



## Lomond Banks

### EIA Report Volume 3 (Non-Technical Summary)

On behalf of **Flamingo Land Ltd.**



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Registered Office: Buckingham Court Kingsmead Business Park, London Road, High Wycombe, Buckinghamshire, HP11 1JU  
Office Address: 5th Floor, Lomond House, 9 George Square, Glasgow G2 1DYG  
T: +44 (0)141 352 2360 E: info.Glasgow@stantec.com

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	Name	Position	Signature	Date
<b>Prepared by:</b>	Various Technical Authors Aaron Doidge	Various Planner	AD	January 2023
<b>Reviewed by:</b>	Steve Callan	Associate Planner	SC	January 2023
<b>Approved by:</b>	Mark Johnston	Director of Planning	MJ	January 2023
<b>For and on behalf of Stantec UK Limited</b>				

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### **Summary of Amendments:**

Changes to this EIAR Non-Technical Summary (originally submitted as part of an application for Planning Permission in Principle on May 16<sup>th</sup> 2022) have been made in response to the letter from Loch Lomond and the Trossachs National Park dated 17<sup>th</sup> November 2022 which requested further supplementary information.

Specific changes have been made to the following sections:

- Section 3 (Proposed Development)
- Section 4 (Assessment of Effects)
- Section 5 (Proposed Mitigation and Enhancement)

## **1 Non-Technical Summary (NTS)**

### **1.1 Introduction**

- 1.1.1 This document is the Non-Technical Summary (NTS) of the Environmental Impact Assessment Report (EIAR) Addendum 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 development of both areas of the site is collectively known as 'Lomond Banks'.
- 1.1.2 This NTS provides a summary of the findings of the EIAR 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 2017 ('the EIA Regulations' that are applicable to the determination of the PPiP application for the proposed development.

## 2 Site and Surrounding Area

- 2.1.1 The proposed development site measures circa 18.9 hectares of land, situated to the north of the town of Balloch at the southern tip of Loch Lomond. The proposed site contains two distinct areas, known for the purposes of the EIAR Addendum and the PPIP application as West Riverside and Woodbank House respectively. West Riverside encompasses the south-western bank of the River Leven at its confluence with Loch Lomond and extends to the eastern boundary of Drumkinnon Wood. Woodbank House comprises the remains of the Grade A Listed Woodbank House Hotel and its associated structures and grounds.
- 2.1.2 A detailed description of the proposed site and surrounding area is provided in **Section 3** below and a Site Location Plan is provided within **Appendix A** of this NTS.

### 2.2 West Riverside

- 2.2.1 The West Riverside site is bounded 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.
- 2.2.2 The West Riverside area is heavily influenced by the immediately adjacent Drumkinnon Woods and other pockets of landscaped woodland, amenity areas and car parks are in the north of the site and to the east of the existing Loch Lomond Shores complex. The site is therefore constrained to the north and east by the River Leven, Drumkinnon Bay and by Loch Lomond itself.
- 2.2.3 West Riverside is a short walking distance from 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, covered waiting area and passenger facilities, and only one platform. The John Muir Way runs through the proposed site. The site is also situated close to National Cycle Route 7.
- 2.2.4 An oil pipeline operated by INEOS runs east-west through the northern portion of the West Riverside area of the site parallel with Ben Lomond Way. The exact location of the route is visible via pipeline markers and two fenced off areas in the northeast near the junction of Ben Lomond Way and Pier Road – these are valve gear / headworks associated with the pipeline. The pipeline then turns north to the west of Loch Lomond and does not intrude into the Woodbank House area.

### 2.3 Woodbank House

- 2.3.1 Woodbank House comprises the remains of the A Listed 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.
- 2.3.2 The buildings which comprise this former hotel are in a ruinous state as a result of two fires (at the main hotel building) and subsequent dereliction. The land and gardens surrounding the house consist of woodland and slope steeply upwards from the Old Luss Road towards the A82.
- 2.3.3 To the front of the Woodbank House, between it and the Old Luss Road, is an area of open grassland, currently used for grazing.

## 2.4 Access

- 2.4.1 Access is via several existing minor roads running through the site including Pier Road and Ben Lomond Way. These connect to Balloch Road and a number of roundabouts linking motorists from the A811 Stirling Road and the A82 trunk road network.
- 2.4.2 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 Northwest Highlands. This trunk route is strategic in nature and is maintained by Transport Scotland.
- 2.4.3 The site is a 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.
- 2.4.4 The site is situated very close to National Cycle Network Route 7 and the John Muir Way. These established routes will be secured and proposed to be enhanced by the development to ensure that connections from these routes are utilised and enhanced.

## 2.5 Environmental Characteristics

### West Riverside

- 2.5.1 The West Riverside area is immediately east of Drumkinnon Woods. This semi-natural woodland is an undulating landform and is dissected by footpaths. The woodland is bounded to the west and north by roads accessing Loch Lomond Shores and the pier. Part of the woodland is designated as Ancient Woodland (long-established of plantation origin). The woodland supports a range of flora and fauna.
- 2.5.2 SEPA's Indicative Flood Maps indicate that the northern part of the site surrounding Balloch Pier and the western banks of the River Leven running through the site are located within the 1 in 200-year return period flooding envelope (medium likelihood of flooding). However, a flood study of the river undertaken by Jacobs which provides a more detailed outline of the modelled flood extents along the river highlights that the northern part of the site from the existing roundabout on Pier Road and above, would in fact be inundated in the 1 in 200-year return period event, and more substantially in the 1 in 500-year return period event. Only a small strip of land along the banks of the River Leven through the site would be affected by flooding.

### Woodbank House

- 2.5.3 The Woodbank House area of the site is not indicated as susceptible to river flooding on SEPA's indicative flood maps. There are areas shown as being at potential risk of surface water flooding that coincide with the two small watercourses running through this area from the hills to the west and into Loch Lomond.

## 2.6 Surrounding Area

- 2.6.1 Given the site's location within the National Park, it is proximate to a number of tourism and recreation resources/receptors, including Loch Lomond, Ben Lomond, Luss, 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.

## 3 The Proposed Development

3.1.1 The PPiP application proposes the following tourism and recreation-led mixed uses:

- Refurbished tourist information building;
- Up to 60-bedroom apart-hotel;
- Up to 32-bedspace budget hotel;
- Up to 104 self-catering holiday lodges (comprised of up to 42 single story woodland lodges (Riverfront); up to 37 countryside lodges (in grounds of Woodbank House); and up to 25 woodland lodges (in grounds of Woodbank house));
- Up to 6 self-catering holiday properties in Woodbank House ancillary buildings;
- Restoration and redevelopment/conversion of Woodbank House and attendant listed structures for up to 21 self-catering holiday apartments (subject to other necessary constraints);
- Leisure / pool / water park /spa;
- Restaurants / hot food café / retail areas;
- Craft brewery including pub;
- Visitor reception area and hub buildings;
- External activity areas including areas for event and performance, play, picnic and barbeque areas;
- Monorail;
- Staff service and welfare accommodation;
- Associated parking, 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 As part of the PPiP application the retention of the Woodbank House listed building façade is proposed as a landmark feature. Conservation / redevelopment of Woodbank House (listed building) and attendant listed structures will be subject to future applications for planning and listed building consent.

3.1.3 The applicant is seeking PPiP rather than detailed planning permission. At this stage, the proposed development comprises a suite of key parameters and the detailed design will be confirmed later.

### 3.2 Key Characteristics of Proposal

#### Demolition

3.2.1 For the avoidance of doubt, no demolition is proposed as part of the PPiP and has therefore not been assessed in the EIAR Addendum.

## Tree Felling

- 3.2.2 Targeted tree removal is proposed at the pier head area and, following a tree survey, within Woodbank House area of the site to remove trees unsuited for long term retention. In other parts of the site, the principle of avoidance of tree clearance has been adopted.

## Buildings

- 3.2.3 The site is separated into five distinct 'Development Zones' (Zones A, B, C, D and E) as well as overarching components. The development zones are as follows.

Table 3-1: Schedule of Development Zones

Development Zone	Area	Land Use/Class	Floor Space/ Units
<b>Zone A – Station Square</b>	1	Brewery	1,200 sqm including 300m <sup>2</sup> pub
		Restaurant – Use Class 3	150 sqm
		Budget hotel – Use Class 7	32 bedrooms
		Amphitheatre area	Temporary tent structure
	2	Refurbished tourist office	
		Enhanced public square	
<b>Zone B – Riverfront</b>	3a	Woodland Lodges	42 lodges (max)
		Picnic, BBQ & Play Areas	
		Path Network	
	4a	Managed Woodland with SUDs	2 SUDs attenuation areas
<b>Zone C - Pierhead</b>	5	Apart Hotel & Restaurant – Use Class 7 & 3	60 bedrooms (max) 3065sqm
		Restaurant / Bar	150sqm
		Leisure pool / water park – Use Class 11	2500sqm
		Visitor Hub	Indoor rides, storage & office uses
	6	Visitor Attraction & Car Park	
	7	Multi-User Public Realm	
<b>Zone D – Boathouse &amp; Staff Area</b>	4b	Managed Woodland Area	
	3c	Boathouse	95 sqm
	11	Buffer Zone	12m deep around dwellings at Drumkinnon Gate
<b>Zone E - Woodbank</b>	13	Heritage	Woodbank House ancillary buildings conserved and converted into 6 self-catering holiday properties
	3d	Visitor Accommodation	37 Countryside Lodges (max) 25 Woodland Lodges (max)

Source: Anderson Bell + Christie

- 3.2.4 These zones and land use blocks and their associated key parameters as defined on the Parameters Plan, represent the proposed development for the purposes of the PPIP and EIAR

Addendum. The siting and design of individual development components within each zone will be subject to further consideration through the submission of applications for Approval of Matters Specified by Condition (AMSC) applications after any PPiP is granted.

### **Proposed Infrastructure**

3.2.5 In addition, the following are proposed within the site and are detailed on the Parameters Plan;

- New car parking – 372 spaces;
- Site vehicular / boat access points (existing maintained);
- Pedestrian / cycle linkages;
- Monorail – from Station Square to Pierhead (3.5m high to 5.5m high); and
- Monorail stations – Station Square & Aparthotel.

### **3.3 Description of Operational Phase**

3.3.1 Because the application is for PPiP, no detailed design of the proposed development is available or required other than to indicate the location and scale of development. At this stage it is therefore not possible to assess the potential effects from any detailed design, including some aspects relating to the operational phase of the proposed development (e.g. estimated emissions).

3.3.2 Detailed design within the context of the key parameters outlined previously will be subject to further consideration through the submission of applications for Approval of Matters Specified in Conditions (AMSC applications) after any PPiP is approved.

### **3.4 Consideration of Alternatives**

3.4.1 For the purposes of the EIAR Addendum, and noting that the vast majority of the site is positively allocated within the LDP for Visitor Experience developments, the only alternatives considered in relation to the proposed development were:

- Different possible formulations of proposed land use zones across the site. The proposed configuration of land use zones has been arrived at following detailed analysis of multiple on-site constraints, including the need to safeguard INEOS pipeline infrastructure and to minimise disturbance to woodland including the adjacent Drumkinnon Woodland. The proposed configuration of land use zones is considered to be optimal in terms of safeguarding environmental and infrastructure constraints whilst enabling the development of a commercially viable tourism, leisure and recreation development.

## 4 Assessment of Effects

4.1.1 This section provides a summary of each of the technical assessments presented within the Environmental Impact Assessment Report (EIAR) Addendum **Volume 1, Chapters 5 – 14**.

### 4.2 Ecology

4.2.1 An assessment of likely significant effects on local ecology from the proposed development is provided in **Volume 1, Chapter 5 of the EIAR Addendum**.

#### Current Baseline

4.2.2 The chapter details the ecological studies carried out 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.

4.2.3 Findings from the desk-based study identified several designated ecological features including one statutory nature conservation site within 2km of the site, namely the Boturich Woodlands Site of Special Scientific Interest (SSSI) 1.3km to the north. Although 8km to the north, qualifying interests of the Endrick Water Special Area of Conservation are linked to the site through connectivity with Loch Lomond and the River Leven. Two soprano pipistrelle roost records for grid square NS3981 were noted. Ten non-statutory Local Nature Conservation Sites were located within 2km of the site and a number of areas listed on the Ancient Woodland inventory were present.

4.2.4 Findings from the field survey identified a number of ecological features across the site, including a variety of habitats (mixed scrub, tree lines, mixed broad-leaved woodland, and surface standing waters) and faunal such as otters, badger (both unlikely to be resident), red squirrel (residency status not conclusively known), bats and breeding birds.

4.2.5 As such, the ecology assessment has considered the likely effects of the proposed development on the Important Ecological Features within and in close proximity of the site

#### Direct and Likely Significant Effects

4.2.6 A package of both embedded and further mitigation measures is proposed to avoid, prevent, and minimise the likely negative significant effects on IEFs (See **Section 5** of this NTS).

4.2.7 Taking account of the proposed mitigation, enhancement, and compensation measures there will be residual impacts on Ancient Woodland and mixed broad-leaved woodland as a result of the construction phase, as well as residual impacts on Ancient Woodland as a result of the operational phase. All of these residual impacts will be significant at the Site level.

4.2.8 Further ecological surveys will be needed at the detailed design stage for habitats, invasive non-native species, badger, otter, red squirrel, bats and nesting birds.

4.2.9 A shadow Habitats Regulations Assessment has also been prepared, which following the implementation of appropriate avoidance and mitigation measures, concluded that there will be no significant effects on Natura 2000 sites as a result of the proposed development.

4.2.10 **No likely significant adverse effects have been identified.**

### 4.3 Trees and Woodland

4.3.1 An assessment of the likely significant effects on Trees and Woodland from the proposed development is provided in **Volume 1, Chapter 6 of the EIAR Addendum**.

#### Current Baseline

4.3.2 An assessment of old maps, aerial photographs, and relict ancient woodland features within the Ancient Woodland Inventory (AWI) areas has been undertaken. Some adjustments to the

AWI shapes have been found to be appropriate following the examination of old and current Ordnance Survey mapping.

- 4.3.3 A detailed survey of each tree or group of trees in the site was undertaken in December 2021 resulting in a full inventory and Tree Constraints Plan for the Woodbank House area. Further, a walkover survey in March 2022 was also undertaken to record woodland types; species mix; the existence of any clearings or gaps; evidence or otherwise of antiquity; populations of veteran or ancient trees; made of excavated ground; planting features or tree guards; and persistent tree/fungal associations.
- 4.3.4 Woodland tree cover ranges in density and type across the site including mixed density semi-mature native broadleaf (such as ash, rowan, hazel, willow, birch cherry and oak), non-native deciduous, occasional non-native conifers, mixed deciduous native trees among others.

### **Direct and Likely Significant Effects**

- 4.3.5 The chapter details the trees and tree cover within the site. It is differentiated into nonspecialised woodland, woodland within the AWI and individual trees and groups.
- 4.3.6 Ancient woodland value has been assessed by a number of appropriate overlapping criteria. Where no significant biodiversity legacy was found or likely to be present and/or where restoration potential, the impact is negligible.
- 4.3.7 Individual trees and groups of trees can be identified, protected by application of arboricultural survey, assessment and protection at the design, construction and operation phases and any planning conditions and additional protections deemed necessary by LLTNPA. Deep landscape buffer areas adjacent to existing residential development have been set aside and represent an opportunity for net biodiversity improvement and amenity tree and shrub density
- 4.3.8 A small area of the Boathouse area is within an existing Tree Preservation Order (TPO) but is the least publicly visible part of the promontory where young and semi-mature trees have been removed in the past. Additional tree planting around the proposed building can be designed and planted to accelerate the contribution that the boathouse area makes to the visual amenity provided by the promontory area.
- 4.3.9 Where no relict ancient woodland features are present and by the passage of time cannot reasonably be expected to re-establish themselves, then woodland removal has been assessed under the Scottish Governments Control of Woodland Removal Policy as 'more appropriate when accompanied by compensatory replanting' rather than as 'presumption against Ancient Woodland loss'.
- 4.3.10 An assessment of the sensitivity of receptors and magnitude of change shows some net negative impacts. However, following embedded mitigation and additional mitigation, the net impacts range from moderate positive to minor negative, with an overall assessment impact being neutral.
- 4.3.11 Areas assessed as having significant quasi-ancient woodland character and/or biodiversity legacy have been identified and appropriate design stage precautionary principles have been recommended. There include informing operational phase Woodland Management Plans.
- 4.3.12 As such, the proposed development, woodland management, and compensatory planting will ensure that there will be no net loss of woodland and overall, the proposals will improve woodland quality and resilience.
- 4.3.13 Approximately 1.64ha of compensatory planting is being proposed, resulting in over 0.4ha net gain. Moreover, a Woodland Management Plan for the area of greatest identified levels of ancient woodland character will improve the quality of the woodland by the removal of large areas of dense invasive non-native species and by the consolidation, protection, and encouragement of regeneration at an ecologically appropriate place.
- 4.3.14 Proposed details of woodland removal and compensatory replanting would be considered at the detailed design stage. Therefore, no specific consideration has been given to the requirement for Felling Permissions at this stage.

4.3.15 **No likely significant adverse effects have been identified.**

#### 4.4 Noise and Vibration

4.4.1 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 7 of the EIAR Addendum.**

##### Current Baseline

4.4.2 The site is surrounded by farming land and a golf course to the west and north-west, Loch Lomond to the north and the River Leven to the east. The land to the south and southeast consists predominately of residential and commercial properties.

4.4.3 Major noise sources identified during the sound survey included road traffic on the A82 Dual Carriageway to the west and road traffic on the A811 to the south. A series of noise sensitive receptors have also been identified and primarily consist of residential dwellings

##### Direct Effects and Likely Significant Effects

4.4.4 A noise assessment has been carried out to assess the impact of the increase in traffic noise as a result of a proposed development at Lomond Banks in Balloch. The impact of road traffic noise on both existing and proposed residential receptors has been assessed against noise criteria agreed with West Dunbartonshire Council.

4.4.5 3D computer noise modelling has been carried out and validated against measured on-site road traffic noise data. The modelling considered current year (2019), and the proposed year of development completion (2030) scenarios. Vibration was scoped out of the assessment as it is not considered to be an issue.

4.4.6 Construction phase impacts have been scoped out of this assessment on the basis that noise, and vibration suppression techniques will be included in any future Construction Environment Management Plan. Owing to this embedded mitigation, significant adverse impacts would not occur.

4.4.7 In terms of the operational phase, the proposed embedded mitigation of a 2m high barrier at the proposed woodland bothy closest to the A82 reduces the sound level at that noise sensitive location. The level of significance is moderate/major. This calculation of amenity area has been made from the façade directly facing the A82. If the amenity of area of NSR 11 was designed to be built on the eastern side of the lodge, the lodge itself would serve as a barrier to sound, and therefore reducing the sound level. This reduction would most likely change the impact significance from moderate/major to moderate. No other residual effects.

4.4.8 **No likely significant adverse effects have been identified.**

#### 4.5 Air Quality

4.5.1 An assessment of the likely significant effects resulting from change in air quality during the construction and operation phase of the proposed development is provided in **Volume 1, Chapter 8 of the EIAR Addendum.**

##### Current Baseline

4.5.2 Baseline research indicated that West Dunbartonshire Council has investigated air quality within its area as part of its responsibilities under the Local Air Quality Management regime. Currently West Dunbartonshire Council has not declared any Air Quality Management Areas (AQMA) within the local authority.

4.5.3 West Dunbartonshire Council operates two automatic monitoring stations within its boundary area, with the nearest automatic monitor located approximately 7km from the site at Glasgow Road, Dumbarton. West Dunbartonshire Council also undertakes monitoring using Nitrous

Dioxide (NO<sup>2</sup>) diffusion tubes at 35 sites, with the nearest diffusion tube monitor (DT21) located approximately 700m south of the site on the A811 within Balloch.

### Direct Effects and Likely Significant Effects

- 4.5.4 An air quality assessment was undertaken using an 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.
- 4.5.5 The model predicts no significant change in Nitrous Dioxide (NO<sub>2</sub>) or Particulate Matter (PM<sub>10</sub> or PM<sub>2.5</sub>) at all receptors on comparison of the 'with and without' development scenarios, with the impact magnitude for all sensitive receptors categorised as Negligible.
- 4.5.6 The overall impact of the proposed development on air quality in the study area can therefore be concluded as not significant. The level of effect of the proposed development in terms of air quality can therefore be categorised as 'Negligible or No Effect'.
- 4.5.7 **No likely significant adverse effects have been identified.**

## 4.6 Ground Conditions and Geology

- 4.6.1 An assessment of the likely significant effects on ground conditions resulting from the proposed development is provided in **Volume 1, Chapter 9 of the EIA Addendum**. It also assesses the effects, such as potential contamination, from the ground conditions on the proposed development.

### Current Baseline

- 4.6.2 In terms of baseline conditions, the Woodbank House area is currently occupied by fields used for grazing, vegetated with woodland and various ruined buildings formerly associated with a hotel. The West Riverside area is occupied by woodland and walking paths and two INEOS oil pipelines run through the site from west to east.
- 4.6.3 A ground investigation characterised ground conditions across the 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), Till (gravelly sandy clay) and Made ground of more than 1m thick (almost entirely restricted to the eastern part of the site where former railway lines ran). Soils containing potentially 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 which was potentially elevated in 14 soil samples.
- 4.6.4 Ground gas monitoring indicates that the area east of Pier Road and north of Ben Lomond Way recorded concentrations of carbon dioxide and methane in exceedance of trigger values. The design of buildings in these areas may require the inclusion of gas protection measures. The results for the remainder of the site indicate that no gas protection measures will be required.
- 4.6.5 The results of the analysis of groundwater samples have confirmed the presence of slightly elevated concentrations of heavy metals in some boreholes. The concentrations encountered are considered not likely to pose a significant risk to the sensitive water environment receptors (Loch Lomond and River Leven).
- 4.6.6 Additional area-specific site investigation will be designed to quantify the potential sources of contamination and to inform the design of the remediation / mitigation measures to be adopted. Investigations will also be required to target areas of potential instability associated with former Made Ground deposits and in areas of Peat and at heavily loaded or unusual structures such as the swimming pool and monorail stanchions.

### Direct Effects and Likely Significant Effects

- 4.6.7 Taking account of all proposed embedded and further mitigation, the likely construction, and operational phases of the proposed development effects result in Minor Adverse effects.

4.6.8 **No likely significant adverse effects have been identified.**

## 4.7 Water, Hydrology and Flood Risk

4.7.1 An assessment of the likely significant effects on 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 EIAR Addendum.**

### Current Baseline

4.7.2 In terms of topography and land use, generally the site falls from the west down to the east towards Loch Lomond and the River Leven. The topography of the West Riverside area varies along its length to the Pierhead and the shores of the Loch.

4.7.3 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. Loch Lomond is located to the north of the site and has a surface area of circa 71km<sup>2</sup>. Areas within and adjacent to the water body are designated Special Protection Areas, Sites of Special Scientific Interest, Special Areas of Conservation, Ramsar Sites and National Nature Reserves. To the west of the site there are two smaller unnamed watercourses. A fourth smaller watercourse is located within the wooded area at Woodbank House.

4.7.4 In line with policy and guidance, a comprehensive site-specific flood risk assessment was undertaken to assess the risks associate with all potential flood sources.

### Direct Effects and Likely Significant Effects

4.7.5 The construction phase is the most important in terms of potential impacts on the water environment, with key activities including earthworks (including alteration of site ground levels); excavation for foundations of properties and site infrastructure; stockpiling of excavated materials; creation of impermeable surfaces; construction of new stormwater drainage system; and use and storage of oils and fuels.

4.7.6 During the operational phase, the most important potential impact is the potential change in surface water quality and volume of runoff, arising from increased impermeable surfaces, and associated downstream flood risk.

4.7.7 Watercourse crossings have the potential to impact upon the water environment in terms of flows within channels and sediment release during construction. There are however no watercourse crossings identified on the proposed masterplan.

4.7.8 Taking account of all proposed embedded and further mitigation, the proposed development is not likely to generate any significant effects upon the water environment.

4.7.9 **No likely significant adverse effects have been identified.**

## 4.8 Landscape and Visual Impact

4.8.1 An assessment of the likely significant landscape and visual effects during the construction and operation phase of the proposed development is provided in **Volume 1, Chapter 11 of the EIAR Addendum.**

### Current Baseline

4.8.2 In terms of landscape, broadly there are five types of landcover, and land uses within the study area adopted for this aspect of the assessment (spanning land within 5km from the site) such as:

- Loch Lomond;

- Use of land along the Loch shores for tourism (comprising holiday accommodation, Lomond Shores development and golf courses);
  - Urban settlement along the river from Balloch to Dumbarton;
  - Moorland, which is generally open and occasionally forested, located on the hill sides and higher ground either side of the loch and urban settlement; and
  - Large areas of agricultural land, both arable and pasture, on the lower ground beyond the moorland and generally located towards the edge of the study area.
- 4.8.3 Much of the study area is recognised through national and regional designations, which aim to identify and protect the landscape. These include Loch Lomond and the Trossachs National Park; Loch Lomond National Scenic Area; and Kilpatrick Hills Landscape Area. Views across the Loch and visibility of the many designed landscapes around the southern end of the Loch are one of the Special Qualities of the National Park.
- 4.8.4 In terms of visibility of the site, the main factors influencing views to and from the site are the local landform, high coverage of woodland and built development on the north side of Balloch. The clearest views of the site are from the Loch and the Loch shore to the north and are typically experienced by visitors using recreational activities both on and off the water.
- 4.8.5 From the south and the northern edge of Balloch, the local variations in landform and the high coverage of trees, particularly Drumkinnon Woods, obscure or filter most views towards the site. Views from the west, including Old Luss Road and the A82, are mainly obscured by the local landform and by woodland and trees along the road corridors, within Cameron House Golf Course and around the Lomond Shores development.
- 4.8.6 Views from the east, including from the A811 are similarly filtered or obscured by woodland along the River Leven, and within Balloch Country Park, although the higher ground within the park affords some elevated views.

## **Direct Effects and Likely Significant Effects**

### **Construction**

#### **Landscape**

- 4.8.7 Significant adverse short-term landscape effects will only be experienced very locally, within the southernmost part of the National Park and the southern part of LCT 263: Lowland Loch Basin – Loch Lomond & the Trossachs. Four of the Special Qualities of the National Park will be affected.
- 4.8.8 These effects will be both direct and indirect. Direct effects on the landscape will occur within the site and its immediate setting, and result from the presence of the works, including tree removal. Indirect effects will be experienced within 1km of the site and will result from the visual influence of the works being carried out within the site, as well as the presence of construction vehicles using the local road network to access the site.

#### **Visual**

- 4.8.9 The locations where receptors are predicted to experience significant adverse short-term visual effects during construction all lie within 1km of the site.
- 4.8.10 The areas which will experience the greatest visual effects during construction are Pierhead and Station Square. This is not unexpected given that these are the areas where the larger-scale construction activity will take place and the changes to peoples' views will be most apparent.

- 4.8.11 Geographically the most extensive views of construction activity will be related to the Pierhead development and will be experienced by receptors mainly to the north, including from the open waters of the loch. Views from much of the shoreline will be obscured by the indented landform around the edge of the loch and by the relatively discrete location of the site within Drumkinnon Bay. Elsewhere, views of the construction activity related to other parts of the proposed development will be contained at close range by buildings within Balloch and the high coverage of woodland across much of the site.

### Operation

#### Landscape

- 4.8.12 Significant adverse long-term landscape effects will only be experienced very locally within the southernmost part of the National Park and the southern part of LCT 263: Lowland Loch Basin – Loch Lomond & the Trossachs. These adverse effects, which will be direct and indirect, will primarily arise from the development at Pierhead (including Pier Road) which will alter the character of the existing landscape. Four of the Special Qualities of the National Park will be affected.
- 4.8.13 In addition to the direct effects on the landscape, the Pierhead development will also be visible across the open waters of the loch and its visual influence will give rise to indirect adverse effects on the quality of the views both within and into / out of the National Park and LCT 263 at a distance of up to 1km. Drumkinnon Tower will, however, remain the most prominent built feature in the landscape.
- 4.8.14 Although the proposed development at Pierhead will be sympathetically designed to integrate into the surrounding landscape and appear as an extension to the Loch Lomond Shores development, it will replace an area of woodland around the loch shore and along Pier Road, which will have been removed during construction. Given its location within a nationally designated landscape and the fact that broadleaved woodlands are one of the Special Qualities of the National Park, the change resulting from its presence has to be perceived as adverse.
- 4.8.15 Whilst the effects of the Pierhead development on the landscape within the National Park and LCT 263 are considered to be adverse, the introduction of the proposed development at Station Square will result in a significant beneficial effect. This is because the high quality of the scheme, including a new public realm will be an improvement on the current character and appearance of the site. The introduction of a cluster of new buildings of coherent architectural style and massing, will strengthen the quality of Station Square and improve its legibility as a gateway to the National Park and the Highlands. The built development will be complemented by an attractive new public realm, in a style appropriate to its location.
- 4.8.16 The restoration of Woodbank House and management and enhancement of its wooded setting will improve the current run-down appearance of the Site. Bothies/ pods, woodland lodges and countryside lodges are not out of character with the southern end of the loch where there are several developments of this type, typically associated with the former estates.
- 4.8.17 The introduction of woodland lodges into the existing grassed area between Drumkinnon Woods and the River Leven at Riverfront, will alter the visual character of the site but it will be of equal quality and in keeping with the current landscape. Similarly, the redevelopment of the Boathouse will not have an effect on the character of its location.

#### Visual

- 4.8.18 The locations, predicted to experience significant adverse long-term visual effects during operation, are associated with the Pierhead development and the introduction of car parking and the monorail along Pier Road.
- 4.8.19 Geographically the most extensive views will be related to the Pierhead development and will be experienced by receptors mainly to the north, including from the open waters of the loch within 1km. Views from much of the shoreline will be obscured by the indented landform

around the edge of the loch and by the relatively discrete location of the site within Drumkinnon Bay. Elsewhere views of the other parts of the development will be contained at close range by buildings within Balloch and the high coverage of woodland across much of the site.

- 4.8.20 In views across Drumkinnon Bay and from the open waters of the loch there will be a very noticeable change in the view. This is because the area of existing woodland between the Maid of the Loch Steamer and Drumkinnon Tower will be replaced by the three-storey apartment-hotel which will extend around the shoreline. New tree planting around the building will be too immature to provide substantial screening although some retained existing trees will partially obscure views of the development.
- 4.8.21 The new buildings will be of a similar height and massing to the existing Loch Lomond Shores development and will appear as an extension to the existing buildings. A varied roof line and green-roof construction will also limit both their prominence and their perceived scale relative to existing development. Drumkinnon Tower will continue to be the tallest and most visible building. Nevertheless, the long-term presence of built development across much of the view rather than woodland, represents an adverse change to the current outlook.
- 4.8.22 The introduction of car parking and the monorail along Pier Road, combined with the loss of woodland removed during construction, will result in significant adverse effects on the views experienced by users of Pier Road and occupants of residential properties along Clairinsh Avenue. Over time, however, as the compensatory tree planting matures these effects will reduce.
- 4.8.23 Significant beneficial effects are associated with the Station Square development, particularly when seen from Balloch Bridge, which is one of the key locations where visitors stop to appreciate the view north along the River Leven towards the Highlands. The only adverse effects will be experienced by occupants of the residential properties along the southern end of Pier Road who currently have open views across Station Square towards the River Leven. Due to their proximity to the proposed development and the loss of trees, which were removed during construction, these residents will experience long-term, adverse significant effects.
- 4.8.24 There will be no significant visual effects arising from the proposed development at Woodbank House either on users of the A82 and Old Luss Road, occupants of nearby residential properties, or receptors at Upper Stonymollan. This is because the restoration of Woodbank House and management and enhancement of its setting will improve the quality of the views experienced, while the bothies and woodland lodges will be in keeping with similar developments in the locality.
- 4.8.25 At Riverfront, the introduction of woodland lodges into the existing grassed area between the woodland will change the appearance of the site and introduce more activity and movement, but its character will be of equal quality and in keeping with similar developments in the locality. The redevelopment of the Boathouse and the Staff Area will not give rise to a significant adverse effect on views.
- 4.8.26 In middle and long-distance views, the appreciable screening afforded by the high coverage of woodlands and the built-up edge of Balloch to the south will typically minimise any effects of the proposed development on views with the result that no significant visual effects are predicted to arise. This includes transient views from the footpath leading up to Balloch Castle through the Country Park to the east and from higher land at Upper Stonymollan to the west.

### Cumulative

- 4.8.27 No significant cumulative effects are identified other than the view of Station Square from Balloch Road. Here, the combined effect of the Sweeney Cruises proposals with the proposed development is considered to result in an adverse change to the current outlook. However, this is primarily because of the prominence of the Sweeney Cruises buildings rather than the proposed development, which alone is considered to be beneficial.

## 4.9 Traffic and Transport

- 4.9.1 An assessment of the likely significant effects on traffic and transport from the proposed development is provided in **Volume 1, Chapter 12 of the EIAR Addendum**.

### Current Baseline

- 4.9.2 The proposed development site is accessible by foot along the existing main vehicular access routes to the site, as well as the National Cycle Route 7 towpath along the western side of the River Leven and west bank of the site, dedicated pedestrian routes through Lomond Shores and the footways and links to the John Muir Way. Key routes included in the baseline include; Pier Rod; Ben Lomond Way; Lomond Shore Internal Routes; Old Luss Road; and Joh Muir Way.
- 4.9.3 As noted previously, National Cycle Route 7 sits adjacent to the site in addition to the West Lomond Cycle Way and general cycle network. The site is well served by public transport access, including Balloch Railway Station (located approximately 100 metres to the south of the proposed development on Tullichewan Road).
- 4.9.4 Bus stops are located on both sides of Balloch Road adjacent to the proposed southern site boundary and are serviced by the number 1/1A/1E bus services (First Greater Glasgow). Moreover, the 207, 305, 306 and 309 (Garelochhead Coaches) run from Balloch. Specifically, the 207 provides a circular service between Balloch and Alexandria and the 305, 306 and 309 bus services run from Balloch to Alexandria via Luss, Helensburgh and Balmaha.
- 4.9.5 In terms of vehicular access, the main strategic and local vehicular access routes to the site include the A82 Trunk Road; A811 Stirling Road; B857; Carrochan Road (A813); Balloch Road / Drymen Road, Ben Lomond Way and Pier Road.
- 4.9.6 An analysis of existing traffic flows indicate that the development site and its proposed access routes are integral to the existing commercial, retail and leisure development at Loch Lomond Shores, as well as access to the Loch Lomond (Pierhead) slipway and Maid of the Loch.
- 4.9.7 Crashmap data was also interrogated to provide a 5-year summary of accident history on the local and strategic road network. Analysis demonstrates that a spread of slight and serious accidents on the local road network had occurred during the 5-year analysis period (2017 to 2021). These are likely attributed to higher circulatory speeds, driver error and the higher volume of traffic on these links and junctions generally.

### Direct Effects and Likely Significant Effects

- 4.9.8 As a result of design measures, the effects of the proposed 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 Balloch Village, Station Square and streetscape proposals, which will see an uptake in the use of sustainable modes of travel within the local area.
- 4.9.9 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.
- 4.9.10 There would be increases in traffic flows within the Site and Loch Lomond Shores as a result of the proposals, most noticeably on Old Luss Road (North) and Ben Lomond Way, which constitute the main access roads and links into the site.
- 4.9.11 Junction capacity impact assessments undertaken in the Transport Assessment 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.

4.9.12 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.

4.9.13 **No likely significant adverse effects have been identified.**

#### **4.10 Archaeology and Cultural Heritage**

4.10.1 An assessment of the likely significant effects upon the setting and physical fabric of cultural heritage assets from the proposed development is provided in **Volume 1, Chapter 13 of the EIAR Addendum.**

##### **Current Baseline**

4.10.2 There is one designated heritage asset within the site boundary, namely the Category A listed Woodbank House with Garden Building. There are also five known non-designated heritage assets within the site which includes:

- Disused railway line connecting to the steamer pier north of the site;
- Former Balloch Station building, which survives as a private residence;
- Course of the Dumbarton to Tyndrum Military Road, preserved today in part as Old Luss Road;
- Stables associated with Woodbank House; and,
- A small outbuilding, possible bothy, at the north of the grounds of Woodbank House with Garden Building.

4.10.3 In terms of heritage assets within the study area (defined as 1km outside the site), there are no World Heritage Sites, Inventory Battlefields, or Conservation Areas. There are two Scheduled Monuments, one of which lies within an Inventory Garden and Designed Landscape. There are also 14 Listed Buildings within the Inventory Garden and Designed Landscape.

4.10.4 Further, there are 14 Listed Buildings within the study area (in addition to those within the Balloch Castle Inventory Garden and Designed Landscape). They include one category A; nine Category B; and four Category C listed buildings. There are 42 non-designated heritage assets within the study area.

4.10.5 The Historic Land-use Assessment Mapping tool indicates historic sand and gravel extraction close to the north-eastern edge of the site, around what is now the Loch Lomond shores car park and visitor centre. OS mapping from 1899 onwards depicts 'sand pits' in this area. Areas of disturbance are visible on aerial photographs, and it is likely the area was used for quarrying sand in the first half of the twentieth century.

##### **Direct Effects and Likely Significant Effects**

4.10.6 As noted, there are four known heritage assets within the site boundary on which a potential impact has been identified as a result of the proposed development: This is in relation to the Category A listed Woodbank House with Garden Building, and non-designated heritage assets including: Woodbank House stables; a possible bothy at the north of the grounds of Woodbank House; and the disused railway line to the steamer pier north of the Site.

- 4.10.7 In addition, the site is considered to be of medium archaeological potential for hitherto unknown archaeological remains. Potential impacts upon unknown archaeological deposits will be addressed through a staged programme of archaeological works likely to be undertaken as a post-determination planning condition.
- 4.10.8 Within the Site, the Category A listed building Woodbank House with Garden Building and stables have been assessed for potential direct and setting effects. Beyond the Site boundary, four further designated heritage assets are assessed for setting effects including: Drumkinnon Pier, Winch House including Slipway (Category A), Balloch Castle, Balloch Castle (Inventory Garden and Designed Landscape), and Balloch Castle, earthwork (Scheduled Monument).
- 4.10.9 Embedded mitigation and enhancement measures have been considered, and additional mitigation measures proposed as necessary to minimise the potential impacts of the proposed development.
- 4.10.10 Taking into account the implementation of mitigation and enhancement measures, there are no likely adverse direct or setting effects upon the historic environment arising from the proposed development which would be considered significant in the context of the EIA Regulations.
- 4.10.11 **No likely significant adverse effects have been identified.**

#### **4.11 Socio-economics, Tourism, Recreation and Public Access**

- 4.11.1 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 EIAR Addendum**. This Chapter has been split into a socio-economic assessment, tourism and recreation assessment and public access assessment.

##### **Current Baseline**

- 4.11.2 The Socio-economic and Labour Market Study Area<sup>1</sup> surrounding the Site is characterised by:
- An increasing population between 2001 and 2019 and to 2035;
  - A comparable proportion of working age residents within the wider area, the wider region and Scotland;
  - A comparable economic activity and inactivity rate with Scotland;
  - A lower proportion of people in highly skilled jobs locally compared to the wider area, wider region and Scotland and a higher proportion of people in semi-skilled/unskilled jobs compared to the wider area, wider region and Scotland;
  - A lower proportion of people with Level 4 qualifications or above compared to the wider area, wider region and Scotland; and,
  - A higher proportion of residents have no qualifications compared to Scotland.

##### **Direct Effects and Likely Significant Effects**

###### **Socio-economic**

- 4.11.3 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 14.2, Figure 14.1**).

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<sup>1</sup> Defined as the area with a 15-minute drive time.

- 4.11.4 An extensive desk-based review of publicly available information was undertaken to establish baseline conditions of the Study Area. The following socio-economic indicators have been considered:
- Current and future demographic characteristics including population and age structure; and,
  - Labour market indicators including economic activity, employment and qualifications.
- 4.11.5 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) generate by those jobs.
- 4.11.6 The socio-economic assessment shows that the proposed development 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 proposed development.
- 4.11.7 **No likely significant adverse effects have been identified.**

### Tourism and Recreation

- 4.11.8 The Study Area for the tourism and recreation assessment is defined by a 5km radius from the Site (see **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.
- 4.11.9 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 visitor patterns and trends, occupancy rates and popular visitor attractions are analysed.
- 4.11.10 A desk-based audit has also 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.
- 4.11.11 The following facilities and attractions have been identified in the study area:
- Indoor and outdoor tourist attractions – including cultural facilities, recreational amenities and leisure facilities;
  - Visitor accommodation – including hotels, self-catering, Guest Houses and B&Bs;
  - Hospitality establishments – including restaurants and cafes;
  - Recreational assets – including Loch Lomond, the River Leven, Balloch Castle and country parks and woodland;
  - Visitor activities – including walking, fishing, country pursuits, wildlife interests and sports; and,
  - Visitor and tourist routes – including cycling, walking and rights of way.
- 4.11.12 The assessment of tourism and recreation shows that the vast majority of receptors will experience no significant effects. Overall, it is unlikely that the presence of the proposed development would result in a change in the visitor attractiveness or tourism potential identified tourism and recreation receptors to such an extent that would result in an adverse effect in the long term. It is likely that the proposed development will enhance visitor attractiveness and numbers resulting in long term permanent beneficial effects for the local and regional tourism sector and visitor economy.
- 4.11.13 **No likely significant adverse effects have been identified.**

### Public Access

- 4.11.14 The assessment of public access shows that the vast majority of receptors will experience no significant effects. Formal and informal public access routes, such as the John Muir Way,

Three Lochs Way, Lomond Shores Way and access to Drumkinnon Bay Beach have the potential to experience localised significant effects in the short term.

4.11.15 An Access Management Plan, proposed as embedded mitigation, will ensure continuity of access is maintained in the form of temporary localised diversions during the construction phase. Whilst temporary and intermittent, this change will not inhibit access or greatly alter the recreational or experiential value of these routes. Furthermore, in the long term the proposed development will enhance a number of key formal and informal public access routes throughout the Site, resulting in a beneficial effect during the operational phase.

4.11.16 **No likely significant adverse effects have been identified.**

## 4.12 Risk of Major Accidents

4.12.1 Any risk of major accidents taking place during the construction phase will be minimised through the preparation and implantation of a Construction Environment Management Plan (CEMP). Adopting the procedures and construction methodologies presented in this document will limit any risk of major accidents occurring which may cause harm to human health and / or the environment.

4.12.2 It is important to note that the CEMP will be subject to refinement and agreement with relevant consultees and Loch Lomond and the Trossachs National Park Authority as the relevant planning authority prior to the commencement of construction.

4.12.3 **As such, no likely significant adverse effects have been identified.**

## 5 Proposed Mitigation and Enhancement

5.1.1 This section of the NTS provides a summary of all mitigation and enhancement measures proposed to avoid significant adverse effects and enhance beneficial effects from the proposed development.

### 5.2 Embedded Mitigation

5.2.1 In line with EIA best practice, an overarching suite of mitigation measures and commitments is proposed to be incorporated from the outset to both address any adverse effects and enhance its environmental performance. These are termed 'embedded mitigation measures'.

5.2.2 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 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 3m 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 and / or 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;
- 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; and
- All construction work will be undertaken in general accordance with SEPA's Guidance for Pollution Prevention (GPPs).

### Ecology

5.2.3 Embedded mitigation includes avoidance of Identified Ecological Features during the design process, and the implementation of standard best practice mitigation during construction.

#### Mitigation by Design

5.2.4 During the design process, various factors were taken into consideration in order to minimise potential impacts on IEFs. These can be summarised as:

- Exclusion of all previously proposed works from Drumkinnon Wood; and,
- Minimisation of tree removal at Woodbank House.

#### Designated Sites

5.2.5 With respect to Ancient Woodland, work areas will be tightly contained to avoid unnecessary encroachment into ecologically sensitive areas, including the fencing off and clear signage of no-go zones.

5.2.6 A formal Ancient Woodland Restoration Plan will be devised for the Ancient Woodland within Zone E (Woodbank). This will include:

- a formal eradication programme for INNS, resulting in the clearing of 0.27 ha of dense bamboo, 1.2 ha of dense and more scattered stands of rhododendron, and 0.16 ha of cherry laurel; and,
- Method statements for the approach to be used to clearing ground flora within the Ancient Woodland in locations where lodges and bothies will be sited, and the safe storage of the scraped soil and seed bank for translocation into areas previously affected by INNS. However, all soils where INNS have been present should be disposed of off-site.

5.2.7 Longer-term management of the Ancient Woodland is considered in operational phase mitigation below, via a Landscape and Biodiversity Management Plan.

5.2.8 With respect to the River Endrick SAC, the following construction phase mitigation will be implemented:

- General good practice measures for working in and near to watercourses and waterbodies will be adhered to, as per the embedded mitigation described above. A pollution prevention plan will be included in the CEMP, fuels and other chemicals will be stored securely within the site construction compound, and appropriate wash-out facilities will be available for vehicles and machinery; and,
- If construction work is carried out during the hours of darkness, machinery and floodlights will be directed away from the River Leven, which must not be directly lit.

5.2.9 The above mitigation for the River Endrick SAC will also be applicable to the River Leven LNCS.

### Habitats

5.2.10 The following mitigation, enhancement or compensation will reduce construction phase impacts and effects on habitat IEFs:

- General good practice measures for working in and near to watercourses and waterbodies will be adhered to, as per the embedded mitigation described above. A pollution prevention plan will be included in the CEMP, fuels and other chemicals will be stored securely within the site construction compound, and appropriate wash-out facilities will be available for vehicles and machinery. These measures will reduce effects on surface waters;
- Retained areas of pasture within Zone E (Woodbank) will be diversified through the application of an appropriate native meadow seed mix and managed as a traditional meadow. This will improve both the structure and composition of this habitat, in particular for pollinators. These measures will be incorporated into the Landscape and Biodiversity Management Plan for the Proposed Development;
- Impacts on scrub, woodland and other tree-ed habitats, in particular within Zones B, D and E, and Area 11, will be mitigated through the provision of compensatory tree planting. Tree species to be used will be native, and typical of those which would occur naturally in these types of habitat, as described in the Design and Access Statement that accompanies the EIAR Addendum. Areas of semi-natural woodland lacking in regenerating trees and/or an appropriate ground flora will be strengthened through the underplanting of new trees, and the introduction of an appropriate ground flora (see reference above to reuse of existing Ancient Woodland soils and ground flora); and,
- Areas in Zone B (Riverside) supporting hybrid/non-native bluebells will be stripped and the soils disposed of off-site; this material will not be reused within the Proposed Development in order to prevent further spread of INNS.

### Otter

5.2.11 Construction phase impacts on otter will be reduced through:

- All watercourses within 250 m of the Proposed Development footprint will be surveyed for signs of otters. If necessary, licences will be sought for any relevant resting places; and,
- The site induction for construction personnel will include a site briefing provided by the ECoW regarding otter and the identification of shelters of this species. The briefing will also emphasise the importance of protection of watercourses.

### Badger

5.2.12 Construction phase impacts on badger will be reduced through:

- Pre-construction surveys will be carried out for badger for all relevant habitat within 100 m of construction. If necessary, licences will be sought for any relevant setts discovered as a result of this; and,
- The site induction for construction personnel will include a site briefing provided by the ECoW regarding badger, and the identification of shelters of this species. The briefing will also emphasise the importance of protection of key habitats such as woodland.

### Red Squirrel

5.2.13 Construction phase impacts on red squirrel will be reduced through:

- Minimisation of tree loss within Zones D (Staff Area) and E (Woodbank) at the detailed design stage;
- Pre-construction surveys will be carried out for red squirrel for all relevant habitat within 50 m of construction, including tree-downtakings and vegetation clearance. If necessary, licences will be sought for any dreys discovered as a result of this; and,
- The site induction for construction personnel will include a site briefing provided by the ECoW regarding red squirrel, and the identification of shelters of this species. The briefing will also emphasise the importance of protection of key habitats such as woodland.

### Bats

5.2.14 Construction phase impacts on bats will be reduced through:

- Construction of a bespoke Bat House within the ground of Woodbank House (Zone E) to replace roosting opportunities which will be lost as a result of the restoration and conversion of the building. The Bat House will be situated no further than 100 m from the existing locations within Woodbank House, and will incorporate underground potential hibernation features, and a roof void suitable for use by brown long-eared bats, as well as crevices for roosting pipistrelle species. The Bat House will be in a quiet location, and will not be directly lit. A full EPS licence application will then be made to NatureScot to legitimise the works on Woodbank House;
- At the detailed design stage, minimisation of the number of trees with bat roost suitability that will be directly affected through removal, and/or disturbed through noise, vibration or construction phase lighting. For those trees which cannot be designed out of the Proposed Development, aerial survey will be needed to confirm their roosting status. Licence applications will be needed to NatureScot for any tree works which are found to affect tree bat roosts, including both direct and indirect effects, and these will be supported by Species Protection Plans detailing all relevant additional mitigation and compensation measures, for example the strapping of potential roost features directly affected onto retained mature trees; and,
- A tree-mounted bat box will be provided for each tree within the Site with bat roost suitability which will be affected by the Development, either directly through removal or indirectly through disturbance. The type and location of these boxes will be agreed with a suitably qualified ecologist, at the detailed design stage.

### Breeding Birds

5.2.15 Tree-felling and or vegetation removal will not be undertaken during the bird nesting season. If this is not possible, the relevant areas will need to be inspected by a suitably qualified ecologist in advance of the works, to ensure that no breeding birds are present. If nesting is noted or suspected, works will need to cease until it has been ascertained that all fledglings have hatched and have left the nest(s).

5.2.16 A range of bird nest boxes will be installed as part of the Proposed Development. Where possible these will be integrated boxes within new buildings, for house sparrow, but 50 tree-mounted bird boxes should also be provided throughout the Site, at locations to be agreed with a suitably qualified ecologist.

## Trees & Woodland

- 5.2.17 Detailed design will use up-to-date tree survey data, topographic positioning and tree constraints data to:
- Prevent the unavoidable loss of Category A and B trees;
  - Minimise the loss of Category C or Category U trees;
  - Make allowance for viable space for replacement individual replacement tree planting;
  - Avoid damage to underground constraints, particularly by avoiding construction and construction activities within the root protection area (RPA) of trees including the use of no-compaction no-dig cellular confinement systems (Arboricultural Association Guidance Note 12) and other specialised techniques and products where minor incursions into root protection areas are necessary;
  - Avoid or minimise the need for crown lifting or reduction by making use of areas beneath clear crown heights and significant branches;
  - Following the published recommendations of the Ancient Tree Forum, additional rooting volume will be protected for any veteran trees that are identified at the survey stage; and,
  - Draw up a programme of systematic eradication or control of invasive non-native species; methodologies must reflect and avoid the risk of collateral damage to trees and native or naturalised species, especially in areas of relict ancient woodland habitat.
- 5.2.18 The detailed design will then be assessed for impact on trees, with further design iterations until the impacts are deemed acceptable.
- 5.2.19 An Arboricultural Impact Assessment will be prepared in accordance with BS5837 2012 for any detailed application. The Assessment will include Tree Protection Plans and Arboricultural Method Statements setting out the extent of construction exclusion zones, precautionary zones, special procedures, barrier types and positions and the timing of protection measures and arboricultural supervision and monitoring before, during and after construction.
- 5.2.20 In addition (where appropriate), within areas of any residual ancient woodland habitat the following measures will be applied:
- A Draft Woodland Management Plan will be produced to complement an inform detailed design work, by setting out the vision for the long-term management of the woodland area, the protection, consolidation and encouragement of remnant ancient woodland communities and additional planting to increase the proportion of native flora and fauna at an ecologically appropriate pace;
  - Where tree losses are unavoidable or desirable, non-native, or non-naturalised tree species will be selected for removal;
  - Where trees have downgraded to Category C or U due to deteriorating condition, and where space allows, these will be retained in reduced, safe, form as habitat poles and deadwood will be left in-situ or moved to stable positions to build up a stock of long-term deadwood habitat; and,
  - Close to trees, lodges and pods will be designed to be built on stilts such than the area beneath them is fully ventilated and roof drainage is redistributed into the solum to allow for the ongoing vitality of roots and rooting soil.
- 5.2.21 The procedures, protective measures and requirements for arboricultural supervision and monitoring set out in the Arboricultural Impact Assessment and Tree Protection Plans will be

covered by (i) appropriate planning conditions (ii) the appointment of a project arboriculturist and (iii) adoption of the tree protection regime in all relevant contract and sub-contract documents.

### Noise & Vibration

5.2.22 The development proposal has several design features and embedded mitigation which will avoid, prevent or minimise significant adverse environmental effects and to enhance beneficial effect. Embedded mitigation measures of relevance to the construction phase include the development, approval and implementation of noise suppression techniques as part of a Construction Environmental Management Plan.

- 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 11.

### Ground Conditions

5.2.23 A number of design features and embedded mitigation measures have been incorporated into the design and construction of the proposed development to avoid, prevent, or minimise significant adverse environmental effects and to enhance the beneficial effects.

5.2.24 The embedded mitigation measures of relevance to this assessment are set out below.

- Construction Environmental Management Plan will be prepared and implemented during the construction phase of the proposed development. The purpose of the CEMP is to mitigate any adverse environmental effects and will specifically include the following:
  - A watching brief for the visual and olfactory assessment of the soil and groundwater (if encountered) will be maintained with sampling and testing for verification and assessment purposes where necessary;
  - Contaminated hotspots plan (procedure for encountering unexpected contamination);
  - Surface water and groundwater protection measures (including an emergency spillage response procedure) and working to the SEPA GGP (guidance for pollution prevention) 5: Works and maintenance in or near water;
  - GPP 2: Above ground oil storage tanks, GPP 8: Safe storage and disposal of used oils and GPP 26 Safe storage – drums and intermediate bulk containers;
  - GPP 13: Vehicle washing and cleaning;
  - GPP 21: Pollution incident response planning;
  - GPP 22: Dealing with spills;
  - Details around dust suppression measures, which will be required during periods of prolonged dry weather;
  - An exclusion zone will be present around either side of the INEOS gas pipeline;
  - If required, remediation is likely to comprise localised excavation of contaminated soils and / or capping with clean material to present a barrier between contamination and receptors. In the case of proposed buildings or areas of hardstanding, the barrier will be integral to the design of the new development;
  - If required, gas protection measures will be incorporated into the design of the proposed buildings to protect the building structures and human health (future end users). Depending on the design of certain structures such as woodland lodges, the requirement for gas protection measures may be mitigated by the presence of an air gap beneath the buildings;

- Site-specific risk assessment specifically designed to assess the risks posed by piling. Ultimately, if piled foundations are required, the technique used will be selected on the basis of protecting deep groundwater from contamination; and,
- 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 which will include the use of appropriate safety equipment and personal protective equipment (PPE).

### Landscape & Visual

5.2.25 In addition to the installation of site hoarding to minimise the landscape and visual effects of the proposed development, a number of other good practice mitigation measures will be secured via the implementation of a Construction and Environmental Management Plan (CEMP) to ensure effective site management. These good practice measures will include the following:

- 12m buffer (i.e., no construction) around the site boundary with residential area of Drumkinnon Gate;
- Any construction activities within 5m corridor of the shoreline will be subject to specific consideration within the CEMP and agreed with the National Park Authority prior to commencement;
- Location of construction compounds and temporary stockpiles in the least visibly prominent locations within the site;
- Use of well-maintained hoardings and fencing;
- Protection of all retained vegetation on the site in accordance with BS 5837: Trees in relation to design, demolition and construction;
- Prevention of damage to landscape features adjacent to the construction plots due to movement of construction vehicles, plant or operatives;
- Working with existing topography to minimise ground level regrading where possible;
- 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 parts of the site to existing receptors and land uses as identified in **Chapter 2 Site and Proposed Development** and **Chapter 12 Traffic and Transport**.
- Design of lighting to avoid unnecessary intrusion onto adjacent buildings and siting construction compounds and machinery to minimise upward and outward light spill;
- Use of designated construction traffic routes to and from the site in order to minimise visual amenity effects on neighbouring sensitive receptor areas; and,
- Engagement of an Ecological Clerk of Works (ECoW) to work on site with the construction contractor to oversee the management of the risks associated with protecting biodiversity and manage ecological operatives engaged in ecological mitigation activities.

## Traffic & Transport

5.2.26 The embedded mitigation measures incorporated within the proposed development are as follows:

### Construction Environmental Management Plan (CEMP):

5.2.27 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; and,
- Adoption of standard construction industry working hours for noise generating activities.

## Archaeology and Cultural Heritage

- A number of design features and embedded mitigation measures have been incorporated into the design of the Proposed Development to avoid, prevent or minimise significant adverse environmental effects and to enhance beneficial effects. Embedded mitigation measures of relevance to this assessment are:
- Avoiding construction of lodges or bothies on ground to the east of Woodbank House with Garden Building LB1125 to ensure the visual relationship between the house and its grounds in this area as well as views to and from the house from Old Luss Road (HA3) are retained;
- Adherence to relevant HES regulatory and good practice guidance in construction methods- for assessment purposes it is assumed that the restoration of Woodbank House will be carried out in accordance with a Conservation Management Plan and any other necessary surveys (e.g., structural survey, historic building record (HBR) etc) required and agreed through further consultation to enable good practice to be achieved. A Conservation Management Plan will identify opportunities for enhancement, including but not limited to:
- Retention of the east (principal) façade of Woodbank House LB1125;
- Conservation of the south façade of Woodbank House LB1125;
- Conversion of other Listed and non-listed buildings within the grounds of Woodbank House with Garden Building LB1125 where practicable and viable; and,
- The detailed scope and timing of these measures will be developed and designed according to advice and guidance received from HES and submitted as part of a separate Listed Building Consent (LBC) application.

## Socio-economics, Tourism, Recreation and Public Access

- Access to all key nodes and routes through the Site are to be maintained during the construction phase with localised diversions in place to facilitate construction which may occur on land within the applicant's control. Any impacts on walking and cycling 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;
- Development and implementation of an Access Management Plan (AMP);
- Access to tourist information facility will be maintained whilst building refurbishment takes place; and,
- Employment of locally resident workers and delivery of training (e.g. apprenticeships where possible).

## Operational Phase

### Ecology

5.2.28 Operational effects on IEFs will be mitigated through:

- Design and installation of a wildlife-friendly night lighting scheme, in particular for bats. This should focus on restricting the use of lighting to only those areas where it is strictly needed, using timers and low-level pillar lighting wherever possible to ensure dark corridors are maintained for use by nocturnal and crepuscular animals. Lighting wavelengths should be kept within the frequencies advised by the Bat Conservation Trust for use in areas with high bat activity;
- Implementation of a 10mph speed limit on all new access roads throughout the Site;
- Dogs to be kept on leads throughout the Site;
- No pedal cycles to be used within woodland and grassland habitat areas; and,
- Clear signage of permitted pedestrian footpaths, with appropriately located environmental interpretation boards.

### Trees & Woodland

5.2.29 Use of the developed parts of the Site with new and retained woodland areas and any individual or group replanting will be pro-actively managed to ensure that public access, occupation of buildings and associated vehicular accesses and parking etc. are conducted whilst respecting the sensitivities of trees, groups and woodlands and the established aims and objectives of the Woodland Management Plan(s).

5.2.30 The management will include areas of compensatory planting which will be required as part of the overall mitigation measures arising from compliance with the Scottish Government's Control of Woodland Removal Policy and LLLTNPAs Policies.

### Noise & Vibration

5.2.31 The development proposal has several design features and embedded mitigation which will avoid, prevent or minimise significant adverse environmental effects and to enhance beneficial effect. Embedded mitigation measures of relevance to the operational phase of the proposed development include incorporating one stretch of 2m high close boarded timber garden fencing at the garden / terrace boundary of noise sensitive receptor 11.

### Air Quality

5.2.32 Several design features and embedded mitigation measures have been incorporated into the design of the proposed development to avoid, prevent, or minimise significant adverse environmental effects and to enhance beneficial effects. Embedded mitigation measures of relevance to this assessment are:

- Travel Plan to promote sustainable travel choices by staff and visitors to the site. This will reduce the number of single-occupancy car journeys made to and from the site.

### Water, Hydrology & Flood Risk

5.2.33 A number of design features and embedded mitigation measures have been incorporated into the design and construction of the proposed development to avoid, prevent or minimise significant adverse environmental effects and to enhance beneficial effects. Embedded mitigation measures of relevance to this assessment are:

- 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; and,
- Development within a 5m strip along waterfronts will be subject to specific consideration within a CEMP to be agreed with the NPA prior to commencement.

5.2.34 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.

### Landscape & Visual

- 12m buffer (i.e., no operational activities) around the site boundary with residential area of Drumkinnon Gate;
- Screening increased around the boundary between woodland and residential area using evergreen native shrubs of local provenance, to reduce visual effects on nearby residents;
- 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;
- Existing pathways, to be regraded and enhanced with new porous surfacing materials;
- New woodland planting to be created on the Woodbank House site;
- 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 Proposed Development**;
- Safeguarding of identified important trees within existing woodland areas;
- Integration of Station Square proposals with Balloch Street Design Project and Sweeney Cruises proposal;
- 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 applicant's control in order to avoid lengthy or circuitous alterations.

### Traffic & Transport

- 5.2.35 Analysis of anticipated vehicle uplift at peak time once the proposed development is operational has been undertaken. The analysis predicts that the development will result in an increase in traffic resulting from the proposed development.
- 5.2.36 The peak hours were identified from traffic surveys that were carried out at existing junctions in Balloch and at the A82/A811 Stonymollan Roundabout junction and were agreed with West Dunbartonshire Council. The peak hours are defined as:
- Weekday morning 8am to 9am
  - Weekday evening 4.30pm to 5.30pm
  - Saturday 3pm to 4pm
- 5.2.37 The peak time analysis predicts that for vehicles entering and leaving Balloch as a whole vehicle uplift will be less than 1 car per minute. This accounts for vehicles entering and exiting Balloch from the west using the A811 and A82 and from the east using the A811.
- 5.2.38 At Ben Lomond Way weekday evening and weekend peak hour uplift is predicted to be less than 1 car per minute and morning peak hour is anticipated to be just over 1 per car minute with an additional 74 cars per hour.
- 5.2.39 Old Luss Road (North) is predicted to experience the largest uplift in vehicle numbers. At weekday morning and evening peak hour the increase in vehicles is anticipated to be just over 1 car per minute and Saturday peak hour the uplift is predicted to be just over 2 cars per minute.
- 5.2.40 During the 3 peak hour periods at Pier Road the vehicle uplift is predicted to be less than 1 car per minute.
- 5.2.41 Maximum delay and maximum queue lengths at the A82/A811 Stonymollan Roundabout junction pre and post development have also been predicted. The analysis shows that the maximum delay predicted to be experienced at any of the junctions is 19.46 seconds and there will be no difference in maximum queue in terms of number of vehicles.

### Design & Form-Based Mitigation

- 5.2.42 The embedded transport mitigation measures incorporated within the proposed development are as follows:
- 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 Stoney-mollan 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.

### **Socio-economics, Tourism, Recreation and Public Access**

- Access to all key nodes and routes through the Site 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 to other land within the applicant's control in order to avoid lengthy or circuitous alterations;
- Continued public access to Drumkinnon Bay Beach/Waterfront and other informal routes identified in **Appendix 14.2 – Detailed Baseline Conditions** and continued provision of access through the Site to existing receptors and land uses;
- Development and implementation of an Access Management Plan (AMP) to encourage sustainable travel to/from the Site by visitors and workers;
- Elevated section of monorail to have sufficient clearance above roads and paths to allow for passage underneath;
- Employment of locally resident workers and delivery of training (e.g. apprenticeships where possible); and,
- Employment will pay at least the Scottish Living Wage and membership of the Scottish Business Pledge.

## **5.3 Further Mitigation and Enhancement Measures**

- 5.3.1 The table below summarises the further mitigation and enhancement measures which have been proposed in the technical assessment.

Table 5-1: Schedule of Proposed Further Mitigation and Enhancement Measures

EIA Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
<b>Chapters 5 &amp; 6 – Ecology and Trees &amp; Woodland</b>	<b>Construction Phase</b>
	Good practice measures when working in or near to watercourses will be adhered to.
	Appointment of 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).
	Pre-construction and regular protected species surveys.
	Provision of information regarding ecological sensitivities as part of site induction. Toolbox talk for all operatives regarding habitat and species in area.
	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.
	Implementation of 10mph speed limit for all site traffic.
	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.
	Site compounds/material and plant storage areas to be located as far as possible from watercourses.
	If construction work is carried out during the hours of darkness, machinery and floodlights will be directed away from watercourses. Use of heavy machinery and pile drivers will be limited to avoid two hours before and after dawn and dusk within 30 m of watercourses or waterbodies.
	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).
	Undertaking an early flowering plants survey prior to the detailed design of the proposed development.
	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.
	Use of geoweb to protect adjacent tree rooting systems from development within woodland.
	Porous gravel or similar for proposed parking.
Turf translocation if required.	
Tree survey to be undertaken of focused areas of the development to provide information on individual trees in relation to design and	

EIA Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<p>construction. This would inform the production of method statements for particular construction activities within woodland habitats.</p>
	<p>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>
	<p>Where woodland removal is inherent, losses will be replaced elsewhere within the site by an equivalent area of new planting. The woodland management strategy adopted will aim to replace poor quality woodland with more appropriate native tree species as well as enhance areas of woodland on the site through management actions. This will result in a better quality, more accessible and more resilient woodland in the long term.</p>
	<p>New planting on the site will provide a biodiverse mix of native pioneer and climax species. Suitable species selection in the new woodland areas also means that the woodland will be resilient to extreme climate change events and less susceptible to windthrow and pests.</p>
	<p><b>Operational Phase</b></p>
	<p>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.</p>
	<p>An appropriate speed limit (10mph or less) to be applied to all traffic.</p>
	<p>Visitor management facilities/entrance area to incorporate suitably sized and located waste and recycling receptacles, to be combined with appropriate collection and transportation regimes.</p>
	<p>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.</p>
	<p>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.</p>
	<p>Provision of information/ environmental education boards regarding woodland resource.</p>
	<p>Annual vegetation and protected species surveys.</p>
	<p>Much of the woodland has been unmanaged for a considerable time and has degraded as a result. The proposed development presents the opportunity for the woodland to be positively managed. This will result in a more resilient and biodiverse woodland structure and more accessible to the public. In consultation with stakeholders, managers, and statutory authorities, a Woodland Management Plan will be finalised and adopted for each character area, based on the suite of management plan templates drawn up by</p>

EIA Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	Forestry and Land Scotland, and will include: a clear and concise description of the woodland(s); a long-term vision for the woodland; the objectives of management; management proposals for the next ten years; and a mechanism for regular and future review of these.
<b>Chapter 7 – Noise and Vibration</b>	<b>Construction Phase</b>
	A Construction Environmental Management Plan (CEMP) will be prepared prior to construction. Further mitigation is not expected.
	<b>Operational Phase</b>
	The level of significance of noise impact within the current masterplan is minor. 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 11.
<b>Chapter 8 – Air Quality</b>	<b>Construction Phase</b>
	Taking account of proposed embedded mitigation measures, the assessment predicts that no significant effects on air quality are considered likely. No further mitigation, compensation or enhancement measures are therefore required or proposed.
	<b>Operational Phase</b>
	Not Required.
<b>Chapter 9 – Ground Conditions and Geology</b>	<b>Construction Phase</b>
	<p>Additional intrusive investigation will require to be undertaken in specific localised areas to inform detailed design and delineate contamination. The results will be assessed in the context of the detailed masterplan and, if required, a remediation strategy will be developed:</p> <ul style="list-style-type: none"> <li>▪ If required, remediation is likely to comprise localised excavation of contaminated soils and / or capping with clean material to present a barrier between contamination and receptors;</li> <li>▪ In the case of proposed buildings or areas of hardstanding, the barrier will be integral to the design of the new development; and,</li> <li>▪ Further intrusive investigation may be required in within and around the derelict buildings in the Woodbank House area to determine the potential for contaminants of concern including asbestos and PAHs.</li> </ul> <p>It is understood that the existing relic buildings will be renovated to form apartment accommodation.</p>
	<b>Operational Phase</b>
<b>Chapter 10 – Water, Hydrology and Flood Risk</b>	<b>Construction Phase</b>
	<p>Further mitigation to be included in CEMP.</p> <p>As noted in Section 10.6, the commitment to develop and implement a CEMP for the construction phase of the proposed development is treated an embedded mitigation measure, as are the provision of certain standard information and environmental management measures within the CEMP (refer to Section 10.6). Over and above this, the assessment in this ES chapter has identified the need for</p>

EIA Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<p>the following further mitigation measures to also be detailed within and implemented through the CEMP.</p>
	<p>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.</p>
	<p>An Environmental Clerk of Works (ECoW) will ensure that the CEMP and associated mitigation measures are implemented effectively.</p>
	<p>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.</p>
	<p><b>Surface Water Management.</b></p>
	<p>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 manage rainfall where, or adjacent to where, it lands.</p>
	<p>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 as noted above. 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.</p>
	<p>Clean runoff from vegetated areas or offsite will be kept clean and diverted around works to prevent mixing with silt-laden water.</p>
	<p>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.</p>
	<p>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.</p>
	<p>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 allowed within the CEMP.</p>
	<p>Routing of construction discharges should ideally be through at least three levels of SUDs to ensure that water quality of high sensitivity receptors is not adversely affected.</p>
	<p style="text-align: center;"><b>Earthworks</b></p>
	<p>Areas stripped of earth and vegetation will be kept to a minimum at any one time – this is in accordance with the GBR11 of CAR. 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.</p>

EIA Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	Any runoff from earthworks and stockpiles will be passed through appropriate construction SUDs measures prior to discharge to the water environment.
	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.
	Any dewatering will comply with GBR2 and GBR5. If abstraction exceeds 10m <sup>3</sup> 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.
	<b>Construction Tracks</b>
	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.
	<b>Oils, Fuels, Site Vehicles and Welfare Facilities</b>
	<p>The mitigation measures to minimise risk of contaminant release will be in line with the updated Controlled Activities (Scotland) Regulations which came 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:</p> <p>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:</p> <ul style="list-style-type: none"> <li>▪ The storage of oil in a portable container with a capacity of greater than 200 litres on site will not be permitted;</li> <li>▪ Multiple spill kits will be kept on site;</li> <li>▪ Drip trays will be used while refuelling; and,</li> <li>▪ Regular inspection and maintenance of vehicles, tanks and bunds will be undertaken.</li> </ul>
	Welfare facilities will include closed-system toilets, with disposal of foul drainage at a suitable off-site facility.
	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.
	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.
	<b>Operational Phase</b>

EIA Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<p>The proposed surface water and SUDs scheme (see Section 10.6) will require regular maintenance. This maintenance will include the regular debris clearing and cutting of grass of surface SUD 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 <a href="#">Appendix 10.3</a>.</p> <p>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.</p>
Chapter 11 - LVIA	<b>Construction Phase</b>
	No further construction stage mitigation proposed.
	<b>Operational Phase</b>
	No additional operational stage mitigation proposed.
Chapter 12 – Traffic and Transport	<b>Construction Phase</b>
	<p>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 construction activities within a 5m strip along waterfronts will be subject to specific consideration within a CEMP to be agreed with the LLTNPA prior to commencement.</p>
	Adoption of standard construction industry working hours for noise generating activities.
	<b>Operational Phase</b>
	<p><b>An Outline Travel Plan:</b> 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. Users of the holiday accommodation will receive travel plan options on booking and arrival.</p>
	<p><b>Monorail:</b> 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>
<p><b>Public Transport:</b> The WDC plans for the Station Square enhancements on Balloch Road between the proposed new Station Square development (Zone</p>	

EIA Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<p>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 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> <p>Discussions have been undertaken with ScotRail 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:</p> <ul style="list-style-type: none"> <li>▪ Shared-ticketing: whereby rail and attraction-tickets can be purchased simultaneously, incorporating some form of discount for the passenger/ visitor;</li> <li>▪ 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,</li> <li>▪ The potential for further studies into the need for enhanced rail services either by frequency and/ or selective station stopping to improve journey times.</li> </ul> <p><b>Lodge Parking:</b> 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 monorail for shorter local and site-internal trips.</p>
<p><b>Chapter 13 – Archaeology &amp; Cultural Heritage</b></p>	<p><b>Construction Phase</b></p>
	<p>Preferred mitigation option in to avoid or reduce impacts through design, or through precautionary measures such as fencing off heritage assets during construction works.</p>
	<p>A Conservation Management Plan will be produced by a suitably experienced historic buildings professional in consultation with HES.</p>
	<p>In terms of archaeology, an Archaeological Written Scheme of Investigation (WSI) will be produced and agreed with WoSAS.</p>
	<p>A programme of historic building recording (HBR) will be undertaken in connection with Woodbank House and its associated structures and estate grounds.</p>
	<p>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.</p>
	<p>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.</p>
	<p><b>Operational Phase</b></p>
<p>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 around the grounds of Woodbank House</p>	

EIA Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	describing and illustrating the history of the house and estate, whilst also providing information on the preservation and renovation process.
<b>Chapter 14 - Socio-Economics, Tourism, Recreation and Public Access</b>	<b>Construction Phase</b>
	None required.
	<b>Operational Phase</b>
	None Required.

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# Appendix A Site Location Plan