effects

12.5.1 Potential socio-economic and tourism effects could include, but may not be restricted to, the following, all of which will require consideration within the assessment:

- Direct economic effects (positive and negative): jobs and GVA wholly or largely related to construction, operation and maintenance of the proposed development; consideration of potential displacement effects on employment and GVA;
- Indirect economic effects (positive and negative): jobs and GVA generated in the study area economy in the chain of suppliers of goods and services to the direct activities;
- Induced economic impacts: jobs and GVA created by direct and indirect employees' spending in the study area or in the wider economy;
- Wider economic (catalytic) impacts (positive and negative): employment and income generated in the economy related to the wider role of the Development in influencing economic activities (including wider socio-economic effects below). This will include the effects on inward investment, elsewhere within the construction sector (e.g. as a result of worker supply) and on other sectors of the economy;
- Effects on visitor and leisure infrastructure, including: attractions, accommodation and other facilities, and destinations including - archaeological sites, cultural facilities, sports, recreation, and leisure facilities;
- Effects on visitor and leisure activities – including food and drink, walking, fishing, country pursuits, wildlife interests, and sports; and
- Effects on visitor and tourist routes – including those used for driving, cycling, walking, bridleways, and rights of way.

12.6 Mitigation and Enhancement

12.6.1 As noted above, the impact assessment will take account of any embedded mitigation measures considered integral to the design process. Where significant adverse effects are predicted (even taking account of embedded mitigation), additional mitigation measures to address them will be outlined. Mitigation measures will be split into those relating to construction, operation and decommissioning impacts, depending on the nature of the impacts identified.

12.6.2 The development may benefit the local economy directly in terms of jobs related to construction, operation and maintenance of the proposed development. In addition, indirect employment and income effects may be generated through the supply of goods and services to support different activities within the proposed development. Visitor expenditure (direct, indirect and induced) related to the proposed development could also generate economic and employment effects.

12.6.3 Possible mitigation and enhancement measures may include:

Mitigation

- Transport of abnormal loads would be programmed wherever practicable to avoid peak visitor, or other busy periods to mitigate the effect of the proposed development on particularly sensitive locations, tourist/visitor viewpoints, and road corridors;
- Where possible, construction materials would be sourced locally to avoid importation or exportation of materials, limiting traffic movements on the surrounding road network and hence minimising related adverse impacts upon visitors;

Enhancement

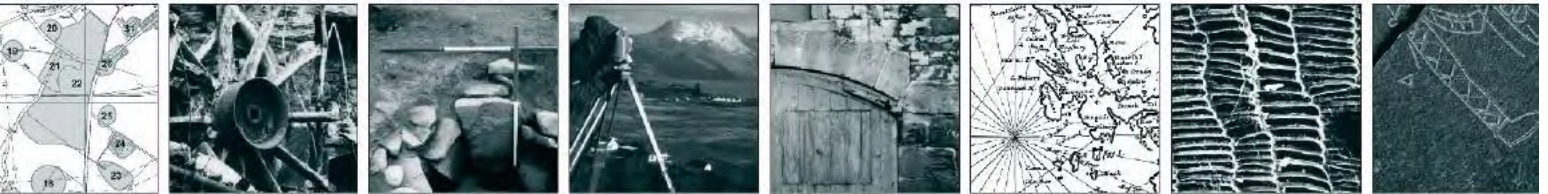
- Local promotion of contract and supply chain opportunities in the construction and operation phases to maximise the use of local business and labour resources;
- Skills development and training programmes to increase local take up of training, apprenticeship and employment opportunities associated with the proposed development;
- Establishing effective linkages with local job centres, employability programmes and partners; and
- Promotion of the wider area and its opportunities as part of the marketing of the proposed development.

12.6.4 All relevant mitigation and enhancement measures will be identified within the impact assessment prior to the predicted residual effects of the proposed development being reported.

13 Other Matters

- 13.1.1 It is considered that other effects may arise from a result of construction, operation or decommissioning of the proposed development which do not easily fit into the topics listed in sections 4-11 of this Scoping Report. Primarily, these are related to Human Health.

Appendix G Archaeology Desk Based Study



WEST RIVERSIDE, BALLOCH AND LOCH LOMOND

Archaeological Desk-based Assessment

for Envirocentre

March 2017

WEST RIVERSIDE, BALLOCH AND LOCH LOMOND

Archaeological Desk-based Assessment

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March 2017

Job No.:	WRBL16
NGR:	NS 38365 81983
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WEST RIVERSIDE, BALLOCH AND LOCH LOMOND

ARCHAEOLOGICAL DESK-BASED ASSESSMENT

Headland Archaeology was commissioned by Envirocentre to undertake a desk based assessment of land at Balloch, West Dunbartonshire. The proposed development area (PDA) is within previously agricultural and estate land on the south banks of Loch Lomond. Four heritage assets were identified within the Site. These included one designated asset; the Category A-listed Building Woodbank House, and three undesignated assets including the course of a disused railway line, a military road and the former Balloch Central Station building. Designated heritage assets in the wider landscape, which may be sensitive to visual change affecting their settings, include Balloch Castle earthwork (Scheduled Monument), Balloch Country Park (Inventory Garden and Designed Landscape) and Balloch pier, slipway and engine house (Category A Listed Building).

The PDA is considered to be of medium archaeological potential. A programme of archaeological work should be implemented to identify any previously undiscovered archaeological remains and allow for their excavation and recording in advance of construction. Consultation with Historic Environment Scotland will be necessary to assess and mitigate potential impacts on the settings of designated heritage assets within the PDA and the wider Study Area.

1 INTRODUCTION

1.1 Planning Background

Envirocentre has commissioned Headland Archaeology to produce a desk-based assessment (DBA) of land at West Riverside, Balloch in relation to a proposed leisure development which is being brought forward by Flamingo Land Ltd. The DBA is intended to inform scoping of the development proposals.

1.2 Site Description

The proposed development area (PDA) is located at the northern limit of the town of Balloch at the southern shore of Loch Lomond, within the Loch Lomond & the Trossachs National Park, and within Bonhill parish within the local authority of West Dunbartonshire. Currently, the majority of the land is covered in forestry and grassland with some tracks and roads present. The PDA measures approximately 33 hectares (Ha).

The PDA topography is generally flat with a slight rise from 7m AOD at the shore line to 37m AOD inland to the south-west. Forming an irregular U-shape (Figure 1), the PDA is bounded to the east by the River Leven and to the north by Loch Lomond, the buildings and car parks of Loch Lomond Shore visitor centre; the boundary of the PDA curves round to the north of Loch Lomond Shore and the northern edge is defined by a belt of trees. To the south the area is bounded by housing estates and Balloch Road. The Old Luss Road bisects the south-western quarter of the PDA; west of this road, the PDA comprises trees and rough pasture alongside the A82.

1.3 Consultation

No formal consultation with cultural heritage organisations was carried out during the preparation of the DBA. The West of Scotland Archaeology Service (WoSAS) was contacted in order to obtain a digital data extract from the West Dunbartonshire Historic Environment Record (HER).

2 AIMS AND OBJECTIVES

The assessment has been carried out according to the *Standard and guidance for historic environment desk-based assessment* published by the Chartered Institute for Archaeologists (CIfA 2014), and aims to:

- Collate all available written, graphic, photographic and electronic information relevant to the development site;
- Describe the nature, extent and significance of the historic environment within the area potentially affected by the development, identifying any uncertainties in existing knowledge;
- Determine the potential impact of the proposed development; and
- Identify any requirements for further investigation that may be necessary to understand the effects of the proposed development on the historic environment.

Potential impacts of the proposed development are most likely to relate to the disturbance of buried archaeology during the construction phase and impacts upon Listed Buildings or their settings.

3 METHODOLOGY

3.1 Study areas

Two areas have been used in assembling and presenting the data:

- The Proposed Development Area (PDA) corresponds to the application boundary in order to include any known or unknown heritage assets at risk of direct and indirect impacts (Figure 1).
- The Study Area extends 1km from the PDA (Figure 2). Within this area background data has been collated to inform the archaeological potential of the Site, identify any heritage assets which may be affected as they continue into the site and to identify assets which may be subject to setting effects.

3.2 Data sources

The assessment has been based on a study of all readily available documentary sources, following the CIfA Standards and Guidance (CIfA 2014). The following sources of information were referred to:

- Designation data downloaded from the Historic Environment Scotland website on 12 December 2016;
- The National Record of the Historic Environment (NRHE), including the Canmore database and associated photographs, prints/drawings and manuscripts held by HES;
- Historic Landscape Assessment data, viewed through the HLAMap website;
- Historic Environment Record (HER) data from the West of Scotland Archaeology Service (WoSAS) (date received 12 December 2016)
- The National Collection of Aerial Photography (NCAP);
- LiDAR data supplied by the Scottish Government;
- Geological data available online from the British Geological Survey;
- Historic maps held by the National Library of Scotland;
- Ordnance Survey Name Books;
- Relevant internet resources; and
- Readily available published sources and unpublished archaeological reports.

The subscription based NCAP website was used to access available aerial photographs. It is considered that the aerial photographs available online are sufficient to inform this assessment.

The National Archives of Scotland was not visited as part of this assessment, since maps available from the National Library give sufficiently detailed information about the site to allow a reliable assessment of its archaeological potential and inform any archaeological mitigation. An online search of the National Archives of Scotland catalogue took place for the parish of Bonhill but produced no items of further interest.

LiDAR survey data supplied by the Scottish Government, covering both the West Riverside and Woodbank sites was processed in order to enable archaeological interpretation of the results. A Hill-Shade Relief model was used, with two separate simulated light angles applied from azimuths of 315 and 45 degrees.

A site visit was made on 20th December 2016. Weather conditions were overcast and cold, but dry. The purpose of this visit was to identify any previously unrecorded archaeological features, assess the topography, and identify levels of ground disturbance within the site. The setting of the site in relation to nearby heritage assets was also considered. The visibility within Drumkinnon Wood was limited due to the heavy tree coverage and dull lighting due to the time of year. The area around Woodbank House was deemed dangerous due to the ruinous state of the building so a safe distance was kept throughout the visit. The surface visibility of the remainder of the site was good.

3.3 Identification of heritage assets

The assessment aims to identify all known heritage assets potentially affected by the proposed development, and to estimate the potential for currently unknown heritage assets. A heritage asset is defined as any element of the historic environment which has cultural significance. Both discrete features, and extensive landscapes defined by a specific historic event, process or theme, can be defined as heritage assets; and assets may overlap or be nested within one another. Some heritage assets are designated as Scheduled Monuments, Listed Buildings, World Heritage Sites, Conservation Areas, Inventory Gardens and Designed Landscapes (IGDLs), Inventory Historic Battlefields, Historic Marine Protected Areas, or locally designated through policies in the Local Plan. Undesignated assets may be recorded in the NRHE or Historic Environment Records, while many other assets are currently unrecorded.

Heritage assets within the PDA are shown in Figure 1 and listed in Table 3. Non-designated assets within the PDA have been assigned an asset number (prefixed HA for Heritage Asset); designated assets, in this case the Category A listed Woodbank House, retain their Listed Building reference. A single asset number can refer to a group of related features, which may be recorded separately in the HER and other data sources. Heritage Assets within the Study Area are shown in Figure 2 (Designated assets) and Figure 3 (undesignated assets), and listed in Tables 4 to 7. Designated heritage assets are labelled with the reference number assigned by Historic Environment Scotland; undesignated assets with the reference number in the WoSAS HER.

3.4 Assessment of cultural significance and importance

Heritage assets are assessed in terms of their cultural significance and importance. Cultural significance is a quality that applies to all heritage assets, and as defined in 'Historic Environment Scotland Policy Statement 2016' (Annex 1, paragraph 3), may be artistic, archaeological, architectural, historic, traditional, aesthetic, scientific or social, and may be '*inherent in the monument itself, its fabric, setting, use, associations, meanings, records, related monuments and related objects*'. Following 'Scottish Planning Policy' paragraph 137, the analysis of a heritage asset's cultural significance aims to identify its 'special characteristics' which should be protected, conserved or enhanced. Such characteristics may include elements of the asset's setting, which is defined in Historic Environment Scotland's guidance as "*the way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated*" (HES 2016 'Managing Change in the Historic Environment: Setting', Section 1).

The importance of a heritage asset is the overall value assigned to it based on its cultural significance, reflecting its statutory designation or, in the case of undesignated assets, the professional judgement of the assessor (Table 1). Assets of national importance and international importance are assigned a high and very high level respectively. The criterion for Listing is that a building is of 'special architectural or historic interest'; following HESPS Note 2.17, Category A refers to 'buildings of national or international importance', Category B to 'buildings of regional or more than local importance', and Category C to 'buildings of local importance'. Conservation Areas are not defined as being of national importance, and are therefore assigned to a medium level. Any feature which does not merit consideration in planning decisions due to its cultural significance may be said to have negligible heritage importance; in general, such features are not considered as heritage assets and are excluded from the assessment.

Table 1: Criteria for Assessing the Importance of Heritage Assets

Importance of the asset	Criteria
Very high	World Heritage Sites and other assets of equal international importance
High	Category A Listed Buildings, Scheduled Monuments, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields, Historic Marine Protected Areas and undesignated assets of national importance
Medium	Category B Listed Buildings, Conservation Areas, and undesignated assets of regional importance
Low	Category C Listed Buildings and undesignated assets of lesser importance

3.5 Potential for unknown heritage assets

Archaeological features are often impossible to identify through desk-based assessment. The likelihood that significant undiscovered heritage assets may be present within the Site is referred to as *archaeological potential*. Overall levels of potential can be assigned to different landscape zones, following the criteria in Table 2, while recognising that the archaeological potential of any zone will relate to particular historical periods and types of evidence. The following factors are considered in assessing archaeological potential:

- The distribution and character of known archaeological remains in the vicinity, based principally on an appraisal of data in the HER;
- The history of archaeological fieldwork and research in the surrounding area, which may give an indication of the reliability and completeness of existing records;
- Environmental factors such as geology, topography and soil quality, which would have influenced land-use in the past and can therefore be used to predict the distribution of archaeological remains;
- Land-use factors affecting the survival of archaeological remains, such as ploughing or commercial forestry planting; and
- Factors affecting the visibility of archaeological remains, which may relate to both environment and land-use, such as soils and geology (which may be more or less conducive to formation of cropmarks), arable cultivation (which has potential to show cropmarks and create surface artefact scatters), vegetation, which can conceal upstanding features, and superficial deposits such as peat and alluvium which can mask archaeological features.

Table 2: Archaeological potential

Potential	Definition
High	Undiscovered heritage assets are almost certainly present, and these are likely to include assets of high or medium importance.
Medium	Undiscovered heritage assets are likely to be present, and it is possible, though unlikely, that these may include assets of high or medium importance.

Potential	Definition
Low	The study area may contain undiscovered heritage assets, but these are unlikely to be numerous and are highly unlikely to include assets of high or medium importance.
Negligible	The study area is highly unlikely to contain undiscovered heritage assets of any level of importance.
Nil	There is no possibility of undiscovered heritage assets existing within the study area.

4 RESULTS

4.1 Overview of the historic environment

Previous investigations (Figure 3)

No investigations have taken place previously within the PDA. However, over the last two decades, a number of archaeological investigations including evaluations, watching briefs, field surveys, and excavations have taken place in and around the Study Area. Of particular note was a series of trial trenching evaluations and excavations carried out near Vale of Leven Hospital, approximately 1km south of the PDA, which revealed prehistoric activity (WoSAS Event ID 4699, 4993 and 4994).

An archaeological evaluation was undertaken ahead of construction works connected with a bridge over the River Leven and revealed 18th-19th century occupation (WoSAS Event ID 562).

One further investigation is recorded on the HER within the Study Area; WoSAS Event ID 565 records a 1998 non-intrusive survey north of Balloch Castle (SM3385).

Geology and geomorphology

The bedrock, formed approximately 398 to 407 million years ago in the Devonian Period, comprises extensive sandstone deposits making up the Teith Sandstone Formation. These rocks were formed from river depositing mainly sand and gravel detrital material in channels to form river terrace deposits, with fine silt and clay from overbank floods forming floodplain alluvium, and some bogs depositing peat (British Geological Survey Website, accessed 21.12.16)

The superficial geology of the area is Glaciofluvial Deposits of Gravel and Raised Marine Deposits of Flandrian Age which are made up of clay, sand and silt. The valley now occupied by Loch Lomond is largely a product of the Pleistocene ice, a number of earlier valleys having been integrated by some 2,000 feet of glacial down-cutting. There is evidence to show that just before the last ice advanced into the basin the sea flooded in the Lomond hollow, leaving marine shells to be picked up by the succeeding ice and deposited in the terminal moraines (Whittow 1997, 193)

The area as a whole would have consisted of shallow seas and rivers after the last Ice Age. A Hillside Relief Model created using LiDAR data shows the PDA to be located in a flood-plain with the edge of a river terrace running north-south on the western edge of the Woodbank part of the PDA.

Prehistoric Activity

There is one Scheduled Monument (SM) within the study area, called 'Cameron Home Farm, chambered cairn 720m S of' (SM6341), a Neolithic chambered cairn, of the Clyde-Solway group, which lies on the perimeter of Cameron Wood. In about 1800 the cairn was partly investigated, leading to the discovery of stone arrowheads and bone in some of the 20-25 'graves' which were subsequently reported. A cutting about 4m wide and 3m deep, presumably this earlier excavation trench, has been made the entire length of the cairn and three, possibly four, burial chambers remain exposed.

Excavations carried out at Vale of Leven Hospital, Alexandria (WoSAS Event ID 4699, 4993 and 4994) revealed a substantial amount of prehistoric activity. Over 100 features were excavated, including fire-pits and pits

containing structured deposits of prehistoric pottery, the majority of which appeared to be Grooved Ware from the late Neolithic period. A number of lithics crafted from quartz, flint and pitchstone were also recovered. The remains of a ring-groove structure, of likely later prehistoric date were also excavated, along with a ditch.

Medieval and Post-medieval Activity

Woodbank House (LB1125), a Category A listed building, is located in the south-western corner of the PDA and is largely an eighteenth-century construction with later additions and alterations. The land around it was settled on James Lindsay and his wife Sarah in 1670, and a house known as Stuckrodger stood on the site at this time. In 1774 Stuckrodger was acquired by Charles Scott of Dalquhurn, a Glasgow merchant, who renamed it Woodbank and it appears that the house, as it now appears, dates from this time. In 1885 William Ewing-Gilmour of Croftenga was the occupant of the house and it is likely that the later additions date from his occupancy. The house was converted to a hotel in the 1930s.

The earliest map that depicts the house is Blaeu's Map of 1654 where it is annotated as a house along with nearby Cameron House and is called 'Stochrothart'. Roy's Map of 1747-55 also depicts four or five houses and woodland landscaping within the 'Stuckrodger' estate. Ainslie's map of 1821 labels the estate with the names of 'Stockroger' and 'Woodbank'. By John Thomson's map of 1832, the estate is definitively named Woodbank and is also annotated with 'Miss Scott', presumably indicating the proprietor, who may be a relation of Charles Scott. The estate continues to be depicted on all maps, including 20th century Ordnance Survey maps which show it as Woodbank Hotel which continued in use, trading as the Hamilton House Hotel into the 1980s.

The site of Balloch Castle (SM3385), a medieval castle pre-dating the existing Balloch Castle (LB123, Category A-listed), is located above the east bank of the River Leven. It was the property of the Earls of Lennox until 1652 when it was purchased by Sir John Colquhoun of Luss. In the 15th century the Castle became the property of the family of Stewart, Lords Darnley, who were afterwards regranted the title of Earls of Lennox. By 1511 it had been replaced by Inchmurrin as "the chief messuage" of the Earldom of Lennox; and after this period Balloch was gradually deserted. Nothing now remains except a mound surrounded by a ditch (Fraser 1869). The castle is depicted as 'Bellach' on Blaeu's Map of 1654 and 'Ballich' on Charles Ross' 1777 Map, but neither shows any detail of location. It appears as an earthwork from the 1864 1st Edition Ordnance Survey Map with the later castle (LB123) in the location it occupies today.

The existing Balloch Castle (LB123) was built in 1809 by Robert Lugar for John Buchanan of Ardoch, a wealthy shipbuilder and banker. The design for the castle was influential in the development of secular Gothic style. The house is now the headquarters of Scottish Natural Heritage and the estate is open to the public as a country park. It also designated an Inventory Garden and Designed Landscape (GDL00042). Robert Lugar also built Tullichewan Castle (WoSAS 7051) to the south-west of the PDA. Built in 1792 and demolished in 1954, the castle is mentioned in both the Old and New Statistical Account (NSA) of the parish of Bonhill.

Modern Activity

The 1st edition OS Map (Figure 4) shows that the shoreline of Loch Lomond is largely unaltered since the 1860s. Drumkinnon Bay Winch House & Slipway is a Category A-listed Building (LB46721), and Balloch Pier (HA1) and Balloch Pier Station (HA2) are recorded on the HER. The station was opened in 1850, and later renamed Balloch Pier Station. It closed on 29 September 1986, the line subsequently terminating at Balloch Central Station (Butt 1995). The pier and slipway was built c. 1899 by the Dumbarton & Balloch Joint Line Committee and is noted on Bartholomew's Map of 1902. It consisted of a 2-track 'patent slip', with a wooden cradle and iron outriggers supported on a double central rail, with ratchet in the centre, and single side rails. At the head of the slipway was a single-storey harled winding-engine house, containing a large steam winch (Hume 1976).

Just outside the PDA in what is now the Loch Lomond Shore visitors' car park, a building named 'Drumkinnan' is illustrated on the 1st edition OS Map. The Ordnance Survey Name Book (1860) describes Drumkinnan as an old farmstead but no record exists of when it went out of use. The site is not recorded on the HER.

Aerial photography and the 1938 OS Map shows the site of 'Loch Lomond Factory (silk dyeing & finishing)' just beyond the southern edge of the PDA. The housing estate around Inchcruin and Clairinish now occupies the site.

The Historic Land-use Assessment map (hlapmap.org.uk, accessed 29/03/17) indicates historic sand and gravel extraction close to the north-eastern edge of the PDA, around what is now the Loch Lomond Shores car park and visitor centre; the OS mapping from 1899 onwards depicts 'sand pits' in this area. Areas of disturbance are visible on aerial photographs and it is likely the area was used for quarrying sand in the first half of the twentieth century.

4.2 Assessment of heritage significance

In this assessment, a selective approach has been adopted. Whilst all assets within the PDA and Study Area have been considered, only assets where there are potential issues are highlighted and discussed further.

Known heritage assets within the PDA (Figure 1)

There are five known Heritage Assets within the PDA. These include the course of the disused railway line (HA1) connecting to the steamer pier north of the PDA. The old Balloch Central station was replaced by the current station in the 1980s. The former station building (HA2) survives as a private residence, and the course of HA1 is partially preserved as a footpath and local access road. The three remaining HAs comprise the ruinous Woodbank House and gazebo (LB1125) and its stables (HA4), and the course of the Dumbarton to Tyndrum Military Road (HA3), preserved today as the Old Luss Road. HA3 continues along the Old Luss Road outside the PDA as HER 22377 (Figure 3).

Table 3: Heritage assets within the PDA

Asset no.	Asset name	Status & Ref.	Period	Importance
LB1125	Woodbank House and gazebo	Category A-listed Building	Post-medieval	High
HA1	Disused Railway Line	n/a	Modern	Low
HA2	Former Balloch Central Station building	HER 21638	Modern	Low
HA3	Dumbarton to Tyndrum Military Road	HER 22377	Post-medieval	Low
HA4	Woodbank House stables	NRHE, NS38SE98	Post-medieval	High

Woodbank House and its gazebo are Category A-listed Buildings (LB1125), whilst the stables are recorded on the NRHE (NS38SE98); HA2 and HA3 are recorded on the HER, and HA1 was identified from historic mapping.

Woodbank House is located in an estate park and, although the building itself is in a ruinous condition due to abandonment, neglect and vandalism, the park itself retains aspects of its original design. The house and stables are currently set within woodland, as depicted on the 1st Edition OS Map (Figure 4). Its position at the top of a rise in the landscape was no doubt purposeful with views from the house overlooking the estate land on the lower ground. Although now in an overgrown state, it is clear the tree planting has allowed for the house to be partially concealed yet still visible; with the house glimpsed from the road on the south-easterly approach, but hidden from view as you approach along the driveway from the north-east.

Archaeological potential of the PDA

The prehistoric features excavated at Vale of Leven Hospital (WoSAS Event ID 4699, 4993 and 4994) and the Neolithic cairn (SM6341) in Cameron Wood suggests that there is potential for further prehistoric activity in the area. The PDA is in an area of low-lying, fertile land beside Loch Lomond. The loch is part of a historic maritime network linking the highlands with central Scotland. There are also links to medieval seats of power

with the Earls of Lennox having their base at Balloch Castle for a long period of time. Such links would have been influential on the landscape and assets relating to this period may survive.

It would appear likely that most of the PDA was under agricultural use and partially forested from at least the medieval period until the recent past. If heritage assets survive they are likely to be field boundaries, furrows or perhaps structures relating to the agricultural use of the land. Historic mapping suggests some parts of the PDA may have been quarried in the post-medieval and modern period which may have implications for the survival of any unknown remains dating prior to this period.

With the above factors taken into account and according to the criteria in Table 2, the PDA is considered to be of medium archaeological potential.

Heritage assets in the Study Area (Figure 2 and Figure 3)

Scheduled Monuments

There are two Scheduled Monuments in the outer study area; Cameron Home Farm, chambered cairn 720m S of (SM6341), and the medieval Balloch Castle earthwork (SM3385) which lies within Balloch Castle IGDL (GDL0042). The IGDL corresponds to the estate and grounds of the later Balloch Castle (LB123), which is a Category A-listed building discussed below.

Table 4: Scheduled Monuments included in the assessment

Ref.	Name
SM6341	Cameron Home Farm, chambered cairn 720m S of
SM3385	Balloch Castle, earthwork, Loch Lomond Park

It is likely that the medieval Balloch Castle's location was chosen in order to overlook the River Leven where it flows out of Loch Lomond. Wide views across and along Loch Lomond are also available from this location, and any approaches from the north over land or water could be easily monitored.

Inventory Garden and Designed Landscape

There is one IGDL within the Study Area. Balloch Castle (GDL00042) is at the southern end of Loch Lomond and along the eastern bank of the River Leven. There are also four Listed Buildings within the IGDL. Balloch Castle (LB123) is a Category A-listed building, built in the eighteenth century; the remaining Listed Buildings are the Category B-listed South Lodge, and Walled Garden, and the Category C-listed North Lodge.

Table 5: Listed Buildings within Balloch Castle IGDL

Ref.	Name	Category
LB123	Balloch Castle	A
LB43221	Balloch Castle, South Lodge	B
LB43222	Balloch Castle, Walled Garden	B
LB43220	Balloch Castle, North Lodge	C

The IGDL is characterised by ornamental parkland and woods creating designed views within the estate. The boundaries of the IGDL are planted with shelter belts of woodland, which allow glimpses of the loch from certain parts of the IGDL.

The views from Balloch Castle (LB123) were intended to be across the ornamental parks and woods to the loch beyond. Woodland walks were designed to allow glimpses and views of the loch. The majority of the designed views are north and north-west, across the estate, the loch and the hills beyond. The views to the west and south towards Balloch and the PDA are screened by trees.

Listed Buildings

There are 14 Listed Buildings within the Study Area (in addition to those within the Balloch Castle IDGL). They include one Category A; nine Category B, and four Category C-listed Buildings.

Table 6: Listed Buildings included in the assessment

Ref.	Name	Category
LB46721	Balloch Pier, Slipway and Engine House	A
LB91	Tullichewan Castle, North Lodge	B
LB1137	Jamestown, Main Street, Jamestown Parish Church	B
LB4903	Balloch, Lower Stonymollan Road, Drumkinnon Farm	B
LB4904	Cameron House, Lodge	B
LB43215	Balloch, Balloch Road, River Leven, Balloch Bridge	B
LB43218	Balloch, Lomond Road, River Leven, Lomond Bridge	B
LB43219	Balloch, Lomond Road, Fisherwood	B
LB43229	Lower Stonymollan Road, Drumkinnon Farm, Mill, Granary and Sawmill	B
LB43230	Tullichewan Estate, Stables Cottage	B
LB1124	Cameron House, Drumkinnon Cottage	C
LB43216	Balloch, Drymen Road, The Cottage	C
LB43217	Balloch, Balloch Road, Tullichewan Hotel	C
LB43226	Jamestown, Main Street, Jamestown Primary School	C

Balloch Pier, slipway and engine house (LB46721) is Category A listed and is just outside the north-eastern corner of the PDA. It is listed for its architectural and industrial heritage interest, and as part of a group of structures related to the railway, including HA1 and HA2.

Other Designated Heritage Assets

There are no World Heritage Sites, Inventory Historic Battlefields, or Conservation Areas within the Study Area.

Undesignated Heritage Assets

There are 14 undesignated heritage assets within the Study Area. These largely relate to Balloch's recent industrial past and include buildings and features associated with the railway, grain milling, textile production and agriculture. All are considered to be of low importance.

Table 7: Undesignated assets within the outer study area

HER Ref.	Name and location	Description
7051	Tullichewan Castle / Balloch, Tullichewan / Tulliechewan	Castle
20346	Stirling to Dumbarton Military Road	Military Road
21012	Balloch, Dalvait Road, Lennoxbank House / Lennoxbank House Hotel / Riverside Motor Inn	House
21639	Balloch, Forth and Clyde Railway Junction	Railway Junction
21640	Balloch Pier Station / Loch Lomond, Balloch Pier	Railway Station; Pier
21647	Balloch, Balloch Hotel	Hotel
21649	Cameron House, Cameron Cottage / Cameron Issues / Loch Lomond	Building
21743	Balloch Pier	Pier
21851	Tullichewan Farm / Balloch, Tulliechewan Dairy Farm	Farm
39968	Balloch, Mill	Industrial; Mill (possible)

HER Ref.	Name and location	Description
51516	Mill of Haldane	Mill Stones
61328	Haldane's Mill	Grain Mill
61329	Balloch, Mill	Mill Dam; Mill Pond
61330	Mills of Balloch	Grain Mill
61331	Levenbank Print Works	Textile Print Works

5 PREDICTED EFFECTS OF THE DEVELOPMENT

Potential Impacts

Potential impacts arising from the proposed development include direct impacts involving disturbance or removal of heritage assets by construction groundworks and setting impacts arising from changes to views from and towards heritage assets.

Predicted Direct Impacts

There are five heritage assets within the PDA. HA1 and HA3 record the course of historic routes; a railway and a military road respectively; HA2 is the old Balloch station building, and LB1125 and HA4 are the Category A-listed Woodbank House and gazebo, and Woodbank stables respectively.

The development proposals seek to maintain the area around HA1 as a woodland walk. The course of the military road is preserved in the route of Old Luss Road; no historic fabric survives as upstanding remains. The development proposals also seek to preserve the old Balloch Station building. No significant direct impacts are anticipated upon HA1, HA2 or HA3.

The Category A-listed Woodbank House and gazebo (LB1125), and stables (HA4), are considered to be of high importance and any proposed modifications should be designed with reference to this importance. Any alteration to these buildings will be at the discretion of Historic Environment Scotland.

The PDA is considered to be of medium archaeological potential, and there is a risk of direct impacts upon archaeological deposits that may survive as buried remains within the proposed development footprint.

Predicted Setting Impacts

Woodbank House was designed on an east/west axis; eastern views from the front of the house are of the southern end of Loch Lomond and Balloch to the hills beyond. There is a possibility of setting impacts upon HA4.

The proposed development will also feature in south-western views from Balloch Castle Scheduled Monument (SM3385) and Balloch Castle IGD (GDL0042), and there is a possibility of setting impacts upon both. Depending on the nature of the development in its vicinity, there is also potential for setting impacts upon the Category A-listed Balloch pier, slipway and engine house (LB46721).

6 CONCLUSIONS

Impacts on currently undiscovered archaeological remains may occur during construction of any potential development. Considering the archaeological potential of the PDA, archaeological investigation is likely to be required in advance of construction works. This is likely to comprise evaluation (trial trenching, possibly in conjunction with geophysical survey) followed by excavation and recording of any remains of archaeological interest.

It is not yet known if there will be a direct impact on the heritage assets associated with the buildings at Woodbank House. It is recommended that consultation with Historic Environment Scotland in regards to Category A-listed buildings, alterations to them and what restrictions are involved, is sought as a priority. It is

also recommended that an appropriate archaeological programme of works is agreed with WoSAS to record these and any associated assets in advance of any alterations. This will most probably involve a building recording survey of the House, and an evaluation (trial trenching, possibly in conjunction with geophysical survey) followed by excavation and recording of any remains of archaeological interest within the environs of Woodbank House.

Potential impacts on the settings of Balloch Castle Scheduled Monument, Balloch Castle IGDL and Balloch pier, slipway and engine house Listed Building will require further detailed assessment, possibly with reference to visualisations of the proposed development.

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Historic maps

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Roy, W 1747-55, *Military Survey of Scotland - Highlands*

Ross, C 1777, *A map of the Shire of Dumbarton*

Ainslie, J 1821, *Map of the Southern Part of Scotland*

Thomson, J 1832, *Dunbartonshire*

Bartholomew, JG 1902, *Trossachs, Loch Lomond*

The following Ordnance Survey maps held by the National Library of Scotland were examined:

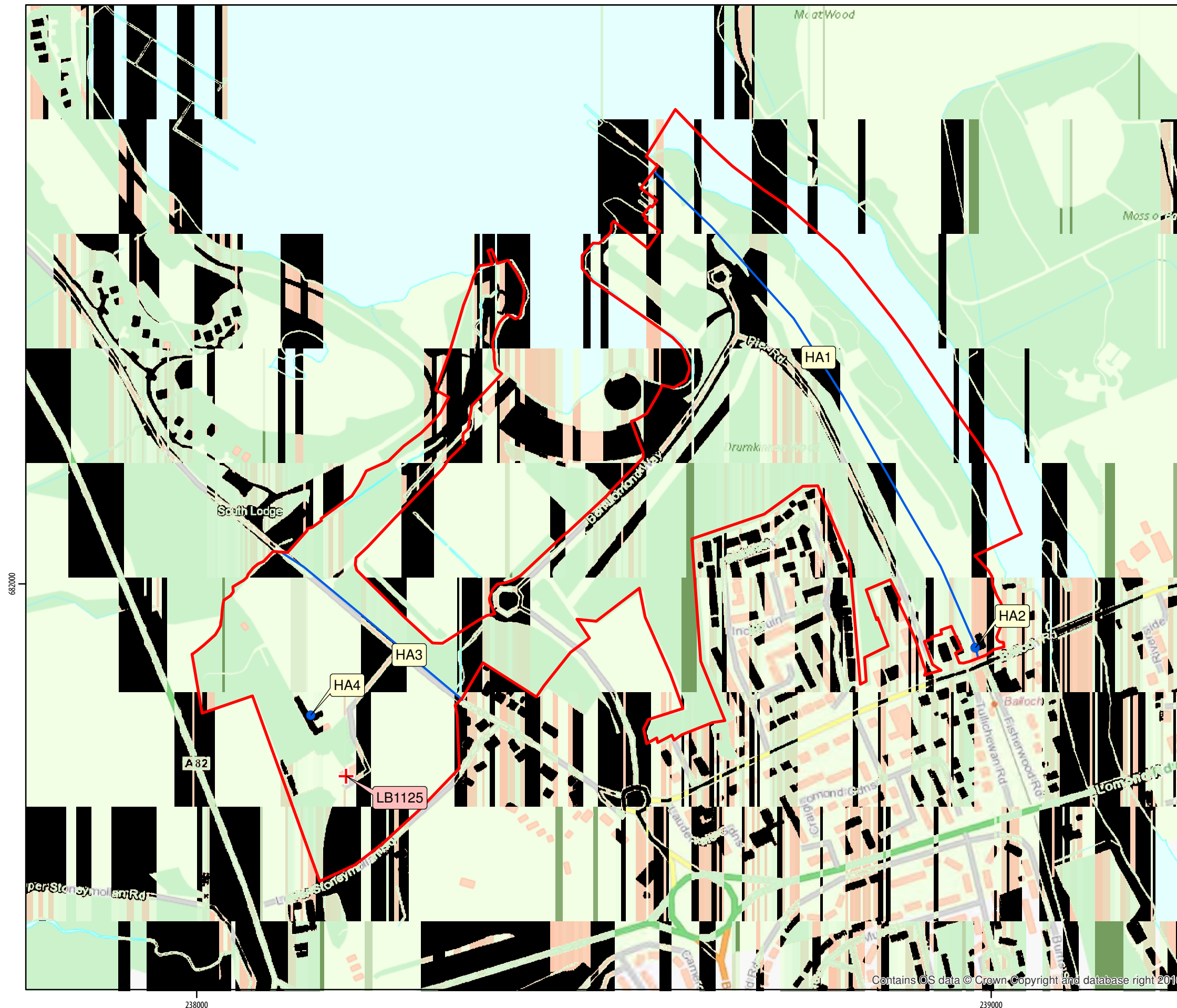
1864 (surveyed 1860) Dumbartonshire, Sheet XVIII, 1:2,500

1898 (surveyed 1897) Dumbartonshire, Sheet 18.01, 1:25,000
1898 (surveyed 1897) Dumbartonshire, Sheet 18.05, 1:25,000
1918 (surveyed 1914) Dumbartonshire, Sheet 14.14, 1:25,000
1918 (surveyed 1914) Dumbartonshire, Sheet 18.02, 1:25,000
1938 (surveyed 1936) Dumbartonshire, Sheet 18.02, 1:25,000

Aerial Photographs

The following aerial photographs held by the NCAP were examined:

Sortie	Date	Frame nos.
AFL2132	10.09.49	SAW026582
ASS/51388	10.06.88	0195
AFL2014	07.10.27	SPW019589
n/a	01.01.39	SPW062643

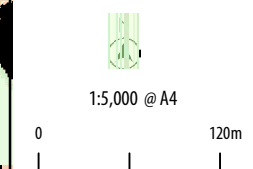


KEY

- + Category A Listed Building
- Heritage Asset
- Heritage Asset
- Proposed Development Area

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FIGURE 1
Heritage Assets within Proposed Development Area

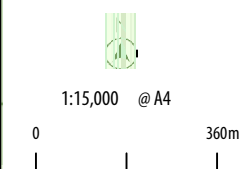


FIGURE 2
Designated Heritage Assets within the Study Area

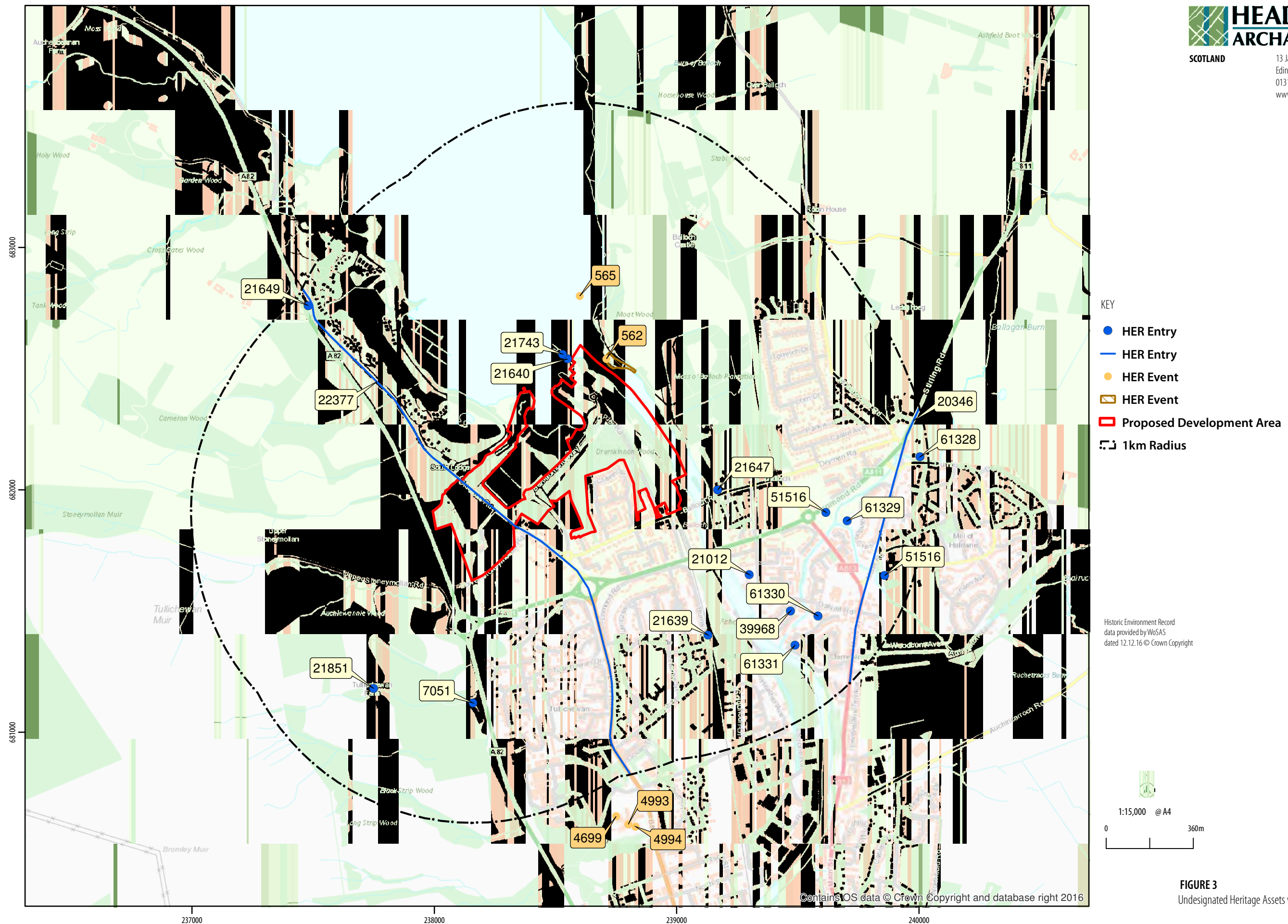
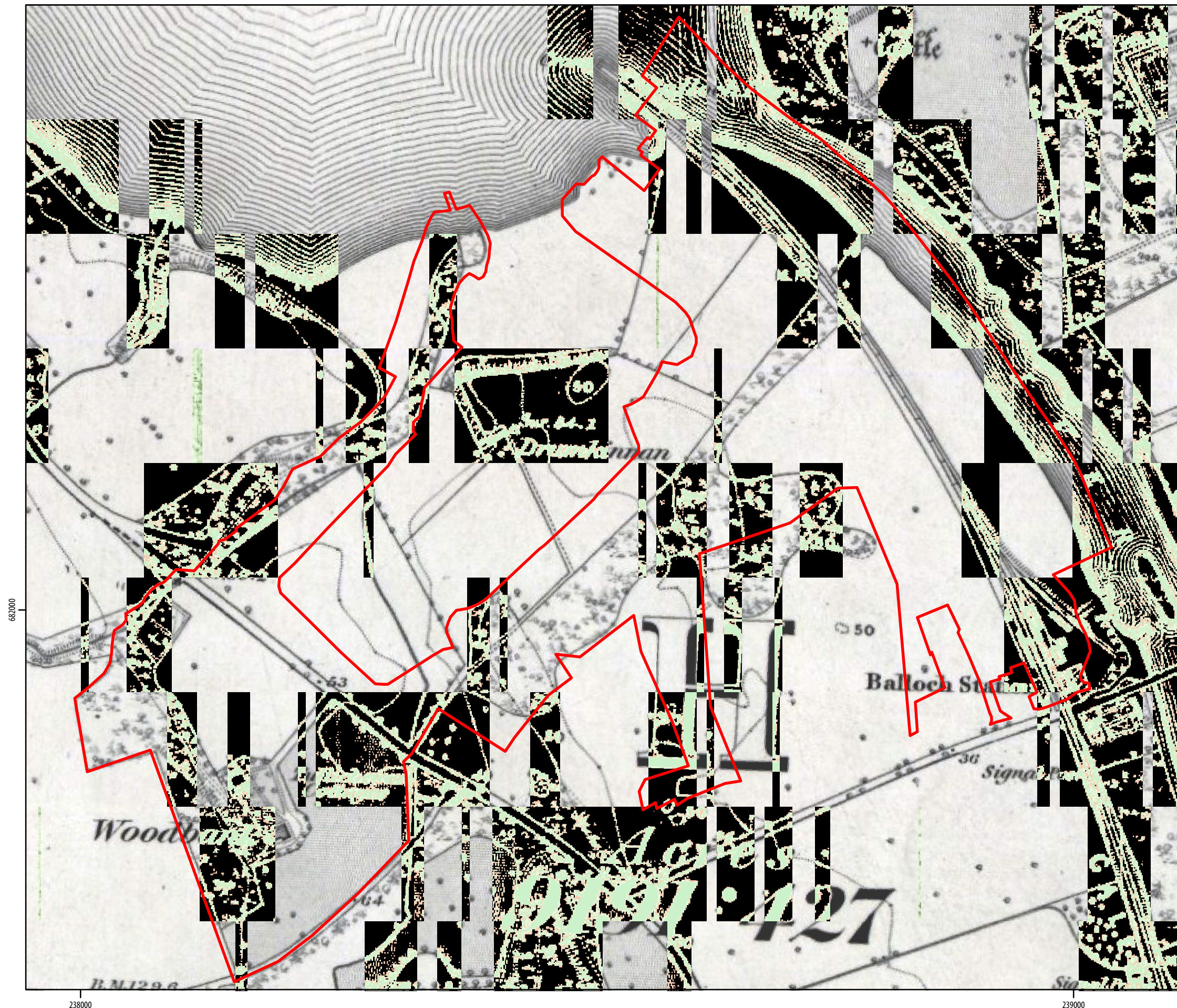


FIGURE 3
Undesignated Heritage Assets within the Study Area



KEY

Proposed Development Area

Extract from 'Dumbartonshire, Sheet XVIII
(includes: Bonhill, Dumbarton, Kilmarnock)' 1864

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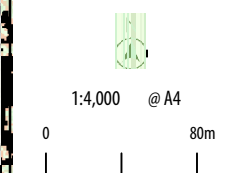


FIGURE 4
Extract from OS Map 6-inch First Edition, 1864

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