

West Riverside and Woodbank House

Environmental Statement: Non-Technical Summary

On behalf of **Flamingo Land Ltd and Scottish Enterprise**



Project Ref: 35854 | Rev: 01 | Date: May 2018



Document Control Sheet

Project Name: West Riverside and Woodbank House

Project Ref: 35854

Report Title: Environmental Statement: Non-Technical Summary

Doc Ref: 35854/3003

Date: May 2018

	Name	Position	Signature	Date
Prepared by:	Emma Brown	Economic Planner	EB	April 2018
Reviewed by:	Mark Johnston	Senior associate	MJ	23 rd April 2018
Approved by:	Douglas McDonald	Partner	DMcD	23 rd April 2018
For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved
A	3 rd May	Issue for Planning	DS/MJ	MJ	DMcD

This report has been prepared by Peter Brett Associates LLP ('PBA') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which PBA was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). PBA accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

© Peter Brett Associates LLP 2018

Contents

1	Introduction	1
1.1	Project Background	1
1.2	The EIA, ES, NTS and Related Documents.....	1
1.3	Project Team	2
1.4	Terms and Definitions	2
2	Site and Surrounding Area.....	3
2.1	The Site and Surroundings.....	3
2.2	History of the Site	4
3	The Proposed Development.....	6
3.1	Key Development Characteristics	6
3.2	Proposed Construction Works, Programme and Management	6
3.3	Consideration of Alternatives	7
4	EIA Process	8
4.1	Introduction	8
4.2	Overview.....	8
4.3	Scope of the EIA.....	8
4.4	Consultation.....	9
4.5	Assessment Methodology	9
4.6	Impact Interactions	12
4.7	Approach to Cumulative Impact Assessment	12
5	Planning & Policy Context	14
5.1	Relevant Statutory Provisions	14
5.2	Development Plan	14
5.3	National Planning Policies.....	14
5.4	Other Material Considerations.....	14
6	Assessment of Effects.....	16
6.1	Introduction	16
6.2	Ecology and Woodland	16
6.3	Traffic and Transport	17
6.4	Noise	18
6.5	Air Quality	19
6.6	Water, Hydrology and Flood Risk.....	19
6.7	Ground Conditions and Geology	20
6.8	Landscape and Visual	20
6.9	Archaeology and Heritage	21
6.10	Socio-Economics, Tourism, Recreation and Public Access	22
6.11	Impact Interactions	23
7	Mitigation and Monitoring Requirements	25
7.1	Introduction	25

7.2	Proposed Mitigation and Enhancement Measures	31
7.3	Proposed Monitoring Arrangements.....	41

Tables

Table 4.1	Generic Significance Criteria	12
Table 4.2	Relevant Approved Developments.....	13
Table 4.3	Relevant Proposed Developments.....	13
Table 7.1	Summary of Proposed Mitigation and Enhancement Measures	31

Appendices

Appendix A	Site Location Plan
Appendix B	Proposed Development

1 Introduction

1.1 Project Background

- 1.1.1 This document is the Non-Technical Summary ('NTS') of an Environmental Statement ('ES') prepared to accompany an application for planning permission in principle (PPiP) for the erection and operation of a proposed tourism and leisure-led mixed use development ('the proposed development') on land at West Riverside and Woodbank House, Balloch ('the site'). The PPiP application and the ES (and thus NTS) are submitted on behalf of Flamingo Land Ltd and Scottish Enterprise ('the Applicants') to the Loch Lomond and the Trossachs National Park Authority (LLTNPA) as the relevant local planning authority.

1.2 The EIA, ES, NTS and Related Documents

- 1.2.1 This NTS provides a summary of the findings of the ES undertaken for the proposed development, using non-technical language. In doing so, this NTS provides the information prescribed within the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 as amended, referred to as 'the EIA Regulations'. The transitional arrangements within the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017, which came into force in May 2017, confirm that EIAs for development proposals which were the subject of an EIA scoping request prior to 16th May 2017 should proceed in accordance with the 2011 EIA Regulations. As a combined EIA screening and scoping request was submitted by PBA on behalf of the Applicants to the LLTNPA in April 2017, the 2011 EIA Regulations remain applicable to the EIA undertaken for the proposed development.
- 1.2.2 Running concurrently with the design process (which remains ongoing), the EIA has sought to:
- Identify the likely environmental effects of the proposed development;
 - Define appropriate design and construction measures and good practice to mitigate likely significant adverse environmental effects and maximise opportunities for environmental enhancements resulting from the construction and operation of the proposed development; and,
 - Determine the significance of the likely residual environmental effects from the proposed development remaining identified mitigation and enhancement measures have been taken into account.
- 1.2.3 The ES comprises the following volumes:
- **Volume 1** – Main report;
 - **Volume 2** – Appendices; and
 - **Non-Technical Summary** (this document).
- 1.2.4 The other principal documents submitted with the planning application include:
- Drawings (to be approved and illustrative);
 - Design Statement;
 - Pre-Application Consultation Report;
 - Transport Assessment;
 - Flood Risk Assessment;
 - Enabling works report;
 - Drainage Assessment;
 - Planning Statement.

1.3 Project Team

- 1.3.1 The ES, and this NTS, has been co-ordinated by Peter Brett Associates LLP ('PBA') on behalf of the Applicants, with input from the following technical assessment specialists:
- **Peter Brett Associates (PBA)** – EIA Co-ordination, Planning, Traffic & Transport, Ground Conditions & Geology, Socio Economics, Tourism, Recreation & Public Access;
 - **EnviroCentre** – Ecology, Trees & Woodland, Water Hydrology & Flood Risk, Air Quality, Noise & Vibration;
 - **Gillespies** – Landscape and Visual Impact; and,
 - **Headland Archaeology** – Archaeology.
- 1.3.2 The wider project team involved in the preparation of the PPiP application for the proposed development also includes:
- **Anderson Bell + Christie Architects** – Project Architect and Masterplanners;
 - **PBA** – Planning Agent, Civil Engineering, Site Investigation (SI) Co-ordination, Pre-Application Consultation;
 - **Brown + Wallace** – Cost Consultant; and,
 - **Tourism Resources Limited** – Commercial Strategist.

1.4 Terms and Definitions

- 1.4.1 For ease of reference, the following terms have been used in the NTS:
- The site – the area within the PPiP application boundary which the ES (and NTS) relates to, as outlined in red on the Site Location Plan (**Figure 2.1**) within Volume 2 – Technical Appendices;
 - West Riverside and Woodbank House – the two distinct areas of land which together comprise the site;
 - The proposed development – the erection and operation of a tourism and leisure-led mixed use development as detailed within **Chapter 3** of this NTS;
 - The Applicants – Flamingo Land Ltd and Scottish Enterprise;
 - The PPiP application - the application for planning permission in principle being submitted on behalf of the Applicants for the proposed development; and,
 - The EIA Regulations – the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 as amended.

2 Site and Surrounding Area

2.1 The Site and Surroundings

Geographical Location

- 2.1.1 The PPiP application site ('the site') is located to the north of Balloch and it contains two distinct areas, known respectively as West Riverside and Woodbank House. The site is therefore referred to in full as 'West Riverside and Woodbank House'. This site comprises approximately 35.5ha of land north of Balloch, at the southern tip of Loch Lomond. A Site Location Plan, showing the PPiP application red line boundary delineated in red and other land under the control of the Applicants in blue, is provided within **Appendix A** to this NTS.

Access

- 2.1.2 Access into the site is influenced by the location of the River Leven to east, Loch Lomond to the north and the existing urban form of Balloch to the south.
- 2.1.3 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 form the A811 Stirling Road and the A82 trunk road network.
- 2.1.4 The A82 provides the principal access route to the west of Loch Lomond, other parts of the Loch Lomond and the Trossachs National Park, Argyll & Bute and the North-West Highlands. This trunk route is strategic in nature and is therefore maintained by Transport Scotland.
- 2.1.5 The site is a very short walking distance to Balloch Train Station, which at present 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.
- 2.1.6 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.

Environmental Features

West Riverside

- 2.1.7 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 Clairinsh to the South.
- 2.1.8 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.
- 2.1.9 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.
- 2.1.10 An oil pipeline operated by Ineos runs east-west through the northern portion of the West Riverside area of the 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.
- 2.1.11 As the site is located close to the waterfront, it is considered to be 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 form the A811 Stirling Road and the A82 trunk road network.

- 2.1.12 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.
- 2.1.13 The application 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.
- 2.1.14 The John Muir Way runs through the site. This established route will be secured and enhanced by the development. The site is also situated very close to National Cycle Route 7.

Woodbank House

- 2.1.15 The area known as Woodbank House comprises the remains of the Woodbank House hotel, outbuildings and gardens including estate walls. The area is situated immediately to the west of Old Luss Road and approximately 500m east of the A82.
- 2.1.16 At the centre of the Woodbank area of the site lies the remains of Woodbank House, a Grade-A listed property. The buildings which comprised this hotel are in a state of advanced disrepair as a result of a fire (at the main hotel building) and subsequent dereliction. The land surrounding the house are wooded and slope steeply upwards from the Old Luss Road towards the A82. To the front of the ruined Woodbank House building, between it and the Old Luss Road, is an area of open grassland that is currently used for grazing.

Surrounding Area

- 2.1.17 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 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; and
 - Other visitor attractions and tourism developments are located at greater distance within Balloch and along the shores of Loch Lomond.
- 2.1.18 Relevant environmental characteristics and sensitivities within the surrounding area are identified as potential receptors within the technical assessments presented in **Chapters 6 – 15** of the **ES**.

2.2 History of the Site

West Riverside

- 2.2.1 Available historical maps from 1864 show that the West Riverside area of the site 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).
- 2.2.2 Historic mapping indicates that an excavation labelled as a Sand Pit was present 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.

- 2.2.3 In the 1960s, excavations labelled as Gravel Pits were present 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 retail and leisure destination.
- 2.2.4 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

- 2.2.5 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.

3 The Proposed Development

3.1 Key Development Characteristics

- 3.1.1 The planning application which this NTS accompanies seeks a PPiP for the erection and operation of a proposed tourism and leisure-led mixed use development on land at West Riverside and Woodbank House, Balloch, which includes:
- Refurbished tourist information building;
 - 60-bedroom Apart-hotel;
 - 32-bedspace budget accommodation;
 - Up to 105 self-catering lodges; /
 - 20 houses;
 - 900m² brewery;
 - Leisure / pool /water park area up to approximately 2,500m²;
 - Restaurants/Cafe & Retail areas up to 1,100m² in total;
 - Visitor reception areas & hub building up to approximately 2,000m²;
 - External activity areas including tree top walk, events/ performance areas, children's play areas, monorail, forest adventure rides, picnic / play areas;
 - Staff and service area of up to approximately 900m²;
 - Associated parking (up to 320 additional spaces), landscaping and infrastructure development works; and,
 - Access to be taken from the surrounding road network including Ben Lomond Way and Pier Road.
- 3.1.2 The proposed development also includes the remains of the Grade A listed Woodbank House and attendant structures. The conservation and redevelopment of the Woodbank House façade and other listed structures within the site will be subject to future applications for planning and listed building consent.
- 3.1.3 As the Applicants are seeking PPiP rather than full planning permission, at this stage the proposed development comprises a suite of key parameters, within which the detailed design of the proposed development will be confirmed later. The Environmental Impact Assessment (EIA), and this NTS, has therefore adopted a Rochdale Envelope approach to assess likely significant effects on the environment from the key parameters of the proposed development. Providing that the final design remains within these key parameters, this approach ensures that the likely 'worse case' effects can be considered when determining the PPiP application for the proposed development.
- 3.1.4 The plan of the proposed development is shown in **Appendix B** to this NTS.

3.2 Proposed Construction Works, Programme and Management

Construction Works and Programme

- 3.2.1 At this pre-consent stage, it is anticipated that construction will take approximately two years and that the key construction activities are likely to include:
- Vegetation clearance, earthworks and soil preparation to prepare areas of the site for construction activities;
 - Construction of infrastructure including internal access routes, drainage pipes and SUDS attenuation basin;

- Formation of public open space, with associated landscaping;
- Targeted tree removal and installation of forest lodges and path networks;
- Construction of building foundations (where required), structure, cladding and glazing and internal walls and partitions;
- Installation of fixtures, fitting and building services;
- Utility diversions, upgrades and connections as required; and,
- External landscaping, highway and drainage works.

Construction Management Arrangements

- 3.2.2 The applicant is also committed to deploying best practice in construction management to minimise potential environmental effects and disruption during the construction of the proposed development. A Construction Environmental Management Plan (CEMP) will be implemented to reduce the risk of any likely significant adverse effects on environmental receptors as a result of construction activities, and to minimise disturbance to the residents. This is discussed further in **Section 7**.
- 3.2.3 Given that the applicant includes Scottish Enterprise, a designated Scottish public authority, relevant contracts may include applicable community benefit clauses in accordance with the Procurement Reform (Scotland) Act 2014 and associated guidance. Such clauses could include guaranteed employment opportunities for participants of construction related apprenticeship schemes and local education facilities. This is considered further within **Chapter 14 - Socio-economics, Tourism, Recreation and Public Access** of the **ES**.

3.3 Consideration of Alternatives

- 3.3.1 Paragraph 4 of Part II of Schedule 4 of the EIA Regulations requires an ES to include an outline of the main alternatives considered by the Applicant, indicating the main reasons for the choice made, taking into account the environmental effects.
- 3.3.2 Although the EIA Regulations do not expressly require the applicant to study alternatives, the nature of certain developments and their location may make the consideration of alternative sites a material consideration. In such cases, the ES must record this consideration of alternative sites. More generally, consideration of alternatives (including alternative sites, choice of process, and the phasing of construction) is widely regarded as good practice, and resulting in a more robust application for planning permission. Ideally, EIA should start at the stage of site and process selection, so that the environmental merits of practicable alternatives can be properly considered. Where this is undertaken, the main alternatives considered must be outlined in the ES.
- 3.3.3 For the purposes of the EIA, the only alternatives considered in relation to the proposed development were:
- Different possible formulations of proposed land use blocks across the site. The proposed configuration of land use blocks has been arrived at following detailed analysis of multiple onsite constraints, including the need to safeguard INEOS pipeline infrastructure and to minimise disturbance to ancient woodland. As reported in **Chapter 6 – Ecology and Woodland** of the **ES**, a glade survey has been undertaken to determine the feasibility of installing lodges within pockets of Drumkinnon Woodland without resulting in significant disturbance to or the substantial loss of trees. The proposed configuration of land use blocks is considered to be optimal in terms of safeguarding environmental and infrastructure constraints whilst enabling the development of a commercially viable tourism and leisure development; and,
 - The potential inclusion of a 100m viewing tower. This was dropped from the proposed development in order to take account of feedback received from local communities through statutory pre-application consultation (PAC) activities, as detailed within the **West Riverside and Woodbank House PAC Report**.

4 EIA Process

4.1 Introduction

- 4.1.1 EIA is a systematic procedure that must be followed when determining applications seeking consent for certain categories of project. It aims to identify a project's likely significant environmental effects, identify mitigation measures to reduce the level of or avoid those effects, and assess the residual significance of predicted environmental effects taking account of all proposed mitigation and enhancement measures.
- 4.1.2 A suite of information requirements which the ES, and this NTS, must satisfy are set out within the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 (the EIA Regulations).

4.2 Overview

- 4.2.1 In general terms, the main stages in the EIA are as follows:
- Screening – determining the need for EIA;
 - Scoping – identifying significant issues, determining the scope of the EIA;
 - Data review – drawing together and review available data;
 - Baseline surveys – undertaking baseline surveys and monitoring;
 - Assessment and iteration – assessing likely significant effects of development, evaluate alternatives, provide feedback to design team on potential adverse impacts, modify development or impose parameters, incorporate mitigation (including monitoring and long-term management), assess effects of mitigated development; and
 - Preparation of the ES.

4.3 Scope of the EIA

EIA Screening and Scoping

- 4.3.1 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 EIA Regulations. Furthermore, the site is located within the boundaries of Loch Lomond and the Trossachs National Park (LLTNP). Within the meaning assigned to it by the EIA 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).

- 4.3.2 In recognition of the environmental sensitivities affecting the site and surrounding area, the Applicant considered from the outset that a formal EIA would be likely to be required to support any planning application submitted for the proposed development. To confirm this and to obtain clarity on the required scope of the EIA, a formal EIA screening and scoping report (PBA, March 2017) was submitted to the Loch Lomond and the Trossachs National Park Authority (LLTNPA) in their role as the relevant local planning authority.
- 4.3.3 Subsequently, LLTNPA provided a positive EIA Screening Opinion in April 2017 which confirmed that a formal EIA would be required on account of likely significant effects from the proposed development. After consulting relevant stakeholders an EIA Scoping Opinion was then issued by LLTNPA on 11th May 2017 to define the required scope of this EIA; this is provided in full within **Appendix 4.1** of the **ES**.

Environmental Effects Considered in the ES

- 4.3.4 The ES provides technical assessments of likely significant environmental effects on or arising from the following topics. This NTS provides a summary of these effects:
- Ecology and Woodland (**Volume 1, Chapter 6** of the **ES**);
 - Traffic and Transport (**Volume 1, Chapter 7** of the **ES**);
 - Noise and Vibration (**Volume 1, Chapter 8** of the **ES**);
 - Air Quality (**Volume 1, Chapter 9** of the **ES**);
 - Water, Hydrology and Flood Risk (**Volume 1, Chapter 10** of the **ES**);
 - Ground Conditions and Geology (**Volume 1, Chapter 11** of the **ES**);
 - Landscape and Visual (**Volume 1, Chapter 12** of the **ES**);
 - Archaeology and Heritage (**Volume 1, Chapter 13** of the **ES**);
 - Socio-Economics, Tourism, Recreation and Public Access (**Volume 1, Chapter 14** of the **ES**); and
 - Impact Interactions (**Volume 1, Chapter 15** of the **ES**).

4.4 Consultation

- 4.4.1 In addition to formally requesting LLTNPA to adopt an EIA Scoping Opinion in respect of the proposed development, additional consultation has been undertaken to provide information, discuss assessment methods and findings, and to agree mitigation measures and design responses. Consultation has been undertaken with stakeholders including¹:
- LLTNPA Access Officer;
 - West Dunbartonshire Council Roads Department;
 - Transport Scotland;
 - Abellio Scotrail;
 - Historic Environment Scotland;
 - Scottish Water; and
 - Scottish Environment Protection Agency.
- 4.4.2 Post scoping consultation has been undertaken with individual consultees to clarify points noted within LLTNPA's EIA Scoping Opinion, inform the emerging design of the proposed development (e.g. with respect to parking provision) and agree the detailed scope of the assessment presented in the **ES**. Details of these consultations are provided where relevant in **Subsection 3 – Methodology** of each assessment presented in **Chapters 6 – 15** of the **ES**.
- 4.4.3 A programme of community engagement has also been undertaken, as detailed within the statutory **Pre-Application Consultation (PAC) Report** which is submitted in support of the PPiP application for the proposed development.

4.5 Assessment Methodology

Establishing Baseline Conditions and Baseline Evolution

- 4.5.1 A range of site surveys and data collection exercises are needed to appropriately identify environmental conditions at the Application Site. The findings are briefly summarised in this NTS. Detailed survey reports are provided within the relevant topic chapters of **Volume 1** of the **ES**, supported as appropriate by technical reports provided in **Volume 2**.

¹ NB this is not an exhaustive list

Mitigation and Enhancement Measures

- 4.5.2 The technical assessments presented in **Volume 1, Chapters 6 – 15** of the ES firstly identify predicted effects from the proposed development on a ‘pre-mitigation basis’, before reporting predicted residual effects. Pre-mitigation effects are those predicted to arise as a result of the proposed development, but in the absence of any additional mitigation or enhancement measures identified through the EIA process as being required. A summary of all proposed mitigation and monitoring is provided in **Section 7** of this NTS and is available in full in **Volume 1, Chapters 16** of the **ES**.

Residual Effects

- 4.5.3 Residual effects are the environmental effects that will remain after the incorporation of both embedded and additional mitigation measures. It is these residual effects which should be considered when assessing the significance of predicted effects from the proposed development.
- 4.5.4 To provide an objective assessment of residual effects, their significance has been determined and is identified in the ES and this NTS as detailed below in **Section 4.5.6**. This allows for comparison of effects between topics, strengthens the assessment of impact interactions and allows decision makers to more easily examine and make a reasoned conclusion on the significant environmental effects of a project.

Significance Criteria

- 4.5.5 The two principal criteria for determining significance of an environmental effect are the magnitude of change and the sensitivity of an identified receptor to this change. The likelihood of the change occurring is also considered, as a constituent factor affecting the predicted magnitude of change.
- 4.5.6 The approach to assigning significance to predicted environmental effects is not itself detailed within the EIA Regulations, meaning that it is necessary to develop effect significance thresholds to underpin the assessments reported in the ES and thus the NTS. These thresholds are defined on a topic specific basis within **Chapters 6 – 14**, taking account of relevant regulations, guidance, standards, the advice and views of consultees, and expert judgement. Subsection 3 – Methodology within each of the ES Chapters explains the topic specific methodology adopted to identify the level and associated significance of predicted effects with reference to relevant thresholds. Where relevant, this is based on the factors identified above and the generic criteria set out in

4.5.7 **Table** 4.1 below.

Table 4.1 Generic Significance Criteria

	Level of Effect	Criteria
Significant	Substantial	These effects are assigned this level of significance as they represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites and features of national or regional importance. A change at a district scale site or feature may also enter this category.
	Major	These effects are likely to be important considerations at a local or district scale and may become key factors in the decision-making process.
	Moderate	These effects, while important at a local scale, are not anticipated to be key decision-making issues.
Not significant	Minor	These effects may be raised as local issues but are unlikely to be of importance in the decision-making process.
	Negligible or No Effect	Either no effect or effect which is beneath the level of perception, within normal bounds of variation or within the margin of forecasting error. Such effects should not be considered by the decision-maker.

- 4.5.8 Effects that are described as “substantial”, ‘major’ or ‘moderate’ are determined to be significant, whereas effects that are described as ‘minor’ or ‘negligible’ are determined to be not significant.

4.6 Impact Interactions

- 4.6.1 **Chapter** provide the assessment of impact interactions, i.e. receptors being affected by more than one environmental effect and therefore potentially being subject to a more significant combined effect than reported within the individual technical, assessment ES Chapters (i.e. **Chapters 6 – 14**). Details of the approach to identifying and assessing impact interactions is provided within **Volume 1, Chapter 15** of the **ES**.

4.7 Approach to Cumulative Impact Assessment

- 4.7.1 The EIA Regulations require likely significant cumulative effects from a development proposal in combination with existing and approved development to be described within an ES.
- 4.7.2 Existing developments are considered as part of the baseline scenario within the technical assessments provided in **Chapters 6 – 14** of the **ES**, whilst approved developments are considered separately within the cumulative impact assessment section of each technical assessment ES Chapter.

Approved Development

- 4.7.3 Approved developments of relevance to the ES are listed in **Table 4.2** below and shown on **Figure 2.2 - Cumulative Development Location Plan** provided within **ES Volume 2 - Appendix 2.1**.

Table 4.2 Relevant Approved Developments

Planning Reference	Application	OS grid reference	Overview
Drumkinnon Bay 2017/0326/DET	Dredging	NS 38531 82178	Dredging operation to extend existing dredged channel
Woodbank Inn 2017/0223/DET	Extension	NS 38938 81921	Demolition of kitchen extension. Erection of 3 storey extension comprising of 18 hotel rooms and kitchen

Other Proposed Development

- 4.7.4 **Table 4.3** below identifies the approved developments which have been considered in the EIA.

Table 4.3 Relevant Proposed Developments

Planning Reference	Application	OS grid reference	Overview
Sweeney Cruises Replacement Infrastructure 2017/0373/DET		NS 38938 81921	Demolition of existing buildings and erection of: office building; slipway enclosure/workshop building; boathouse and installation of 2 pontoons
Balloch Street Design Project		NS 39299 80180	The Balloch Village Plans (Street Design) Project builds on the extensive engagement undertaken through the 'Live in Balloch' Charrette process that took place in February and March 2016.

5 Planning & Policy Context

5.1 Relevant Statutory Provisions

- 5.1.1 The key planning legislation of relevance to the ES and the overall EIA process is:
- The Town and Country Planning (Scotland) Act 1997 as amended ('the Principal Act');
 - The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 as amended;
 - The National Parks (Scotland) Act 2000 as amended;
 - The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 as amended ('the EIA Regulations');
 - The Climate Change (Scotland) Act 2009; and,
 - The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013 as amended.
- 5.1.2 Under section 25 of the Principal Act, the determination of all planning applications must be made in accordance with the statutory Development Plan applicable to the site of a proposed development, unless material considerations indicate otherwise. Section 264A of the Principal Act also requires special attention to be paid to the applicable National Park Plan. Section 59 of the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 as amended requires planning authorities to have "*special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses*".

5.2 Development Plan

- 5.2.1 The current statutory Development Plan applicable to the site of the proposed development comprises the Loch Lomond and the Trossachs Local Development Plan 2017 – 2021 ('the LDP'), which was adopted by LLTNPA in December 2016, and associated adopted Supplementary Guidance.
- 5.2.2 The LDP is split into four distinct sections (and appendices), of which Sections 2 – Vision, Section 3 – Place and Section 4 - Policies are of relevance.
- 5.2.3 Other policies within the adopted LDP of relevance to the proposed development are outlined in **Table 5.1** of the **ES (Volume 1)**. Particular attention is given to Overarching Policies 1 – Strategic Principles and 2 – Development Requirements as these set the framework within which all environmental and wider planning issues will be assessed through individual subject policies.

5.3 National Planning Policies

- 5.3.1 National planning policy is contained within both the National Planning Framework 3 (NPF3) and the Scottish Planning Policy (SPP), both of which were published in June 2014. Given that the statutory Development Plan applicable to the site post-dates this and has undergone a formal Examination through which its soundness has been tested, and since section 25 of the Principal Act requires planning applications to be determined in accordance with the Development Plan unless material considerations indicate otherwise, national planning policy is considered to play a secondary role in this EIA for the proposed development.

5.4 Other Material Considerations

- 5.4.1 Other material considerations of relevance to the proposed development are:
- LDP Supplementary Guidance;
 - LDP Planning Guidance;
 - Draft LLTNP Partnership Plan (2018 – 2023);

- National Planning Policies; and,
 - Other National Policies, Advice and Guidance.
- 5.4.2 A full summary of the relevant legislative and planning policy context applicable to the proposed development is provided in **Chapter 5** of **Volume 1** of the ES.

6 Assessment of Effects

6.1 Introduction

- 6.1.1 This section provides a summary of each of the technical assessments presented within ES **Volume 1, Chapters 6 – 15**.

6.2 Ecology and Woodland

- 6.2.1 An assessment of the likely significant effects on local ecology and woodland from the proposed development is provided in **Volume 1, Chapter 6** of the **ES**. The ES Chapter details the ecological studies undertaken and presents the results of an Ecological Impact Assessment (EclA) undertaken for the proposed development in accordance with the latest guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) (CIEEM, 2016).
- 6.2.2 The ecology and woodland assessment has considered the likely effects of the proposed development on the Important Ecological Features (IEFs) within the Zone of Influence (Zol). A suite of embedded and further mitigation measures is proposed to avoid, prevent and minimise the likely negative significant effects on ecology and woodland IEFs.
- 6.2.3 Taking account of the proposed mitigation and enhancement measures, **the significant residual effects from the construction and operation of the proposed development are limited to:**
- Negative impacts of partial loss of habitat and damage to ancient woodland (LEPO), broadleaved semi-natural woodland and intact hedgerow, resulting in significant effects at a local level;
 - Negative impacts of pollution to standing water and running water, resulting in significant effects at a local level;
 - Negative impacts of habitat loss, disturbance, displacement, injury and fatality to red squirrel, resulting in significant effects at a local level;
 - Negative impacts of recreational use and pollution to ancient woodland (LEPO), broadleaved semi-natural woodland and inundation vegetation, resulting in significant effects at a local level;
 - Negative impacts of injury and fatality, disturbance and displacement to otter and red squirrel, resulting in significant effects at a local level;
 - Positive impacts of compensatory planting and future management to ancient woodland (LEPO), broadleaved semi-natural woodland and intact hedgerow, resulting in significant effects at a local level;
 - Positive impacts of shoreline and riparian habitat management to standing water and running water and otter, resulting in significant effects at a local level;
 - Positive impacts of purpose built resting and feeding provisions to red squirrel and pine marten, resulting in significant effects at a local level; and
 - Positive impacts of increased roosting and foraging resources to bats, resulting in significant effects at a local level.
- 6.2.4 With reference to the Generic Significance Criteria the negative and positive effects on all the IEFs apart from ancient woodland (LEPO) and inundation vegetation are categorised as substantial, as they affect IEFs of national and international importance. The positive and negative effects on ancient woodland (LEPO) are categorised as major, as they affect an IEF of county importance. The negative effects on inundation vegetation are categorised as moderate, as they affect an IEF of local importance.
- 6.2.5 Cumulative impacts could occur during the construction phase if it is simultaneous with the construction of the replacement building and infrastructure for Sweeney's Cruises. There may also be cumulative impacts once both developments, and the Woodbank Inn Hotel Extension,

are in operation. If not properly managed this could lead to increased disturbance of species within the Loch Lomond Woods SAC and Loch Lomond SPA.

6.3 Traffic and Transport

- 6.3.1 An assessment of the likely significant effects on traffic and transport from the proposed development is provided in **Volume 1, Chapter 7** of the **ES**.
- 6.3.2 The Study was informed by a desktop study and a site visit and traffic data was also collected. The following sources were used:
- Scottish Planning Policy (SPP);
 - A Catalyst for Change - The Regional Transport Strategy for the West of Scotland 2008-2021, Strathclyde Partnership for Transport (SPT);
 - Loch Lomond & the Trossachs National Park (LLTNP) – Local Development Plan, 2017-2021;
 - West Dunbartonshire Local Transport Strategy, 2013 – 2018;
 - Designing Streets, Scottish Government, 2010;
 - Cycling by Design, Transport Scotland, 2010;
 - Transport Assessment Guidance 2012;
 - SCOTS National Roads Development Guide 2014 – produced by the Society for Chief Officers of Transport in Scotland, supported by Transport Scotland and Scottish Government Planning and Architecture Division. This document supports Designing Streets and expands on its principles to clarify the circumstances in which it can be used;
 - www.crashmap.co.uk;
 - TRICS V7.4.4 trip generation database;
 - ARCADY Roundabout junction analysis software;
 - PICADY Priority junction analysis software; and
 - STEP Scottish Trip End User Programme software application.
- 6.3.3 A desk top study was undertaken to inform the policy review of the TA, as well as gathering supporting information on existing public transport services and timetables for bus and rail services adjacent to the development site.
- 6.3.4 Fieldwork was undertaken in the form of site visits by walking, cycling and private vehicles of the development site and surrounding local area. Traffic data was also collected to inform baseline traffic flows.
- 6.3.5 As a result of the proposed development and design measures, the effects of the development on the surrounding local and strategic road network, are not anticipated to result in substantial adverse effects. The embedded and operational mitigation is anticipated to greatly expand and enhance the walking, cycling and public transport environment within the immediate site and within the wider Balloch village. This is anticipated to materially change the local “road focussed culture in the area, in conjunction with the WDC Balloch Village, Station Square and Road/streetscape proposals, which will see an uptake in the use of sustainable modes of travel within the local area more generally.
- 6.3.6 All construction traffic to and from the site will be controlled by a routing agreement which will ensure the correct road hierarchy is used and will prevent the use of residential roads by such vehicles, therefore resulting in a temporary slight adverse impact on road users, pedestrians and cyclists during this phase.
- 6.3.7 There would be increases in traffic flows within the Loch Lomond Shores/ development site as a result of the development proposals, more noticeably on roads Old Luss Road (North), Ben Lomond Way, Balloch Road (South) and Pier Road, which constitute the main access roads and links into the site. The % increase in AADT flows as a result of development require to be put in context to the existing status quo, which lessens the overall impact to moderate on Balloch

Road (South), Old Luss Road (North) and Pier Road. Ben Lomond Way requires to be subject to monitoring during the construction and operational phases, to determine any future requirement for associated intervention or mitigation to reduce pedestrian and cyclist delay and fear and intimidation. Increases elsewhere will be less noticeable and generally confined to peak periods.

- 6.3.8 Junction capacity impact assessments undertaken in the TA indicate that remediation and mitigation are not required to improve the capacity at local or strategic road junctions. Moreover, increasing capacity is understood to lead to an eventual increase in vehicles, which should be avoided wherever practicable.
- 6.3.9 The provision of the improved public transport, pedestrian and cycle routes through the site and to the surrounding areas of Balloch will, in conjunction with site-specific initiatives as well as the implementation of a Travel Plan and other ongoing Parking and Access Management strategies, potentially lead to an overall **increase in the uptake and propensity of use for sustainable modes to the moderate benefit of all road users.**

6.4 Noise

- 6.4.1 An assessment of the likely significant effects on sensitive receptors as a result of road traffic noise from the proposed development is provided in Volume 1, Chapter 8 of the ES. The impact of road traffic noise on both existing and proposed residential receptors has been assessed against noise criteria agreed with West Dunbartonshire Council (WBC).
- 6.4.2 The methodology provided in Technical Advice Note (TAN) 1/2011 'Assessment of Noise' (The Scottish Government, 2011b)² has been used to assess the suitability of the local noise environment for a residential development. Further to this, 3D computer noise modelling using CadnaA software has been carried out and validated against measured on-site road traffic noise data. The modelling considered current year (2017), and year of development completion (2020) scenarios.
- 6.4.3 The TAN 2011 assessment of the day and night-time noise impact of the future (2020) development generated road traffic at existing noise sensitive receptors within the surrounding areas has been carried out (through comparison between with vs without development scenarios). The amount by which day and night-time road traffic noise levels are predicted to increase varies between 0.1dB(A) and 2.2dB(A), the TAN 2011 level of significance of which is Slight. The greatest increase in road traffic noise is predicted to occur at properties located at Old Luss Road, Ben Lomond Way and Balloch Road. This is due to the largest percentage increase in road traffic as a result of the proposed development occurring around these areas.
- 6.4.4 Further to the above, a TAN 2011 assessment of the day and night-time noise impact from road traffic at proposed future noise sensitive receptors, for the year of development completion scenario (2020) has been carried out. This assessment includes the use of design mitigation. Daytime external noise levels are predicted to meet the agreed noise target of 55dB(A) at all but seven properties. Noise exceeds the target noise criteria at these properties by up to 2.9dB(A). The TAN 2011 level of significance of the exceedances is Slight. The daytime external garden/terrace noise, when incorporating the site design mitigation features, has been found to be within acceptable limits and does not need to be reduced further.
- 6.4.5 Similarly, A TAN 2011 assessment of night-time external noise at proposed future noise sensitive receptors has been carried out, for the year of development completion scenario (2020). At one of the most exposed properties, the TAN 2011 level of significance of the night-time noise is predicted to exceed *Slight*, therefore internal noise levels have been calculated.
- 6.4.6 At all locations throughout the proposed development internal noise levels are predicted to meet the target noise criteria of 30dB(A) with closed windows.
- 6.4.7 The Noise Assessment has determined that the significance of **the proposed development is not significant/ minor i.e. the effects may be raised as local issues but are unlikely to be of importance in the decision-making process.**

² Technical Advice Note (TAN) 1/2011 'Assessment of Noise'. Available at:
<http://www.gov.scot/Resource/Doc/343341/0114220.pdf> Accessed: 1804/2018

6.5 Air Quality

- 6.5.1 An assessment of the likely significant effects on local air quality from the proposed development and the potential for the proposed development to adversely affect local air quality is provided in **Volume 1, Chapter 9** of the **ES**.
- 6.5.2 The primary long-term concern in relation to air quality is the emissions generated by traffic and the subsequent impact on the local ambient air quality at residential areas located within the vicinity of the main road network. The main pollutant concentrations of concern from this source are Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀ and PM_{2.5}). As such, the air quality assessment was undertaken using an ADMS-Roads air quality model to investigate if there was potential for traffic emissions to impact future residents on site as well as existing residents in the vicinity of the site.
- 6.5.3 The model predicts no significant change in NO₂, PM₁₀ or PM_{2.5} at all receptors on comparison of the 'with' and 'without' development scenarios, with the impact magnitude for all sensitive receptors categorised as Negligible.
- 6.5.4 The overall impact of the proposed development on air quality in the study area can therefore be concluded as **not significant**.

6.6 Water, Hydrology and Flood Risk

- 6.6.1 An assessment of the likely significant effects upon the water environment which includes surface water and fluvial hydrology (including flooding), water quality, drainage, groundwater, water supplies and wetlands from the proposed development is provided in **Volume 1, Chapter 10** of the **ES**.
- 6.6.2 There are four watercourses which have been identified as flowing through the site. The major watercourse is the River Leven which flows to the east of the site. To the west of the site there are two smaller unnamed watercourses, and the fourth watercourse is marked upon Ordnance Survey mapping as being within the wooded area at Woodbank House.
- 6.6.3 A flood study of the River Leven was first undertaken in 2001 and then updated in 2003. This assessed the flood risk along the length of the River Leven, from Loch Lomond through to Dumbarton in the south. In 2009 the hydraulic model was updated to include more recent hydrological analysis as well as calibration of the model using the December 2006 flood event. The Flood Risk Assessment (FRA) undertaken for this proposed development included additional hydrological analyses to verify the flow rates and flood levels output from the original flood study, and to provide a level of confidence in the results. This is presented in **Volume 2** of the **ES, Appendix 11.2 - Flood Risk Assessment**.
- 6.6.4 The FRA concluded that the areas in the northeast of the site adjacent to the head of the River Leven and Loch Lomond would be at risk of fluvial flooding during the 0.5% Annual Exceedance Probability (AEP) event, and the area surrounding the existing tourist information centre is located immediately adjacent to the 0.5% AEP flood extents.
- 6.6.5 Information supplied by SEPA and West Dunbartonshire Council confirmed that there are no private water supplies or CAR licensed abstractions within the site.
- 6.6.6 SEPA confirmed that there are no abstractions from the River Leven, and no groundwater abstractions within 1km.
- 6.6.1 A small area of marshy grassland in the south of the Woodbank House area of the site has been listed as a wetland type classed under the Functional Wetland Typology for Scotland as 2A Marshy Grassland. This habitat is also a potential Groundwater Dependent Terrestrial Ecosystems (GWDTEs). Based upon the topographic setting and hydrogeological information presented in **Chapter 10**, it is considered that this area would have Moderate dependency on groundwater.
- 6.6.2 A suite of embedded and further mitigation has been proposed to avoid, prevent and minimise likely significant effects on the water environment. These are summarised in **Section 7** of this NTS. With the mitigation measures in place, the assessment concluded that **the proposed development would not generate any significant effects upon the water environment**.

6.7 Ground Conditions and Geology

- 6.7.1 An assessment of the likely environmental effects from the construction and operation of the proposed development in relation to the ground conditions, including land stability and geological hazards has been undertaken. The full Chapter is provided in **Volume 1, Chapter 11** of the **ES**.
- 6.7.2 In terms of baseline conditions, Woodbank House is currently occupied by fields used for grazing, vegetated with woodland and various ruined buildings formerly associated with a hotel and West Riverside is occupied by woodland and walking paths and two INEOS oil pipelines run through the site from west to east.
- 6.7.3 The assessment of the ground conditions at the site has been undertaken by following a tiered approach as recommended within the industry guidance (namely the Model Procedures for the Management of Contaminated Land, CLR11³).
- 6.7.4 A recent preliminary ground investigation has identified ground conditions across the undeveloped areas site which comprise natural drift deposits with alluvium (soft, sandy, clayey peat) primarily to the east of Pier Road, glaciofluvial deposits (sands and gravels with silt and clay) and till (gravelly sandy clay), and Made ground of > 1m thick, almost entirely restricted to the eastern part of the site where former railway lines ran. Soils containing elevated contaminants were primarily restricted to the area to the east of Pier Road and to the North of Ben Lomond Way. The primary contaminant of concern was lead however, elevated arsenic and hexavalent chromium were also encountered.
- 6.7.5 Ground gas monitoring indicates that the area east of Pier Road and north of Ben Lomond Way will be classified as CS2 as a result of concentrations of carbon dioxide and methane in exceedance of trigger values. The design of buildings in these areas may therefore require the inclusion of gas protection measures. The results for the remainder of the site indicate that it would be classified as CS1 and no gas protection measures will be required.
- 6.7.6 The results of the analysis of groundwater samples have confirmed the presence of slightly elevated concentrations of heavy metals in some of the boreholes. The concentrations encountered are considered unlikely to have significant negative impact on the sensitive receptors (Loch Lomond and River Leven), however, a further round of borehole sampling and the collection of surface water samples with testing is recommended at a later stage to strengthen this conclusion.
- 6.7.7 It is anticipated that a more detailed assessment of the potential risks posed by contaminants will be undertaken after any PPIp is granted for the proposed development, in order to inform its detailed design and specific mitigation measures secured through the approval of matters specified in conditions (AMC).
- 6.7.8 The conclusions of this assessment are that the construction and operation of the proposed development would result in a likely significant effects in respect of site workers (human health) during the construction phase of the development. However, this effect is localised, and will be mitigated through site specific Risk Assessment and Method Statements together with a 'procedure and watching brief' for any unexpected conditions that should be encountered during groundworks.
- 6.7.9 Taking account of all proposed embedded and further mitigation measures (see a summary of this in **Section 7**), **no likely significant residual effects are predicted on ground conditions from the proposed development.**

6.8 Landscape and Visual

- 6.8.1 An assessment of the likely significant effects on landscape, views and visual amenity from the proposed development is provided in **Volume 1, Chapter 12** of the **ES**.
- 6.8.2 A 5km radius Study Area from the site was used for the assessment however it was agreed with the National Park Authority that one viewpoint would be included from high ground outside of

³ <http://webarchive.nationalarchives.gov.uk/20140328160926/http://cdn.environment-agency.gov.uk/scho0804bibr-e-e.pdf> (Accessed: 20/04/2018)

- the Study Area (approximately 7km from the site boundary) to demonstrate that the effect on views from distant high ground would not be significant.
- 6.8.3 At the request of the Landscape Officer of the LLTTNP a key consideration of this assessment was the need to understand how the Special Landscape Qualities (SLQ) of the LLTTNP ('the Park'), are experienced and how they may be affected by the proposed development.
- 6.8.4 Three Zones of Theoretical Visibility (ZTV) were prepared for the proposed development in identifying visual receptors:
- A ZTV based on apart-hotel, waterpark and visitor centre at the loch shore – Zone C (see **Volume 2 - Figure 12.3a** in **Appendix 12.1 - Figures**);
 - A ZTV based on the 'Station Square' development - Zone A (see **Volume 2 - Figure 12.3b** in **Appendix 12.1 - Figures**); and
 - A ZTV based on the proposed residential development at Woodbank House - Zone E (see **Volume 2 - Figure 12.3c** in **Appendix 12.1 - Figures**)
- 6.8.5 A ZTV has not been produced for the proposed woodland lodges and other structures within Drumkinnon Woods (relating to Zone B: Riverfront and Zone D: Drumkinnon Wood on the Parameters Plan), as these developments will be substantially screened from visual receptors in the wider Study Area and would therefore not give rise to significant visual effects.
- 6.8.1 Overall, the landscape value⁴ within the Study Area is deemed through the assessment to be very high but this is locally reduced to high, around the southern end of Loch Lomond where the built development, infrastructure and proximity to Balloch means that the landscape does not have the highly scenic, rugged and wild qualities of the park experienced further north.
- 6.8.2 Similarly, whilst the sensitivity of the whole LLTTNP to the proposed development is considered very high, the sensitivity of the landscape around the southern end of Loch Lomond is considered medium as the landscape is already affected by a similar scale development (Loch Lomond Shores), by road infrastructure and by housing at Balloch.
- 6.8.3 In relation to this it is noted that the Loch Lomond National Scenic Area (NSA) actually excludes the southern end of Loch Lomond around the development site.
- 6.8.4 Drumkinnon Woods appears well used by local residents and although classed as ancient woodland it visually appears to be in relatively poor condition. It is noted that the site is allocated for development for visitor experience related uses within the adopted Loch Lomond and the Trossachs LDP (2016).
- 6.8.5 In summary, it is considered that due to the site's location on the boundary of the park and in an area already impacted by development, coupled with its lack of perceptibility, the proposed development would only cause Negligible long term landscape and visual effects on the assessed Study Area and the LLTTNP, its Special Landscape Qualities and users.

6.9 Archaeology and Heritage

- 6.9.1 An assessment of the likely significant effects on archaeology and heritage from the proposed development is provided in **Volume 1 – Chapter 13**. The assessment explores the effect of the proposed development upon the setting and physical fabric of cultural heritage assets within the site boundary and likely effects on the settings of certain assets within the wider landscape.
- 6.9.2 Within the site, the Category A-listed building Woodbank House and garden buildings was assessed for potential effects. Beyond the Site boundary, three designated heritage assets were assessed for setting effects. These were Drumkinnon Pier, winch house and slipway (Category A-listed building), Balloch Castle (Inventory Garden and Designed Landscape), and Balloch Castle, earthwork (Scheduled Monument).
- 6.9.3 Potential changes to views from and towards the identified designated heritage assets have been considered and illustrated with visualisations. Setting effects were also assessed following

⁴ Value in this instance means demonstrable features that elevate it above the ordinary.

visits to each heritage asset. Mitigation and enhancement measures have been proposed to minimise the potential impacts of the proposed development upon each heritage asset.

- 6.9.4 The site is considered to be of medium archaeological potential. Potential impacts upon unknown archaeological deposits will be addressed through a staged programme of archaeological works, recommended by WoSAS and to be undertaken as a post-determination planning condition. On this basis, potential impacts upon archaeological deposits were not assessed.
- 6.9.5 Taking the account of the implementation of mitigation and enhancement measures (see **Section 7**), no likely setting effects on the historic environment would result from the proposed development which would be considered significant in the context of the EIA Regulations.

6.10 Socio-Economics, Tourism, Recreation and Public Access

- 6.10.1 An assessment of the likely significant effects on socio-economics, tourism, recreation and public access from the proposed development is provided in **Volume 1, Chapter 14** of the **ES**. This Chapter has been split into a socio-economic assessment and a tourism, recreation and access assessment.

Socio-economic

- 6.10.2 The study areas for the socio-economic assessment is based on those settlements closest to the proposed development, limited by a 15-minute drive time catchment. The 'wider area' is defined to be within a 30-minute drive time, and the 'wider region' within a 45-minute drive time (see **Volume 2, Appendix 14.1, Figure 14.2**).
- 6.10.3 An extensive desk based review of publicly available information sources was undertaken to establish baseline conditions of the Local Study Area and the Wider Study Area. The following socio-economic indicators have been considered:
- Current and Future demographic characteristics including population and age structure;
 - Labour market indicators including economic activity, employment and qualifications.
- 6.10.4 The principal socio-economic assessment criteria relate to employment effects within the study area. These are defined in terms of Full-Time Equivalent (FTE) jobs and the Gross Value Added (GVA) generated by those jobs
- 6.10.5 The socio-economic assessment shows that the proposed development overall will have a minor beneficial socio-economic impact through temporary construction employment and indirect employment supported through supply chain linkages in the wider economy and also job creation during the operation of the development.
- 6.10.6 **The proposed development would not result in any significant socio-economic effects.**

Tourism, Recreation and Access

- 6.10.7 The study area for the tourism, recreation and access assessment is defined by a 5km radius from the Site (**Volume 2, Appendix 14.1, Figure 14.2**). Facilities or notable points of focus for visitor attraction and recreation within this area have been reviewed.
- 6.10.8 A desk-based analysis has been carried out to determine key factors which impact upon tourism trends and the key drivers influencing the market. Factors such as domestic and overseas visitor patterns and trends, occupancy rates and popular visitor attractions are analysed.
- 6.10.9 A desk-based audit has been prepared to determine the scale of tourism and recreational activity and related facilities in the study area. The assessment covers key aspects including: tourism and recreation facilities; and those facilities and features which act as a focus or attraction for visitors, and lead to expenditure by visitors.
- 6.10.10 The following facilities and attractions have been identified in the study area:
- Visitor attractions – including cultural facilities, recreation and leisure facilities;
 - Visitor activities – including walking, fishing, country pursuits, wildlife interests and sports; and

- Visitor and tourist routes – including cycling, walking and rights of way.

6.10.11 The tourism, recreation and access assessment shows that the vast majority of receptors will experience no significant effects. The John Muir Way, The Three Lochs Way and Loch Lomond Shores have the potential to experience localised significant adverse effects. This is due to the proximity of these receptors to the proposed development and limited opportunities to mitigate the changes in view. **It is unlikely that the presence of the proposed development would result in a change in visitor numbers to these receptors to such an extent that would result in an adverse effect in the long term.**

6.11 Impact Interactions

6.11.1 The technical assessments summarised above conclude that proposed construction activities and the subsequent operation of the proposed development could result in a number of adverse, albeit not significant, environmental effects (both individually from the proposed development and cumulatively with effects from cumulative developments). The interaction of these effects could generate overarching health and amenity effects, which are considered in turn below.

6.11.2 The full assessment of the likely significant effects of impact interactions from the proposed development is provided in **Volume 1, Chapter 15** of the **ES**.

Health Risks and Effects

6.11.3 In the context of the proposed development, health risks and effects on human health have the potential to arise from:

- Direct effects relating to pollution and the quality of the environment (e.g. from noise and air quality emissions, including dust effects). These types of effects are primarily predicted to occur during the construction phase, although operational effects are also predicted from road traffic impacts; and,
- Indirect effects relating to the quality of the built environment and the provision, accessibility and green infrastructure.

6.11.4 The technical assessments conclude that no residual significant adverse environmental effects will occur from the proposed development with only localised effects occurring. In addition, predicted emissions (noise and air pollutants) will remain within legally accepted limits.

6.11.5 Taking account of proposed mitigation and enhancement measures (see **Section 7**), the proposed development will result in residual minor and not significant beneficial effects on health risks and effects.

Amenity and Visual Effects

6.11.6 It is considered that due to the site's location on the boundary of the LLTTNP and by being in an area already impacted by development, coupled with its lack of perceptibility, the proposed development would only cause Negligible long term landscape and visual effects on the assessed Study Area and the LLTTNP, its Special Landscape Qualities and users.

6.11.7 The John Muir Way, The Three Lochs Way and Loch Lomond Shores have the potential to experience localised significant adverse effects. This is due to the proximity of these receptors to the proposed development and limited opportunities to mitigate the changes in view. It is unlikely that the presence of the proposed development would result in a change in visitor numbers to these receptors to such an extent that would result in an adverse effect in the long term.

6.11.8 the construction and operational phases of the proposed development are predicted to result in a number of effects on the physical environment. These have the potential to affect the same receptors (such as dwellings adjacent to the site) and, depending on the phasing of construction activities, could occur simultaneously. This has the potential to generate combined effects on quality of life and residential amenity.

- 6.11.9 However, a key role of the proposed CEMP will be to co-ordinate construction activities and mitigation measures to minimise all potential effects on both environmental and amenity receptors.
- 6.11.10 Taking account of proposed mitigation and enhancement measures (see **Section 7**), the proposed development will result in residual minor and not significant beneficial effects on amenity and visual effects.

7 Mitigation and Monitoring Requirements

7.1 Introduction

- 7.1.1 This section of the NTS provides a summary of **Volume 1, Chapters 3.8 and 16** of the **ES**, which sets out a consolidated schedule of all mitigation and enhancement measures proposed to avoid significant adverse effects and enhance beneficial effects from the proposed development.

Embedded Mitigation

- 7.1.2 In line with EIA best practice, the iterative EIA, planning and design processes for the proposed development have been undertaken in tandem, with close dialogue maintained between the Applicant, EIA project team, project architect and other advisers. This has allowed an overarching suite of mitigation measures and commitments to be incorporated into the proposed development from the outset, in order to both address potentially adverse effects and enhance its environmental performance. These are termed embedded mitigation measures.
- 7.1.3 The embedded mitigation measures incorporated within the proposed development are as follows:

Construction Phase

■ CEMP:

- Development and implementation of measures relating to: construction traffic routing, site access/deliveries, parking, contractor management, parking, fuels and materials storage, standard dust and noise suppression techniques and standard pollution presentation and control techniques. These measures will be set out within a Construction Environmental Management Plan (CEMP). Any other measures to be included in the CEMP would be identified as 'further mitigation' (not embedded) through the EIA.
- Any construction activities within a 5m strip along waterfronts will be subject to specific consideration within a CEMP to be agreed with the NPA prior to commencement.
- An Environmental Clerk of Works (ECow) will ensure that the CEMP and associated mitigation measures are implemented effectively;
- A pollution prevention and response plan will be set out in the CEMP. This will provide site spill response procedures, emergency contact details and equipment inventories and their location. All staff will be made aware of this document and its content during site induction. A copy will be available in the site office at all times.
- Adoption of standard construction industry working hours for noise generating activities
- A contaminated hotspots plan and procedure for managing unexpected contamination.
- Settlement tanks/beds should be utilised to prevent increased suspended solids entering Loch Lomond via surface water run-off during rainfall;
- A 3 m exclusion zone will be adopted around either side of INEOS gas pipelines within the site;
- Risk Assessments and Method Statements (RAMS) will be prepared. Construction/ground workers should take cognisance of the contamination reported and will be required to work in accordance with the RAMS. The provision of appropriate personal protective equipment (PPE) to be worn by site workers (as specified in RAMS);
- Informing site workers of the contamination on the site (i.e. the conclusions of the site investigation) and the potential health effects from exposure through site induction and toolbox talks;
- Dust suppression to minimise the effects on offsite users;

- If piled foundations are required, a site specific risk assessment designed specifically to assess the risks posed by piling should be carried out. Ultimately, if piled foundations are required, the technique used will be selected on the basis of protecting groundwater from contamination. Safe piling techniques should be adopted to minimise the risks posed by piling activities.
- All construction work will be undertaken in general accordance with SEPA's Guidance for Pollution Prevention (GPPs).
- **Landscape:**
 - 12m buffer (i.e. no construction) around the site boundary with Drumkinnon Gate;
 - Any construction activities within a 5m strip along waterfronts will be subject to specific consideration within a Construction Environmental Management Plan (CEMP) to be agreed with LLTNPA prior to commencement;
 - Adherence to relevant (Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH) and Historic Environment Scotland (HES) regulatory and good practice guidance in construction methods;
 - Adoption of standard construction industry working hours for noise generating activities;
 - Safeguarding of identified important trees from disturbance or loss;
 - Work with existing topography to minimise ground level regrading where possible;
 - Proposed utilities to be located underneath existing path network to minimise disturbance to existing tree roots;
 - Access to all key nodes and routes through the site are to be maintained during the construction phase. Localised diversions to facilitate construction may occur on land within the applicant's control. Any impacts on walking/cycle routes during the construction phase will be short term and localised diversions will be put in place;
 - Continued provision of access through the site to existing receptors and land uses as identified in Chapter 2 Site and Surrounding Area.
- **Heritage:**
 - Commitment to undertake a programme of archaeological works, as requested by WoSAS, prior to the construction of the proposed development;
 - Adherence to relevant HES regulatory and good practice guidance in construction methods;
 - Retention of Woodbank House listed building façade as a landmark feature; and,
 - Conversion of other listed buildings within the Woodbank area of the site where practicable and viable.
- **Socio-economics, Tourism, Recreation and Access:**
 - Access to all key nodes and routes through the site are to be maintained during the construction phase. Localised diversions to facilitate construction may occur on land within the applicant's control. Any impacts on walking/cycle routes during the construction phase will be short term and localised diversions will be put in place; and
 - Continued provision of access through the site to existing receptors and land uses as identified in **Error! Reference source not found.** in Chapter 2 (Site & Surrounding Area).
 - Access to tourist information facility will be maintained whilst building refurbishment takes place.
- **Pipeline:**
 - No ground development within 3m stand-off zone each side of INEOS pipelines, unless agreed with INEOS;

- Minimisation of any piling (if required) within 25m zone each side of INEOS pipelines, with construction techniques to be agreed through consultation with INEOS if required; and
- On-site supervision by/on behalf of INEOS of construction work within 25m zone each side of INEOS pipelines.

■ **Ground Conditions**

- Additional intrusive investigation to delineate contamination and for a remediation strategy;
- Further intrusive investigation will be undertaken as required prior to construction within and around the derelict buildings in the Woodbank House site to determine the potential for contaminants of concern including asbestos and PAHs. If elevated concentration is identified, remediation will be undertaken to remove the contaminated material or lower the concentration of contaminants to a suitable level (i.e. below GAC).
- Remediation strategy which may include localised excavation of contaminated material and replacement with clean fill/capping material or hardstanding.
- Gas protection measures (if required) will be incorporated into the design of the proposed development to protect the building structures and human health (future end users).
- Risk Assessments and Method Statements (RAMS) will be prepared. Construction/ground workers should take cognisance of the contamination reported and will be required to work in accordance with the RAMS.

■ **Noise**

- The design mitigation features incorporated into the final masterplan design is of one stretch of 2m high close boarded timber garden fencing at the garden /terrace boundary of NSR 19.

■ **Ecology:**

- Safeguarding of identified important trees, including their root systems, from disturbance or loss.
- Erection of forest lodges on elevated support structures where required to minimise the need for the development of building foundations within woodland areas;
- Siting and design of forest lodges to be informed by detailed tree surveys of the site, to be undertaken in accordance with relevant British Standards. This siting and design process should:
 - Maintain the integrity of the existing forest habitat network;
 - Target existing open areas where possible by using the completed survey to locate existing glades;
 - Ensure the retention of desirable, native species trees is achieved by maximising the use of glades for lodge positions and by targeting specific survey of trees which surround the chosen areas (to be identified through aforementioned surveys);
 - Use baseline habitat and future targeted tree survey to mitigate any predicted tree loss and disturbance impacts; and,
 - Target opportunities to remove invasive species through construction activities;
- Commitment to the provision of appropriate compensatory planting to offset the loss of trees in building footprint and working areas within existing woodland (the details of which are considered below and treated as further mitigation and enhancement).
- Manage extents of invasive species such as rosebay willowherb, Japanese knotweed and bamboo in particular on the Woodbank site.

- Development of path and minor route networks using low impact technology to protect tree roots, soils and surrounding vegetation.
- Manage existing woodland to improve its age profile, encourage continued biodiversity and preserve its presence in the landscape;
- Boost ecology and ground flora within woodland by thinning out trees, consequently allowing more sunlight to reach the woodland floor. Management of none native species;
- A speed limit of 10mph would be applied to all construction traffic to reduce the risk and frequency of potential collisions
- Boundary features and fences would be designed to allow roe deer and badgers to move freely where appropriate;

■ **Hydrology:**

- No buildings within the functional floodplain and finished floor levels of buildings adjacent to the water bodies to be above the 1 in 200yr + climate change peak flood level;
- Avoid crossings of existing watercourse to prevent pollution;
- Development within a 5m strip along waterfronts will be subject to specific consideration with a CEMP;
- The surface water drainage scheme for the proposed development will be designed in accordance with Sustainable Drainage Systems (SuDS) principles and such that the maximum discharge rate will be equivalent to the greenfield (i.e. pre-development) runoff rate.

Operational Phase

■ **Landscape:**

- 12m buffer (i.e. no operational activities) around the site boundary with Drumkinnon Gate;
- Screening increased around the boundary between woodland and residential area where existing screening is limited, using evergreen native shrubs which are in-keeping with the surroundings, ensuring a decrease impact for the residents;
- Lower density of lodges to be located within the 'Plantation origin' of Drumkinnon woodland;
- Existing fenced substations and unsightly utilities to be screened and incorporated within the woodland setting;
- Proposed car parking to be sensitively incorporated into the woodland. Surface materials to be in keeping with the location and context. Additional mitigation measures such as buffer planting to provide natural screening to new car parking;
- Retain and upgrade existing pathways, enhance with new porous surfacing. Widen and locally regrade to allow for buggies, cycles and emergency access;
- New woodland planting to be created on the Woodbank plot, immersing proposed residential plots in order to reduce and mitigate any visual impact. Whilst acknowledging the need to retain the open views towards the facade of Woodbank House;
- Retention of Woodbank House listed building facade as a landmark feature;
- Continued public access to Drumkinnon Bay waterfront;
- Continued provision of access through the site to existing receptors and land uses as identified in Chapter 2: Site and Surrounding Area;
- Safeguarding of identified important trees within existing woodland areas, as identified on the Figure 3.1 - Parameters Plan in Appendix 3.1;

- No structures or buildings within woodland areas to exceed the height of the tree canopy;
- Integration of Station Square zone with Balloch Street Design Project proposals and Sweeney Cruises;
- Elevated sections of monorail to have sufficient clearance above roads and paths to allow for passage underneath; and
- Access to all key nodes and routes will be maintained during operation with the quality of some routes enhanced. Some permanent localised diversions may be required; however, this will be limited to using other land within the applicants control in order to avoid lengthy or circuitous alterations.
- **Heritage:**
 - Retention of Woodbank House listed building facade as landmark feature.
- **Monorail:**
 - Elevated sections of monorail to have sufficient clearance above roads and paths to allow for passage underneath.
- **Socio-economics, Tourism, Recreation and Access:**
 - Employment of locally resident workers and delivery of training (e.g. apprenticeships) where possible.
 - Access to all key nodes and routes will be maintained during operation with the quality of some routes enhanced. Some permanent localised diversion may be required however this will again be limited to using other land within the applicant control in order to avoid lengthy or circuitous alterations;
 - Continued public access to Drumkinnon Bay waterfront and public beach areas at Balloch Pierhead;
 - Development and implementation of Travel Plan (to encourage sustainable travel to/from site by visitors and workers); and
 - Continued provision of access through the site to existing receptors and land uses as identified in **Error! Reference source not found.** in Chapter 2 (Site & Surrounding Area).
 - Elevated sections of monorail to have sufficient clearance above roads and paths to allow for passage underneath.
- **Pipeline:**
 - No ground development within 3m stand-off zone each side of INEOS pipelines, unless agreed with INEOS.
- **Ecology**
 - Commitment to implement a woodland management plan to enhance the quality and composition of existing woodland within the site, particularly of the ancient woodland and those presenting semi-natural characteristics. The details of this plan will be informed by the EIA and relevant design considerations.
 - Ongoing management of existing and newly created woodland to improve its age profile, encourage continued biodiversity and preserve its presence in the landscape;
 - Ongoing management and survey of invasive species such as Rosebay Willow herb, Japanese Knotweed and Bamboo in particular on the Woodbank site;
- **Hydrology:**
 - The proposed surface water and SuDS scheme (see Section 11.6) will require regular maintenance during its operational life. This maintenance will include the regular debris clearing and cutting of grass of surface SuDS features, and the inspection and repairs to underground features if necessary. The responsibility for the maintenance of the drainage network will lie with the organisation that adopts the network

■ **Traffic & Transport**

- It is intended that the proposed development will be fully accessible by sustainable modes of transport. The existing pedestrian and cycle network as it exists through the West Riverside site will be retained and enhanced as necessary to provide full connectivity to the wider network as well as all new internal elements of the site. The site will benefit from increased uptake of sustainable modes over the use of the private car, and it is anticipated that walking and cycling will be the go-to-mode of choice for those visitors using the woodland lodges and overnight accommodation: by leaving their cars remote from the lodges, it is hoped this will reduce any unnecessary internal car trips;
- Bike hire is proposed as part of the Station Square and enhanced Tourist Information Office offering, which will further support internal movements by bike;
- Whilst the internal layout requires to be developed further as part of subsequent detailed design stages, it is intended that the existing cycle and walking routes will be widened to Sustrans standards for shared walking and cycling routes, where this is practicable to do so;
- Throughout the Station Square, Riverfront and Drumkinnon areas, the existing path network including the John Muir Way will be retained and enhanced as appropriate, albeit some relocating of certain sections may be required. It is expected that discussions will be held with Sustrans when the detail of these routes is considered. The existing north-south foot and cycle paths through the Riverfront Zone, will be enhanced with a series of east-west paths increasing access opportunities between Pier Road and the Riverfront area;
- The existing foot and cycle way from Loch Lomond Shores to Old Luss Road will be extended to provide a shared foot and cycle way, compliant with technical standards, on the north (development) side of the road, providing a direct walking and cycling link between the two sites;
- From the Woodbank House site, which is intended to be configured in accordance with Designing Streets Principles and will provide a continuous internal path network, a direct foot and cycle link will be provided to the Upper Stoneyhall Road/ John Muir Way; and
- A signage and wayfinding strategy will be developed for the wider site, once clarification on the preferred parking locations for site-based activities and land uses are confirmed. It is expected that a combination of enhanced signage and Variable Message Signing (VMS) will need to be installed at key approaches to the site from both the strategic and local road network, as well as internally within the site, to ensure effective vehicular movement for internal destinations and appropriate directions to the relevant car parking areas.

■ **Cumulative Development:**

- Integration of the proposed development, in particular the proposed Station Square zone, with Balloch Street Design Project proposals

7.1.4 The embedded mitigation measures of relevance to each technical assessment are listed in **Subsection 6 – Embedded Mitigation** and have been taken account of within the assessments presented in **subsection 7 – Potential Effects** of chapters 6 - 15

7.1.5 The Further Mitigation and Enhancement measures are identified in summary form within **Table 7.1** below.

7.2 Proposed Mitigation and Enhancement Measures

Table 7.1 Summary of Proposed Mitigation and Enhancement Measures

ES Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
Chapter 6 – Ecology and Woodland	Construction Phase
	<ul style="list-style-type: none"> Appointment of Environmental/Ecological Clerk of Works (ECoW) team to monitor compliance, produce auditable records and provide onsite advice (different environmental constraints may require ECoWs of differing specialisms).
	<ul style="list-style-type: none"> Pre-construction and regular protected species surveys.
	<ul style="list-style-type: none"> Provision of information regarding ecological sensitivities as part of site induction.
	<ul style="list-style-type: none"> Seasonal working checks and restrictions: where vegetation (including woodland, grassland, hedgerow, scrub and trees) clearance is to be undertaken in March to August inclusive, a pre-works nesting bird check would be carried out by a suitably qualified ecologist. If nesting birds are found an appropriate works exclusion area would be put in place to protect the nest until the young have fledged.
	<ul style="list-style-type: none"> Implementation of 10mph speed limit for all site traffic.
	<ul style="list-style-type: none"> Safeguarding of protected species: In the event that a protected species is discovered on site, the contractor will be expected to comply with relevant legislation and guidance. Where necessary all work in that area would stop immediately and the site ECoW contacted.
	<ul style="list-style-type: none"> Site compounds/material and plant storage areas to be located as far as possible from watercourses.
	<ul style="list-style-type: none"> Commitment to site and design working areas and building footprints (at detailed design stage) with the objectives of minimizing habitat disturbance/loss and safeguarding important ecological features (IEF).
	<ul style="list-style-type: none"> Undertaking an early flowering plants survey prior to the detailed design of the proposed development.

ES Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<ul style="list-style-type: none"> Any trenches or pits made during construction (for example that may be present to lay infrastructure) to be covered at the end of each working day or a wooden plank placed inside to allow any mammal species to escape, should it fall in. Any temporarily exposed open pipe system to be capped in such a way as to prevent wildlife gaining access.
	<ul style="list-style-type: none"> Use of geoweb to protect adjacent tree rooting systems from development within woodland.
	<ul style="list-style-type: none"> Porous gravel or similar for proposed parking.
	<ul style="list-style-type: none"> Turf translocation if required.
	<ul style="list-style-type: none"> Tree survey to be undertaken of focused areas of the development to provide information on individual trees in relation to design and construction. This would inform the production of method statements for particular construction activities within woodland habitats.
	<ul style="list-style-type: none"> New planting to compensate for any tree loss within the development footprint shall comprise native species trees reflecting the desired semi-natural oak woodland of Drumkinnon and Woodbank woodland features; and the alder dominated riparian woodland of the River Leven. New planting shall also include a mix of appropriate understory trees and shrub species particular to these woodland types such as birch, hazel, rowan, holly and willow species.
	<p style="text-align: center;">Operational Phase</p>
	<ul style="list-style-type: none"> Commitment for street lighting and other lighting associated with the development to be designed (at detailed design stage) in consideration with habitat use by nocturnal species. Where possible lighting to be positioned upon or around the completed development so it would not illuminate surrounding woodland and watercourses.
	<ul style="list-style-type: none"> An appropriate speed limit (20mph or less) to be applied to all traffic.
	<ul style="list-style-type: none"> Visitor management facilities/entrance area to incorporate suitably sized and located waste and recycling receptacles, to be combined with appropriate collection and transportation regimes.
	<ul style="list-style-type: none"> Management of the riparian and shoreline habitats, including the removal of invasive plant species and encouraging appropriately vegetated banks comprising native woodland species, to enhance the composition of vegetated connectivity between woodland and watercourses.
	<ul style="list-style-type: none"> A selection of bat and bird boxes to be installed throughout woodland habitats at the site.

ES Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<ul style="list-style-type: none"> An infusion of native, berry producing, shrub species to be planted within existing woodlands and along connective linear vegetated features to enhance the foraging and sheltering resource for a variety of mammal and bird species which may frequent the site in the future.
	<ul style="list-style-type: none"> Integrated bat roost and bird nesting provisions to be installed into new structures on site to increase roosting provisions for these species.
	<ul style="list-style-type: none"> Annual vegetation and protected species surveys
Chapter 7 – Traffic and Transport	Construction Phase
	<ul style="list-style-type: none"> None required
	Operational Phase
	<p>An Outline Travel Plan</p> <ul style="list-style-type: none"> Contained within the Transport Assessment an Outline Travel Plan incorporates actions and incentives and an ongoing programme of delivering sustainable travel options for the proposed development site. This includes several potential measures which could be implemented to support sustainable travel choices for future employees, through both induction processes and provision of a travel information pack for new starts. This would also include the provision of a Residential Travel Information Pack for the residential component of the site, which will be issued at point of occupation.
	<p>Monorail</p> <ul style="list-style-type: none"> A monorail is incorporated in to the development proposals to provide better connectivity between Zone A (Station Square) and Zone C (Pierhead). This will provide better connectivity between Balloch Village and Loch Lomond Shores, through provision of a safe, direct and convenient means of transport. During the winter months/ dark nights the existing Pier Road and walking routes adjacent to the River Leven (Riverfront area) are not conducive to walking as function of reduced personal security, and the overall distance. As such, the monorail will help support an evening economy at the existing and with-development scenarios;
	<p>Public Transport</p> <ul style="list-style-type: none"> The proposed WDC plans for the Station Square enhancements on Balloch Road between the proposed new Station Square development (Zone A) and Balloch Railway Station, will help deliver enhanced access between the station and the proposed development site as well as the wider village of Balloch. It is also understood that revised

ES Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<p>parking arrangements are being considered for Balloch Rail Station as part of the wider “Balloch Village Parking Proposals” which are hoped to alleviate parking issues in the locality as well as encourage an uptake in rail usage;</p> <ul style="list-style-type: none"> • Discussions have been undertaken with ScotRail Abellio to seek to agree in principle the mutual benefits of promoting access to the development site by rail. Whilst any interventions are still in early developmental stages, these are presently anticipated to include: • Shared-ticketing: whereby rail and attraction-tickets can be purchased simultaneously, incorporating some form of discount for the passenger/ visitor; • The opportunity to promote the new West Riverside development as a destination, where branding/ wrapping the trains can be used as a marketing/ promotional incentive; and • The potential for further studies into the need for enhanced rail services either by frequency and/ or selective station stopping to improve journey times.
	<p style="text-align: center;">Remote Lodge Accommodation Parking</p> <ul style="list-style-type: none"> • For accommodation land uses, except for the Woodbank House site, the arrivals and parking for this element can be managed from the point of booking, whereby visitors can be advised of the intended arrival and check-in arrangements. The intention is that accommodation-based-visitors and associated parking will be segregated from other land-uses and that parking will be provided remotely from the accommodation. Small buggies will be used to transport visitors and baggage to their holiday accommodation. This will reduce both unnecessary vehicular circulation at arrival and departure times but is also expected to reduce the use of cars for short-trips by guests throughout their stay: it will be more convenient to walk, cycle or use the mono-rail for shorter local and site-internal trips.
Chapter 8 – Noise and Vibration	Construction Phase
	<ul style="list-style-type: none"> • As part of the masterplan design process EnviroCentre used CadnaA noise modelling software to inform the design of any mitigation measures if necessary for the year of development opening scenario (2020). The results were assessed in accordance with TAN 2011. Exceedances of the Council’s noise criteria were identified in one of the garden/terraces of the most exposed properties. • The level of significance of any TAN 2011 exceedance within the current masterplan is now slight. The design mitigation features incorporated into the final masterplan design is of one stretch of 2m high close boarded timber garden fencing at the garden /terrace boundary of NSR 19.

ES Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	Operational Phase
	<ul style="list-style-type: none"> Daytime external noise levels are predicted to meet West Dunbartonshire Council's noise target of 55dB(A) in the majority of properties. Noise exceeds the target noise criteria in some locations by up to 2.9dB(A). The TAN 2011 level of significance of the exceedances is Slight. In line with consultation carried out with West Dunbartonshire Council, the daytime external noise, when incorporating the site design mitigation features, has been found to be within acceptable limits and does not need to be reduced further.
Chapter 9 – Air Quality	Construction Phase
	<ul style="list-style-type: none"> Taking account of proposed embedded mitigation measures, the assessment provided in Section 9.7 predicts that no significant effects on air quality are considered likely. No further mitigation, compensation or enhancement measures are therefore required or proposed.
	Operational Phase
	<ul style="list-style-type: none"> Not Required
Chapter 10 – Water, Hydrology and Flood Risk	Construction Phase
	General Mitigation measures
	<ul style="list-style-type: none"> A CEMP will be in place during the construction phase and will detail surface water management, pollution prevention measures, and construction method statements. The CEMP will remain a live document throughout the construction phase and will be continually updated as work progresses. All mitigation measures will be incorporated into the CEMP. The CEMP will be submitted to the Council for approval prior to commencement of the construction works, in consultation with SEPA and other agencies such as SNH.
	<ul style="list-style-type: none"> The CEMP will include as a minimum measures relating to: construction traffic routing, site access/deliveries, parking, contractor management, parking, fuels and materials storage, standard dust and noise suppression techniques and standard pollution presentation and control techniques.
	<ul style="list-style-type: none"> Any construction activities within a 5m strip along waterfronts will be subject to specific consideration within the CEMP to be agreed with the National Park Authority (NPA) prior to commencement.

ES Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<ul style="list-style-type: none"> An Environmental Clerk of Works (ECoW) will ensure that the CEMP and associated mitigation measures are implemented effectively. Best practice will be adopted throughout the construction phase following current guidance listed in section Error! Reference source not found..
	<ul style="list-style-type: none"> A pollution prevention and response plan will be set out in the CEMP. This will provide site spill response procedures, emergency contact details and equipment inventories and their location. All staff will be made aware of this document and its content during site induction. A copy will be available in the site office at all times.
	<ul style="list-style-type: none"> All activities with potential to impact on the water environment require to be authorised under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR). The level of authorisation required is dependent on the anticipated environmental risk posed by the activity to be carried out. Liaison with SEPA operations team will be undertaken at an early stage to further confirm this. These activities could include construction drainage, dewatering, storage of oil and the three watercourse crossings.
	<ul style="list-style-type: none"> Revised levels of authorisation, including amendments to the General Binding Rules (GBR), came into effect on January 1st 2018. These include the need for CAR authorisation for drainage of construction sites over four hectares in size, as well as a change to the size of development that will require authorisation for the permanent surface water drainage. The below summarises the requirements of these regulations.
	<ul style="list-style-type: none"> For the construction SuDS associated with a site of this size, a complex CAR licence will be required, as detailed in the CAR Practical Guide (SEPA, 2018).
	<p>Surface Water Management</p>
	<ul style="list-style-type: none"> Surface water drainage arrangements for the construction phase will be in line with SuDS principles, incorporating appropriate treatment and attenuation prior to discharge to the water environment in accordance with the required CAR authorisation and relevant GBR. It is proposed to replicate natural drainage around construction areas and to use source control to deal with rainwater in proximity to where it hits the ground.
	<ul style="list-style-type: none"> The implementation of a given SuDS measure will be dependent upon detailed site and hydrological investigations. Detailed surface water drainage proposals and methodology for the construction phase will be detailed within a Pollution Prevention Plan (PPP) which will be included within the CEMP. The SuDS features will be installed prior to the main construction activities (including removal of vegetation and any earthworks). Suitable measures will be in place at all times for treatment of runoff from construction areas, to prevent the release of pollutants including sediment to adjacent surface water features and GWDTEs.

ES Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<ul style="list-style-type: none"> Clean runoff from vegetated areas or offsite will be kept clean and diverted around works to prevent mixing with silt-laden water.
	<ul style="list-style-type: none"> Surface water management measures employed during the construction phase should be regularly inspected and maintained to check that they are working effectively and that there are no blockages or unexpected discharges.
	<ul style="list-style-type: none"> The risk of oil contamination will be minimised by good site working practice (further described below) but should a higher risk of oil contamination be identified then an oil separator will be considered.
	<ul style="list-style-type: none"> A minimum buffer zone of 5m will be maintained along the waterfronts. No construction activities will take place within this buffer zone, including movement of construction machinery, stockpiling and construction of SuDS features, unless they have been specifically considered and permitted within a CEMP
	Earthworks
	<ul style="list-style-type: none"> Areas stripped of earth and vegetation will be kept to a minimum at any one time. Soil loss and erosion will be minimised through careful storage, reinstatement and re-vegetation. Stockpiles will be placed in areas of minimal risk of slippage or erosion from drainage and will not be located within 20m of any watercourses or ditches.
	<ul style="list-style-type: none"> Any runoff from earthworks and stockpiles will be passed through appropriate construction SuDS measures prior to discharge to the water environment.
	<ul style="list-style-type: none"> The time excavations are kept open for will be kept to a minimum to avoid ingress of water, minimise erosion and the need for dewatering. Drainage or pumping from excavations will be minimised through appropriate design. Temporary cut-off drains will be installed if required to prevent surface water runoff entering excavations.
	<ul style="list-style-type: none"> Any dewatering will comply with GBR2 and GBR5. If abstraction exceeds 10m³ per day a CAR registration or licence will be required, which will be obtained prior to the commencement of the abstraction. Any water pumped out of excavations will be treated by passing through a SuDS feature prior to discharge to the water environment.
	Construction tracks
	<ul style="list-style-type: none"> Access tracks used during construction (i.e. not the final road layout) will incorporate appropriate drainage measures including ditches, camber to shed water to the edges, frequent cross drains and trackside grips/offlets to prevent the tracks acting as a preferential drainage route and to protect the water environment. Any trackside discharge will be passed through appropriate construction SuDS measures prior to discharge to the water environment. Water will not be allowed or encouraged to pond in the track where possible.

ES Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	Oils, Fuels, Site Vehicles and Welfare facilities
	<ul style="list-style-type: none"> The mitigation measures to minimise risk of contaminant release will be in line with the updated Controlled Activities (Scotland) Regulations which will come into force on 1st January 2018. These new General Binding Rules (GBRs) consolidate the provisions of the Water Environment (Oil Storage)(Scotland) Regulations 2006 into CAR, and extend the application of those provisions. The relevant PPGs will also be used to guide the embedded mitigation. This includes the following: <ul style="list-style-type: none"> Storage of oil and fuels on site will be designed to be compliant with GBRs 26-28 and any bunds will provide storage of at least 110% of the largest tank's maximum capacity; The storage of oil in a portable container with a capacity of greater than 200 litres on site will not be permitted; Multiple spill kits will be kept on site; Drip trays will be used while refuelling; and Regular inspection and maintenance of vehicles, tanks and bunds will be undertaken.
	<ul style="list-style-type: none"> Welfare facilities will include closed-system toilets, with disposal of foul drainage at a suitable off-site facility.
	<ul style="list-style-type: none"> Concrete and cement mixing should be sited on an impermeable designated area and at least 10m away from a watercourse or surface water drain, to reduce the risk of run-off entering a watercourse. Equipment will be washed out in a designated area, specifically designed to contain wet concrete and wash water. Wash waters should be discharged to the foul sewer with prior permission from Scottish Water or disposed off-site at an authorised facility.
	<ul style="list-style-type: none"> All chemicals and hazardous substances will be stored safely, away from watercourses and drains in line with current best practice. They should be disposed of in line with duty of care requirements.
	<p style="text-align: center;">Operational Phase</p>
	<ul style="list-style-type: none"> The proposed surface water and SuDS scheme (see Section 11.6) will require regular maintenance. This maintenance will include the regular debris clearing and cutting of grass of surface SuDS features, and the inspection and repairs to underground features if necessary. The responsibility for the maintenance of the drainage network will lie with the organisation that adopts the network. Details of the proposed drainage strategy for the site are covered in Appendix 11.3.
	<ul style="list-style-type: none"> During the operational phase there should be no requirement for groundworks. However, should groundworks be required mitigation highlighted in the construction sections above will be adopted as appropriate.

ES Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<ul style="list-style-type: none"> All development is proposed be located outwith the functional floodplain as identified in the Flood Risk Assessment, and the minimum finished floor levels of buildings on site are to be above the maximum flood level estimated for the 1 in 200 year + climate change event. A safe access/egress route will be maintained to properties in times of extreme flood events.
Chapter 11 – Ground Conditions and Geology	Construction Phase
	<ul style="list-style-type: none"> None required
	Operational Phase
	<ul style="list-style-type: none"> None Required
Chapter 12 - LVIA	Construction Phase
	<ul style="list-style-type: none"> No further construction stage mitigation proposed
	Operational Phase
	<ul style="list-style-type: none"> Commitment to the use of sensitive materials, to be specified at detailed design stage.
	<ul style="list-style-type: none"> Commitment to the implementation of a landscape scheme, to be confirmed at detailed design stage.
	<ul style="list-style-type: none"> Commitment to the retention where possible of woodland strip to separate properties on Old Luss Road with the proposed site of the service area. To be confirmed at detailed design stage.
Chapter 13 – Historic Environment	Construction Phase
	<ul style="list-style-type: none"> A programme of historic building recording (HBR) will be undertaken in connection with Woodbank House and its associated structures and estate grounds.
	<ul style="list-style-type: none"> The results of the HBR work will be used to inform the design of a flexible approach to the preservation of remaining facades of Woodbank House and restoration where viable of associated listed structures.
	<ul style="list-style-type: none"> Conservation work will pay particular attention to the east and south facades of Woodbank House, and their presentation as a landmark feature within the proposed development
	Operational Phase
	<ul style="list-style-type: none"> The results of the EIA, HBR and conservation work will also be used to inform the production of interpretive materials for public dissemination. Such materials could take the form of information panels and/or a heritage trail

ES Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	around the grounds of Woodbank House describing and illustrating the history of the house and estate, whilst also providing information on the preservation and renovation process.
Chapter 14 - Socio-Economics, Tourism, Recreation and Public Access	Construction Phase
	<ul style="list-style-type: none"> • None required
	Operational Phase
	<ul style="list-style-type: none"> • None Required

7.3 Proposed Monitoring Arrangements

- 7.3.1 There are no predicted residual significant adverse impacts from the proposed development, and consequently no post consent monitoring is considered to be required.

Appendix A Site Location Plan

Appendix B Proposed Development