



West Riverside & Woodbank House, Balloch

Transport Assessment

On behalf of **Flamingo Land Ltd**



Project Ref: 35854 Rev: AA | Date: April 2018



Document Control Sheet

Project Name: West Riverside & Woodbank House, Balloch

Project Ref: 35854

Report Title: Transport Assessment

Doc Ref: Final Issue

Date: April 2018

	Name	Position	Signature	Date
Prepared by:	Brendan Reynolds Gordon Scott	Assistant Principal	Electronic	April 2018
Reviewed by:	Kirsty Davison	Associate	Electronic	April 2018
Approved by:	Douglas McDonald	Partner	Electronic	April 2018
For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved

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

Contents

1	Introduction	1
1.1	Purpose of the Report	1
1.2	Scoping.....	1
1.3	Report Structure	1
2	Site Location & Background	2
2.1	Introduction	2
2.2	Site Location.....	2
2.3	Background	3
3	Development Proposals	5
3.1	Quantum of Development	5
3.2	Access Proposals	6
3.3	Parking – Vehicular/ Cycle	7
4	Policy Review	8
4.1	Introduction	8
4.2	National Policy.....	8
4.3	Regional Policy.....	8
4.4	Local Policy	9
5	Existing Conditions.....	11
5.1	Introduction.....	11
5.2	Pedestrian Facilities	11
5.3	Cycling Facilities.....	13
5.4	Public Transport	14
5.5	Vehicular Access	16
5.6	Water-Based Transport	17
5.7	Access Opportunities & Constraints.....	17
6	Access and Parking Management	18
6.1	Introduction.....	18
6.2	Pedestrian & Cycle Access	18
6.3	Public Transport	18
6.4	Parking Provision.....	19
6.5	Access Points and Layout Considerations	21
7	Traffic Impact Assessment	24
7.1	Introduction.....	24
7.2	Junction Capacity Assessments.....	29
8	Outline Travel Plan.....	35
8.1	Introduction.....	35
8.2	Potential Measures.....	35
8.3	Pedestrian Initiatives	36

8.4	Cycle Initiatives.....	36
8.5	Public Transport Initiatives	37
8.6	Car Sharing Initiatives	38
8.7	Implementation	38
9	Summary & Conclusions.....	39

Figures

Figure 2.1	Site Location Plan	3
------------	--------------------------	---

Tables

Table 5.1	Train Services Summary	14
Table 5.2	Bus Services Summary	15
Table 6.1	NRDG Parking Standards	20
Table 7.1	Proposed Development Land Uses, Trip Rates and Trip Generation.....	26
Table 7.2	A82 Stonymollan Roundabout Threshold Assessment.....	29
Table 7.3	Ben Lomond Way/ Loch Lomond Shores Roundabout (Internal)	30
Table 7.4	Ben Lomond Way, Old Luss Road, Balloch Road Roundabout.....	31
Table 7.5	A811, Ben Lomond Way Roundabout.....	31
Table 7.6	A82/ A811 Stonymollan Roundabout	32
Table 7.7	A811/ Carrochan Road Roundabout.....	32
Table 7.8	Pier Road/ Balloch Road Priority.....	33
Table 7.9	Balloch Road/ Drymen Road/ Carrochan Road Priority	33
Table 7.10	Drymen Road/ A811 Stirling Road Priority.....	34

Appendices

Appendix A	Scoping Note & Correspondence
Appendix B	Parameters Plan
Appendix C	Survey Specification
Appendix D	TRICS Outputs
Appendix E	Network Flow Diagrams
Appendix F	ARCADY & PICADY Outputs

1 Introduction

1.1 Purpose of the Report

- 1.1.1 Peter Brett Associates LLP (PBA) was commissioned by Flamingo Land Ltd to undertake a Transport Assessment (TA) in support of a Planning Permission in Principle (PPiP) application for a development at West Riverside and Woodbank House, Balloch, Loch Lomond.
- 1.1.2 The proposed development will be sited at the West Riverside and Woodbank House site, located to the west of Balloch riverside and village, at the southern end of Loch Lomond, West Dunbartonshire.

1.2 Scoping

- 1.2.1 PBA has liaised with West Dunbartonshire Council (WDC) Road Officers and Transport Scotland (TS), with respect to the scope of this TA. Preliminary scoping was undertaken with WDC and TS during the preparatory stages of the Proposal of Application Notice (PAN), submitted in October 2017. As the development proposals have evolved, more detailed Scoping was undertaken with both TS and WDC to confirm the assessment parameters of this TA.
- 1.2.2 As such, this TA has been prepared in accordance with this agreement, and the form of this report follows that which was set out in a Scoping Note, agreed with WDC Road Officers in October 2017 and TS in March 2018. The Scoping and Correspondence is included in Appendix A of this report.
- 1.2.3 This TA has been produced in accordance with good practice and developed with reference to the Scottish Government's 'Transport Assessment Guidance 2012'. Consideration has been given to both Scottish Planning Policy (SPP) and Planning Advice Note (PAN) 75 in demonstrating that the proposals constitute sustainable development.

1.3 Report Structure

- 1.3.1 This TA report is structured as below:
- Chapter 2 – Site Location & Background;
 - Chapter 3 – Development Proposals;
 - Chapter 4 – Policy Review;
 - Chapter 5 – Existing Conditions;
 - Chapter 6 – Access & Parking Management;
 - Chapter 7 – Traffic Impact Assessment;
 - Chapter 8 – Outline Travel Plan; and
 - Chapter 9 – Summary & Conclusions.

2 Site Location & Background

2.1 Introduction

2.1.1 West Riverside is a 44 acre site comprised mainly of woodland and grassed areas. It is located on the south west bank of Loch Lomond at Balloch in West Dunbartonshire within the Loch Lomond & Trossachs National Park. Often considered the gateway village to the LLTNP, Balloch is an accessible location just off the main Glasgow to West Highlands road (A82) and readily accessible from Stirling to the east, via the A811. Balloch Rail Station is also served by a half hourly rail service and a bus station operates adjacent to the village centre.

2.2 Site Location

2.2.1 The West Riverside and Woodbank House sites are adjacent but separate sites located to the west of Balloch riverside and village, at the southern end of Loch Lomond, West Dunbartonshire.

2.2.2 The West Riverside area of the site is formed from the boundary with the west bank of the mouth of the River Leven as it opens to Loch Lomond to the north, and surrounds the Loch Lomond Shores area and residential properties of Clairinsh in west Balloch. The Woodbank House site is located further west of the main site to the west of Old Luss Road, and accommodates the former Woodbank House constructed in circa 1775, which went on to become the Woodbank Hotel (1930s) and then the Hamilton House Hotel (1979). The house was severely damaged by fire in 1996 and has remained in a ruinous condition since.

2.2.3 Balloch is a small village located to the south of Loch Lomond and considered a gateway village to the wider Loch Lomond and Trossachs National Park, whilst located in the West Dunbartonshire Council (WDC) authority area. The village is home to a local population of circa 6,090¹ and, following the opening of Loch Lomond Shores in 2002, is a popular destination for various retail, commercial, tourism and leisure activities. Lomond Shores includes an anchor House of Fraser store amongst other retail offers, and includes the Sea Life Centre, Bird of Prey Centre, Tree Zone and hosts various farmer's markets, food shows and events. Located immediately adjacent to Loch Lomond, the "Shores" area offers a host of water-based sports and activities.

2.2.4 Balloch is located to the north of the Vale of Leven, and configured around the River Leven for the extents of the village, connected to the smaller town of Jamestown and, further south, Alexandria and onwards to Dumbarton.

2.2.5 Balloch Road and Drymen Road constitute the main east-west access road through the village for local-access purposes, albeit the A811 to the south of this route, is the more strategic route for east-west movements by-passing the village centre: this provides access to local villages towards Stirlingshire in the east, and connects with the A82 Trunk Road to the west. The A82 is located along the western peripheral extents of Balloch and is the strategic route for journeys to the north, including locations such as Crianlarich, Oban and Fort William. To the south, the A82 continues through Dumbarton, Milton and onwards towards the Erskine Bridge and Glasgow.

2.2.6 Local access to Balloch from the surrounding towns of Alexandria on the west of the River Leven is via Luss Road (B857). From the towns of Jamestown, residential areas of Bonhill and surrounding environs to the west of the River Leven, local access to Balloch is via Carrochan Road (A813) which also connects to the A82 to the south at the Lomondgate Roundabout and/or Barloan Roundabout, Dumbarton.

2.2.7 Figure 2.1 below, illustrates the site location:

¹ Source: <https://www.citypopulation.de/php/uk-scotland.php?cityid=S19000677> (2015)

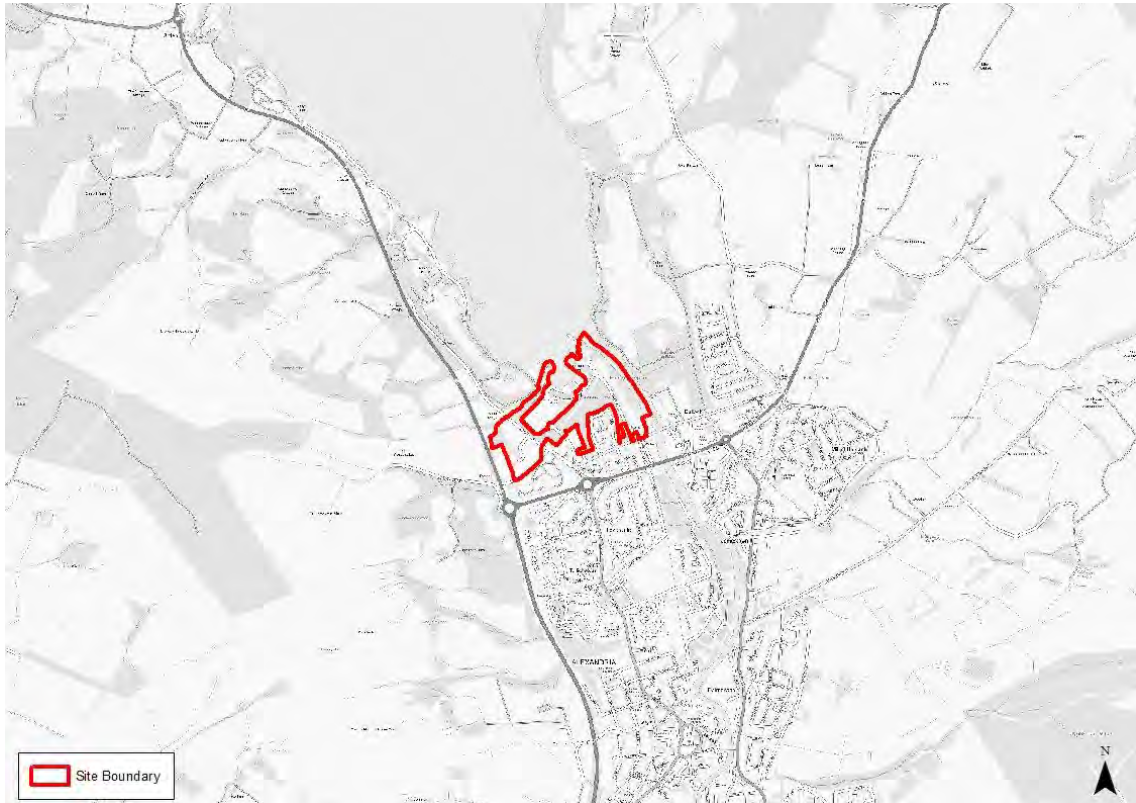


Figure 2.1 Site Location Plan

2.3 Background

2.3.1 The West Riverside site was promoted by Scottish Enterprise (SE) and Loch Lomond & Trossachs National Park (LLTNP) as a tourism and leisure-based development opportunity. The key aim for SE at the time, was to secure creation of a quality-led destination that improves connectivity between Loch Lomond Shores and Balloch Village.

2.3.2 SE objectives for the West Riverside site are grouped and listed under the following two headings:

Economic Development

2.3.3 To strengthen Lomond Shores/ Balloch as a tourism destination by:

- Extending the range of quality activities open to visitors;
- Broadening and improving the quality of food and beverage provision;
- Encouraging additional overnight stays in the Park; and
- Encouraging year-round activity (outside peak seasons).

Design

- 2.3.4 In keeping with the waterfront location in the National Park, the development requires to adopt a high standard for design and specification through:
- The use of quality materials which are in keeping with the wider built and natural environment;
 - A high level of integration between different uses;
 - Public realm that invites and encourages footfall between Balloch and Loch Lomond Shores;
 - Retaining and enhancing access to the River Leven footpath; and
 - Retention of the former station buildings.
- 2.3.5 Flamingo Land Ltd secured the rights to develop the site in late 2016. Development of the West Riverside site is bound to SE's objectives for economic development and design, whilst the Woodbank Site is owned outright by Flamingo Land Ltd.

3 Development Proposals

3.1 Quantum of Development

3.1.1 The proposed development subject to the PPIP application is comprised of two main site elements: West Riverside and Woodbank House. The Woodbank House site will be accessed separately and treated as a standalone entity from the main West Riverside site with respect to parking provision.

3.1.2 The West Riverside and Woodbank House site is intended to be redeveloped for a variety of commercial, leisure and tourism-related uses as outlined in the appended Parameters Plan (Appendix B). The items listed below constitute the development uses which will be assessed in the TA:

- Zone A – Station Square
 - Brewery incorporating 300sqm pub;
 - Restaurant 150sqm;
 - Youth Hostel 32 beds;
- Zone B – Riverfront
 - Forest lodges 43;
- Zone C – Pierhead
 - Apart Hotel 60 beds including restaurant/ bar 150sqm;
 - Waterpark 2,500sqm;
 - “Iconic Visitor Attraction” and overspill car park (subject to future planning);
- Zone D – Drumkinnon Wood & Bay
 - Woodland visitor attractions, incorporating a children’s play area and adventure themed rides and walkways 1.78 hectares;
 - Forest lodges 32;
 - Staff and service area 900sqm;
 - Boathouse accommodation;
- Zone E – Woodbank
 - Residential 20 units;
 - Forest lodges 28;
- Ancillary Uses
 - New car parking 256 spaces; and
 - 74 relocated/ reconfigured spaces at the Pierhead.

3.1.3 The other development uses included within the Parameters Plan and not listed above, will not be included in TA on the basis that as standalone entities, they would not constitute a change to the existing trip characteristics of the existing and/ or Loch Lomond Shores area. These include:

- Zone A – Station Square
 - Amphitheatre – temporary tented structure;
 - Refurbished tourist office and enhanced public square;
- Zone B – Riverfront
 - Picnic, barbeque and play areas and path network;
 - Existing woodland retained and managed and existing path network;
- Zone C – Pierhead
 - Visitor Hub (indoor rides, storage and office uses). This is not being assessed since the use is envisaged primarily as an information hub, with lockers for visitors and ticketing/ general ancillary uses. However, we are assessing the staff and service area as office use which will produce a robust assessment in trip generation terms. Moreover, the staff trips for other discrete land uses throughout the site, will be captured in the TRICS data trip generation numbers;
 - Multi-user public realm;
- Zone D – Drumkinnon Wood & Bay
 - Targeted development to retain and improve existing woodland;
 - Path network;
 - Site entrance building (security, management and ticketing); and
- Zone E – Woodbank
 - Façade retention of listed Woodbank House as landscape feature.

3.1.4 The above development schedule will be accompanied by various supporting transport and development infrastructure as well as a range of ancillary uses which will complement other development proposals in the vicinity including those for Sweeney Cruises and Maid of the Loch.

3.2 Access Proposals

3.2.1 The proposed development site will be accessed from existing access junctions on the local road network as indicated by the Parameters Plan as appended (Appendix B) to this report. This indicates that the following junctions will provide access to the site:

- Pier Road/ Balloch Road priority junction – will retain its existing function of providing access to the Pierhead, Maid of the Loch, Slipway to Loch Lomond, Lomond Shores and the proposed Zone C Pierhead (Aparthotel; Water Park; Restaurant Rides; & Visitor Hub);
- Ben Lomond Way – the existing priority junction with the current Loch Lomond Shores overspill parking will retain its existing operational function and provide access to overspill parking; and

- Woodbank House/ Old Luss Road priority junction – will retain its existing function of providing access to the Woodbank House site generally, and will be upgraded and formalised to reflect current junction geometry design parameters.

3.2.2 An Access and Parking Management Strategy will be produced to control arrivals and departures for those elements of the development with a check-in/ registration and/ or ticketing function, such as the: budget accommodation; woodland lodges; aparthotel; and the waterpark and the woodland visitor attractions, as far as reasonably practical. It is recognised that there will be multiple shared-uses between the existing Loch Lomond Shores activities and those currently proposed, and not all parking can be controlled and/ or managed, subject to trip purposes and destination/ attraction choices. Access and Parking Management is covered in further detail in Chapter 6, below.

3.3 Parking – Vehicular/ Cycle

3.3.1 Parking provision for the development will be provided in accordance with SCOTS National Roads Development Guidelines, as agreed with West Dunbartonshire Council, and in keeping with development standards within the Loch Lomond and Trossachs National Park and West Dunbartonshire authority area.

4 Policy Review

4.1 Introduction

4.1.1 This chapter summaries the relevant transport policies which have been considered in the preparation of this Transport Assessment in support of the development at West Riverside and Woodbank House, Loch Lomond.

4.2 National Policy

Scottish Planning Policy

4.2.1 The Scottish Planning Policy (SPP) was published in June 2014 and sets out the Scottish Government's policy on nationally important land use matters. Planning Advice Note 75 (PAN 75) Planning and Transport provides supporting information to the transport elements of the new SPP.

4.2.2 The policy principles of the SPP include that the planning system should support patterns of development which:

- Optimise the use of existing infrastructure;
- Reduce the need to travel;
- Provide safe and convenient opportunities for walking and cycling for both active travel and recreation, and facilitate travel by public transport;
- Enable the integration of transport modes; and
- Facilitate freight movement by rail or water.

4.2.3 The document stipulates that development plans should take account of the relationship between land use and transport, particularly the capacity of the existing transport network, environmental and operational constraints, and proposed or committed transport projects.

4.2.4 Plans should identify active travel networks and promote opportunities for travel by more sustainable modes, and facilitate integration between transport modes.

4.2.5 Furthermore, the document states that significant travel generating uses should be sited at locations which are well served by public transport, subject to parking restraint policies, and supported by measures to promote the availability of high quality public transport services.

4.3 Regional Policy

A Catalyst for Change – The Regional Transport Strategy for the West of Scotland 2008-2021, Strathclyde Partnership for Transport (SPT)

4.3.1 SPT is the Regional Transport Partnership for west central Scotland, encompassing 12 local authorities including West Dunbartonshire Council. The Regional Transport Strategy (RTS) influences all future plans and activities of the organisation and informs future national and local transport strategies.

4.3.2 The RTS sets out a strategic vision to provide “a world class sustainable transport system that acts as a catalyst for an improved quality of life for all”.

4.3.3 The vision includes six strategic objectives to achieve this, including:

- Safety and Security: To improve safety and personal security on the transport system;
- Modal Shift: To increase the proportion of trips undertaken by walking, cycling and public transport;
- Excellent Transport System: To enhance the attractiveness, reliability and integration of the transport network;
- Access for All: To promote and facilitate access that recognises the transport requirements of all;
- Environment and Health: To improve health and protect the environment by minimising emissions and consumption of resources and energy by the transport system; and
- Economy, Transport and Land-use Planning: To support land-use planning strategies, regeneration and development by integrating transport provision.

4.4 Local Policy

Loch Lomond & the Trossachs National Park - Local Development Plan 2017-2021

4.4.1 Balloch and the countryside to the west and east of Loch Lomond are covered by Loch Lomond and the Trossachs National Park, and not the West Dunbartonshire Planning Authority.

4.4.2 The Local Development Plan replaces the former Local Plan and covers the period 2017 to 2026. The main policies considered relevant to the proposed development are listed below.

- Overarching Policy 1: All development should contribute to the National Park being a low carbon place by connecting well to public transport and safe pedestrian/cycle access where possible;
- Overarching Policy 2: Development proposals should not conflict with nearby land uses and where relevant, must address the following requirements:
 - Sustainable Travel: support active travel choices where possible (prioritise walking, cycling and public transport over car use) and transport infrastructure; and
 - Safe Access and Parking: provide safe road access and appropriate parking provision.

4.4.3 The Plan also contains several specific transport policies:

- Safeguarding sites to improve the transport network;
- Promoting sustainable travel and improve active travel options; and
- Impact assessment and design standards of new development.

West Dunbartonshire Local Transport Strategy 2013 - 2018

4.4.4 The West Dunbartonshire Local Transport Strategy sets out of the objectives, strategy and action plan for transport in the West Dunbartonshire area from 2013 to 2018. The six objectives of the document have been identified as:

- Economy: to support a vibrant and sustainable local economy that stimulates business development and economic growth;

- Environment: to support West Dunbartonshire as an attractive and sustainable place to live, work and visit;
 - Integration: to enhance integration and efficiency of transport networks, infrastructure and services;
 - Accessibility & Social: to facilitate access to services and opportunities, promote physical and mental well-being, prevent ill health and reduce inequality;
 - Safety: to support communities in which people feel safe to live, work and enjoy their leisure time; and
 - Maintenance: to maintain the transport network to a high standard that ensures it is safe and fit for purpose.
- 4.4.5 To deliver on these objectives, the Council has developed a framework for the LTS that seeks to draw upon the benefits offered by being in a geographically unique position (close to the Glasgow conurbation and Loch Lomond & the Trossachs National Park, whilst also maintaining a number of distinct local towns) and delivering local improvements. This framework provides the context for the interventions defined in the action plan.
- 4.4.6 The LTS has also established three 'policy pillars' to act as a guiding principle for its implementation; including Sustainable Transport, Access for All, and Supporting Development & Economic Activity.

5 Existing Conditions

5.1 Introduction

5.1.1 This section provides details on the existing access and movement environment along key routes to and within the proposed development area. The information set out herein, is based upon PBA's local knowledge and experience of the study area and numerous site visits undertaken throughout Spring/Summer 2017.

5.2 Pedestrian Facilities

5.2.1 The proposed development site is accessible by foot along the existing main vehicular access routes to the site, as well as the NCN 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. This section considers the following routes:

- Pier Road;
- Ben Lomond Way;
- Lomond Shores Internal Routes;
- Old Luss Road; and
- John Muir Way.

Pier Road

5.2.2 Pier Road is an un-adopted private road providing primarily vehicle access to the Pierhead area (northern extents) of the proposed development site, where there is an operational slipway into Loch Lomond. As such, this route provides for functional access to the slipway and associated activities and, whilst a relatively direct route from Balloch into the site, the lack of footways on the route combined with dense brush and tree cover, is such that it has limited function as a walking route due to perceived safety and security issues. There is no lighting provided on this route with the exception of the southerly extents adjacent to a handful of residential properties and the interface with Balloch Road.

Ben Lomond Way

5.2.3 Ben Lomond Way is the main vehicular access route into the Lomond Shores site from the western extents of the West Riverside component of the site. It provides an "Avenue-esque" connection from Balloch Road into Lomond Shores, as a function of strong landscaping defined by Beech hedges and a tree-lined, remote pedestrian route into Drumkinnon Woods and further north into the immediate Lomond Shores site. This is a well-lit, circa 2m wide pedestrian route and is favoured by many local people accessing the site and/ or the network of informal woodland trails through Drumkinnon Woods. This route links continuously with footways on Balloch Road and, whilst there are no controlled pedestrian crossing points, there is a dedicated, dropped-kerb with tactile paving to the east of Ben Lomond Roundabout. Further, there is a dedicated crossing location on Ben Lomond Way itself, just north of Ben Lomond Roundabout, providing continuous pedestrian access to Old Luss Road (north and south).

Loch Lomond Shores Internal Routes

5.2.4 Much of the Lomond Shores site is pedestrianised and facilitates movements on foot for all nature of users through large areas of the site. The main pedestrianised areas, remote from vehicular routes, include: around the "bay" and beached area to the west of the Pierhead area;

to the rear and frontage of the commercial units; the route which skirts the north-western boundary of the car park and connects to Old Luss Road to the west; and a network of raised board-walk paths through woodland to the north of the Lomond Shores main area.

- 5.2.5 Notwithstanding the board-walk paths, the main pedestrianised areas are generally wide and well surfaced and capable of accommodating a reasonable volume of two-way pedestrian flow. These are also well lit. At a minimum, for example to the rear of the retail units, the footway is circa 2m wide.
- 5.2.6 The board-walk paths through the woodlands to the north of the site are raised walk way of circa 2m wide and textured to avoid slipping hazards. Some of the routing is tight and angular, but provides reasonable opportunity for passing.
- 5.2.7 Ben Lomond Way – internal to the Lomond Shores area – provides a continuous 2m footway along the southern side of the road, connecting the Ben Lomond Way/ Lomond Shores access roundabout with the Pierhead area of the site, and Pier Road. The route is lit on the northern side, where there is no continuous footway, albeit sections of the route are paved on the north side to facilitate access into the main pedestrianised area from a coach drop off area and a layby for disabled-users drop-off. CCTV security cameras are located on the route and orientated on the link into the main pedestrianised area of Lomond Shores and the service access area.
- 5.2.8 A dedicated, pedestrian crossing with barriers on the approach to the carriageway, is located to the south west of the commercial units, to allow onward connection to Drumkinnon Woods and the main entrance footway in to the site, on Ben Lomond Way.

Old Luss Road

- 5.2.9 Old Luss Road is located to the east of the Woodbank House site and to the south of the Lomond Shores area. Access from Lomond Shores to Old Luss Road is provided by the internal remote pedestrian footway to the north of the Lomond Shores car park: wooden bollards prevent vehicle access from Old Luss Road. Old Luss Road provides for onward pedestrian connections to the west towards the more rural Upper Stonymollan and John Muir Way and, to the east, the suggested cycling section for the John Muir Way.
- 5.2.10 The low volumes of traffic on the route, as a result of a “no-through-route” to vehicles to the north, gives rise to the route being used as a pedestrian link between Balloch and Cameron House and Duck Bay Marina to the north. A continuous footway is provided on the eastern side of the road, albeit foliage growth and lack of maintenance is such that this is largely overgrown and rough underfoot. This is not noted to be a deterrent to pedestrians who continue to make use of the relatively wide and reasonably surfaced carriageway, for walking (and cycling). There is no street lighting along the section of route between the Lomond Shores site and where the carriageway terminates to the north.
- 5.2.11 The southern extents of Old Luss Road provide reasonable quality, circa 2m wide and lit footways connecting to Ben Lomond Road Roundabout and Ben Lomond Way on the east. Lighting is more extensive on the east side of Old Luss Road, but with some lighting provision on the west side at the more southerly extents of the road.

John Muir Way

- 5.2.12 The John Muir Way is a coast to coast predominantly rural route for walkers (and cyclists) which stretches 134 miles between Helensburgh in the west, through to Dunbar on the east coast of Scotland. The route is divided into 10 sections, with the Helensburgh to Balloch and Balloch to Strathblane sections, being of relevance to the proposed development site.
- 5.2.13 The John Muir Way comes into the proposed development site’s area of influence, via Upper Stonymollan, over the A82 footbridge and linking to a single-track access road which skirts the

southern boundary of the Woodbank House site. At the interface of this route with Old Luss Road, walkers are signed north towards the pedestrian link from Old Luss Road in to the Lomond Shores site. Thereafter, the route follows the internal pedestrian routes of Lomond Shores towards the west bank of the River Leven and follows this route south to Balloch Bridge. From here the route enters Balloch Castle Country Park on the east bank of the River Leven and meanders north and eastwards through Boturich, intercepts the A811 Stirling Road, and on towards Auchencarroch Road (providing connections to Gartocharn, Croftamie and Drymen).

5.3 Cycling Facilities

NCN Route 7

- 5.3.1 National Cycle Network (NCN) Route 7 links Sunderland in England to Inverness in the north. The 601mile route in its entirety forms part of the wider Lochs & Glens (north) cycle route which passes through two national parks - Loch Lomond & The Trossachs and Cairngorms. The route leaves Glasgow by following the River Clyde to Dumbarton and then heads to Inverness via Aberfoyle, Callander, Killin, Pitlochry, Kingussie, Aviemore and Carrbridge.
- 5.3.2 In relation to the proposed development site, NCN Route 7 follows the west bank of the River Leven and approaches the proposed development site from the south, via Sweeney's Cruises adjacent to Balloch Bridge. There is a main dedicated path – shared with walkers – but an alternative meandering unsurfaced route, which takes cyclists adjacent to the west river bank, through trees and scrub. This links directly to the Pierhead area and onwards to Loch Lomond Shores main.

West Loch Lomond Cycle Way

- 5.3.3 The West Loch Lomond Cycle Way starts at the Visit Scotland Visitor Centre in Balloch, adjacent to Balloch Bridge and Sweeney's Loch Cruises. It's an "easy" waymarked route suitable for most abilities of cyclist and follows part of the John Muir Way, along the west river bank of the proposed development site area. From the Pierhead area, cyclists are directed through the off-road shared pedestrian routes through Lomond Shores and west wards to Old Luss Road via the wide remote foot and cycleway to the north of the car park. From Old Luss Road, cyclists are directed along a route which skirts Loch Lomond side and, from Arden roundabout can continue adjacent to the A82 (off-road) or through an alternative route through the Carrick Golf Course. A short on-road section through the former Luss access road, takes cyclists through to Luss, thereafter, the route remains off-road as far north as Tarbet.

General Cycle Network

- 5.3.4 There are no other dedicated off-road cycle routes within the local urban area. Given the nature of the location and relatively low number of pedestrians, most routes highlighted above for the pedestrian environment will be used by both walkers and cyclists, with mutual acceptance of users on both parts. On-road cycle routes are limited, noting that the approach to the pedestrian crossing facility on Ben Lomond Way, appears to dedicate both lanes of the carriageway, to cycle priority. This is not noted elsewhere in the area and is therefore assumed to have been provided on the basis of this section of route being provided primarily for service vehicle access (and, potentially, relatively lower levels of vehicles). There is no continuum of this route noted elsewhere on the local network.
- 5.3.5 In the wider locality, including John Muir Way to the west and off-road routes through Whinny Hill Woods and Boturich to the east, routes are generally used by both walkers and cyclists – particularly, local mountain bikers and leisure cyclists.
- 5.3.6 Cyclists are able to use the recommended walking route for the John Muir Way as described above, however, an alternative cycling section is suggested on the Section 1 route maps which follows the NCN Route 7 trail. This remains an off-road section and directs cyclists towards the Cross Keys roundabout on the B832, and then east to Arden Roundabout (A82). Here the route

links with a shared foot and cycle way, which skirts the A82, the west bank of Loch Lomond and continues south to link with Old Luss Road. From here, cyclists and walkers, can tie back into the dedicated route at Lomond Shores and continue west and south.

5.4 Public Transport

Balloch Railway Station

5.4.1 Balloch railway station is located approximately 100 metres to the south of the proposed development on Tullichewan Road. The station can be accessed via the established footpaths in the surrounding area. Sheltered cycle storage is available with 22 bicycle parking spaces. On-street parking is available from Tullichewan Road.

5.4.2 Train services run half hourly on Monday to Saturday from Balloch to Airdrie via Glasgow Queen Street and Singer. Sunday services run via Yoker and Glasgow Central and then alternately to Motherwell via Whifflet and to Larkhall on an hourly basis.

5.4.3 Table 5.1 provides a summary of existing train services at Balloch Rail Station.

Table 5.1 Train Services Summary

Service	Destination	Journey Time (minutes)	Frequency (Services per hour)
Monday to Saturday	Glasgow Queen Street	47	2
Monday to Saturday	Airdrie via Glasgow Queen Street	74	2
Sunday	Glasgow Central	48	2
Sunday	Larkhall	82	1
Sunday	Motherwell via Glasgow Central	83	1

Bus Services

5.4.4 Bus stops are located on both sides of Balloch Road adjacent to the proposed southern site boundary. Bus stops are serviced by the number 207 bus (McColl's), 305 (Garelochhead Minibuses and Coaches) and the number 309 (McGill's). The number 207 provides an hourly service between Balloch and Bonhill via Rosshead. The 305 bus service provides a regular service between Alexandria and Luss and the number 309 runs between Balmaha to Alexandria or Bonhill every 90 minutes.

5.4.5 Table 5.2 provides a summary of existing bus services in the vicinity of the development.

Table 5.2 Bus Services Summary

Service	Operator	Route	Nearest Bus Stop	Journey Time (minutes)	Frequency (Services per hour midweek)
1 (The One)	First Greater Glasgow	Balloch – Glasgow City Centre	Balloch Bus Terminus	105	2
206	First Glasgow	Balloch - Westcliff	Balloch Bus Terminus	48	4
207	McColl's	Balloch - Bonhill	Loch Lomond Shores	27	1
305	Garelochhead Minibuses and Coaches	Alexandria - Luss	Loch Lomond Shores	16	1
		Luss - Alexandria	Loch Lomond Shores	11	1
309	McGill's	Old Bonhill - Balmaha	Balloch	21	<1
		Balmaha - Bonhill	Loch Lomond Shores	13	<1
316A*	Garelochhead Coaches	Coulport - Alexandria	Loch Lomond Shores		1 morning service Monday - Saturday
863**	First Greater Glasgow	Balloch – Dumbarton	Haldane, Balloch	1	5 evening services Monday - Friday
874***	First Greater Glasgow	Balloch - Dumbarton	Balloch Bus Terminus	11	6 evening services Monday - Saturday

* Service from Coulport – Loch Lomond Shores (LLS) arrives at 0755 Monday – Friday and service from Garelochhead – Loch Lomond Shores arrives at 0855 on Saturday.

** Four morning services from Dumbarton – Balloch (Monday – Friday) and four evening services from Balloch – Dumbarton (Monday – Friday).

***Morning services only run from Dumbarton – Balloch (Monday – Sunday) whilst evening services only run from Balloch – Dumbarton (Monday – Saturday).

5.5 Vehicular Access

5.5.1 This section outlines the strategic and local vehicular access routes to the site.

A82 Trunk Road

5.5.2 The A82 runs north – south and is one of two trunk roads through the National Park which is managed by Transport Scotland and therefore is one of the main access routes to the site. It provides access from the centre of Glasgow to Inverness via Fort William. For the most part, this route has a 60 mph speed limit. In addition, there are proposals in place to upgrade the section between Tarbet and Inverarnan which aims to reduce congestion and improve traffic flows. The National Park states that travel from central Glasgow would take approximately 40 minutes using the A82.

A811 Stirling Road

5.5.3 In addition to the A82, this trunk road provides key access through the National Park. It links Stirling in the east to the A82 in the west at Balloch, via Drymen. As a result, it provides a connection north to Perth, Dundee and Aberdeen. Generally, the speed limit is 60 mph. The National Park notes that car journeys from Stirling are approximately 50 minutes using this route.

B857 (Renton Road / Bank Street / North Main Street / Luss Road)

5.5.4 The B857 connects the A82 in the south to the A811 Stirling Road in the north, running through Renton, Alexandria and Balloch parallel to the A82 and A813. As a result of its built-up surroundings, the B857 has a speed limit of 30 mph with 20mph speed limits in place adjacent to main school routes.

Carrochan Road (A813)

5.5.5 The A813 links the A82, north of Dumbarton at Bellsmyre, to Drymen Road in Balloch crossing the A811. It runs north – south on the east side of the River Leven, parallel to the A82 and B857. The speed limit on this route is predominantly 40 mph speed limit, with sections of 30 mph in built-up areas.

Balloch Road / Drymen Road

5.5.6 This road runs east – west, parallel to the A811 Stirling Road, through Balloch from A811 Stirling Road in the east to the roundabout with Old Luss Road / Ben Lomond Way in the west, crossing River Leven. It has a speed limit of 30 mph.

Ben Lomond Way

5.5.7 This route provides access to the Loch Lomond Shores site from the northern arm of the roundabout with Old Luss Road / Ben Lomond Way and has a speed limit of 30 mph. It runs north west from the roundabout to an internal roundabout at Loch Lomond Shores which provides access to the main car parks, before running north east towards Balloch Pier.

Pier Road

5.5.8 This is a private road which runs northwards from Balloch Road to Ben Lomond Way and provides direct access to Pierhead. Signage at the Balloch Road junction states that, “Vehicles using this road do so at their own risk”, due to its private status. It is assumed to have a 30 mph speed limit, albeit most of the road is not to adoptable standard.

5.6 Water-Based Transport

- 5.6.1 The Waterbus service operates on Loch Lomond and Loch Katrine, offering ten services which are used by cyclists and walkers. The Park offers this as a sustainable alternative to the car which can enhance the visitor experience. There is potential to build upon the success of the Waterbus with the opportunity to enhance integration as part of a wider tourism and/ or access strategy.
- 5.6.2 Loch Lomond services offer alternative connections between Balloch, Luss, Balmaha and Tarbet amongst others. Generally, these run between April and October, although seasonality varies between services.

5.7 Access Opportunities & Constraints

- 5.7.1 The following access and movement opportunities and constraints are noted with respect to the development proposals and how these may be refined/ informed at subsequent design stages:
- Balloch Station Square – streetscape improvements are proposed for Balloch Road which will better connect Balloch Rail Station with the existing Tourist Information Office and the Zone A Station Square development proposals. This presents an opportunity for collaborative working to develop a scheme which will achieve both WDC's objectives and the design requirements of the Zone A Station Square area of the development proposals. (see <https://www.sustrans.org.uk/balloch>);
 - ScotRail Abellio - discussions are ongoing with ScotRail Abellio to agree in principle the mutual benefits of promoting access to the development site by rail. Possible interventions are in very early developmental stages, and are described in further detail in Chapter 6, below; and
 - Sweeney's Cruises – a planning application has been submitted to Loch Lomond and the Trossachs National Park by Sweeney's Cruises. At the time of writing (early April 2018), it has not yet been determined (Ref. No: 2017/0373/DET). They consider that their existing facilities on the banks of the River Leven are no longer fit for purpose and propose to construct three new buildings (a two-storey office building, slipway enclosure/workshop building, and a boathouse with storage level above) and to install two new pontoons and a new access road. This presents an opportunity to ensure the Zone A Station Square proposals and access arrangements are optimised for both Sweeney's Cruises and the West Riverside development.

6 Access and Parking Management

6.1 Introduction

- 6.1.1 The proposed level of development is outlined in Chapter 3 of this report and illustrated in the appended Parameters Plan (Appendix B).
- 6.1.2 This chapter focuses on the measures required to support the development taking cognisance of the proposed nature of uses and anticipated future operation of the development within the context of the existing Loch Lomond Shores and other activities/ operations within the wider site.

6.2 Pedestrian & Cycle Access

- 6.2.1 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.
- 6.2.2 Bike hire is proposed as part of the Station Square and enhanced Tourist Information Office offering, which will further support internal movements by bike.
- 6.2.3 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.
- 6.2.4 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.
- 6.2.5 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.
- 6.2.6 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.

6.3 Public Transport

Rail

- 6.3.1 The proposed WDC plans for the Station Square enhancements on Balloch Road between the proposed new Station Square development (Zone A) and Balloch Railway Station, will help deliver enhanced access between the station and the proposed development site as well as the wider village of Balloch. It is also understood that revised 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.

- 6.3.2 Discussions have been undertaken with ScotRail Abellio to seek to agree in principle the mutual benefits of promoting access to the development site by rail. Whilst any interventions are still in early developmental stages, these are presently anticipated to include:
- Shared-ticketing: whereby rail and attraction-tickets can be purchased simultaneously, incorporating some form of discount for the passenger/ visitor;
 - The opportunity to promote the new West Riverside development as a destination, where branding/ wrapping the trains can be used as a marketing/ promotional incentive; and
 - The potential for further studies into the need for enhanced rail services either by frequency and/ or selective station stopping to improve journey times.
- 6.3.3 The development proposals also include incorporation of a mono-rail 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.

Bus

- 6.3.4 The existing bus service that operates through Loch Lomond Shores via Ben Lomond Way is presently intended to remain in operation with the proposed development, albeit discussions will be held with the operator once internal layout designs are progressed further.

6.4 Parking Provision

Vehicular Parking

- 6.4.1 As agreed with West Dunbartonshire Council, parking for the proposed development will be provided in accordance with SCOTS National Roads Development Guideline (NRDG) parking standards. These guidelines suggest that maximum standards should be used with respect to providing car parking in new developments.
- 6.4.2 Those standards which are proposed in the application of car parking provision calculations are included within Table 6.1, below.

Table 6.1 NRDG Parking Standards

Development Use	Quantum	Proposed Standard	Provision
Brewery incl. pub	300sqm	10 spaces/ 100sqm GFA	30 spaces
Restaurant	150sqm	1 space / 5sqm GFA	30 spaces
Youth hostel	32 beds	1 space/ 4 staff plus customer parking	8 spaces
Zone A – Sub-Total			<u>68 spaces</u>
Woodland Lodges (Riverfront)	43	1.5 spaces per lodge ²	65 spaces
Zone B – Sub-Total			<u>65 spaces</u>
Apart Hotel & Rest.	60 beds	1 space/ 2.5 beds	24 spaces
Water Park	600sqm	10 spaces/ 100sqm pool area	60 spaces
Iconic Visitor Attraction	TBC	Subject to future planning	-
Zone C – Sub-Total			<u>84 spaces</u>
Woodland Lodges (Drumkinnon)	32	1.5 spaces per lodge	48 spaces
Boathouse Accommodation	1 bed	1 space	1 space
Staff & Service Area	900sqm	1 space/ 20sqm	45 spaces
Zone D – Sub-Total			<u>94 spaces</u>
Residential units	20	3 spaces/ dwelling	60 spaces
Woodland Lodges (Woodbank)	28	1.5 spaces per lodge	42 spaces
Zone E – Sub-Total			<u>82 spaces</u>
Total Incl. Woodbank Site			<u>413 spaces</u>
Total at West Riverside			<u>311 Spaces</u>

- 6.4.3 For the purposes of the PPiP application, it has been assumed that the development proposals demonstrate self-sufficiency with respect to vehicle parking. That is, presently, no reliance is placed on the existing spare capacity at the Loch Lomond Shores (main or overspill car parks). Whilst the future operating ambition would see the parking for all woodland lodges, the luxury boathouse accommodation, staff parking and, potentially, parking for the Apart Hotel at Pierhead, being sited at the existing Loch Lomond Shores overspill parking area, the quantum of shared parking is still to be agreed with the existing Loch Lomond Shores proprietors.
- 6.4.4 The parameters plan indicates total parking provision of 256 new parking spaces plus 74 relocated/ reconfigured at Pierhead: this results in a total parking provision of 330 spaces across the site (excluding the Woodbank House site). This is disaggregated as follows:
- 109 spaces at the newly configured car park on Pier Road; and
 - 221 new parking spaces at the Pierhead.
- 6.4.5 As the detail of the proposals progress, and dialogue with the other Loch Lomond Shores proprietors continues, it is anticipated that parking locations will be reconfigured to allow effective, efficient and sustainable vehicle and access operations across the shared-sites.
- 6.4.6 As a result of the Zone A Station Square proposals replacing the existing West Riverside Car Park, WDC has requested that as a result of displaced parking, 44 Park & Ride (for rail) spaces should be provided within the newly proposed car park on Pier Road. These should be sited at

² Bespoke parking figure for all woodland accommodation based on provision of a mix of 1, 2 or 3 bedroom lodges.

the southern extents of the new Pier Road car park to provide convenient proximity to the rail station and reduce the need for on-street parking around the station and on Tullichewan Road. This level of provision is considered both achievable and compatible, given the nature of the proposed Station Square development uses (pub/ restaurant), which are largely expected to have a development/ parking demand peak outwith the commuting/ P&R demand period.

- 6.4.7 Consultation has been undertaken with WDC with respect to the Balloch Village Parking Proposals and, more specifically, the streetscape improvements proposed as part of the Station Square Proposals for Balloch Road. WDC has indicated that any future refinement of the streetscape proposals will be informed through collaborative working with the proposed developer, to develop a scheme which will achieve both WDC's objectives and the design requirements of the Zone A Station Square area of the development proposals. It is expected that this scheme will progress collaboratively between WDC, Sustrans and the developer.

Cycle Parking

- 6.4.8 In addition to the above vehicular parking standards, the proposed development will include cycle parking which at least meets the minimum recommended provision as detailed within Cycling by Design. The provision of convenient secure cycle parking and related facilities will be key to attracting and encouraging an uplift in cycling to, through and between the existing and proposed development site area. It is acknowledged that cycle parking demand varies greatly between different land user classes, however, it is proposed that each of the key zones within the site will include appropriate cycle parking.
- 6.4.9 Consideration will also be given to the nature of cycle parking, whereby for shorter cycling trips, standard Sheffield Cycle Stands will be provided at key hubs throughout the site. For longer-stay cycle parking, such as employee facilities or bike hire locations, sheltered and secure cycle parking will be provided. In addition, staff changing and showering facilities will be incorporated into staff and service facilities, to encourage the opportunities for staff to cycle to work.

6.5 Access Points and Layout Considerations

- 6.5.1 An access strategy for the site has been derived around the following key objectives:
- To optimise the use of sustainable modes to, through and from the site;
 - To optimise and enhance the use of existing walking, cycling and vehicular infrastructure;
 - To use the preferred road hierarchy for vehicular access to the site;
 - To reduce needless internal vehicular circulation within the site; and
 - To reduce unnecessary through-trips on Balloch Road and Drymen Road.
- 6.5.2 Pedestrian and cycle access improvements proposed for the site are described in Section 6.2, above.
- 6.5.3 The main access points to the site will be via Ben Lomond Way – the existing main access point to Loch Lomond Shores - and Pier Road, an existing, albeit secondary access point to Pierhead, Maid of the Loch and slipway activities. Woodbank House, as a standalone site, will be accessed via Old Luss Road and the reformation of an existing priority access junction.
- 6.5.4 Pier Road will be used for access to the newly proposed car park to the west of Pier Road, which is intended to cater for the land uses included within the Zone A Station Square proposals. Ben Lomond Way will be promoted as the main access point to the wider site to ensure strategic and site-bound traffic is removed from the local road network as soon as practicable.

- 6.5.5 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.
- 6.5.6 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 and/ or small coaches will be used to transport visitors and baggage to their holiday accommodation. This will reduce both unnecessary vehicular circulation at arrival and departure times but is also expected to reduce the use of cars for short-trips by guests throughout their stay: it will be more convenient to walk, cycle or use the mono-rail for shorter local and site-internal trips.

Deliveries and Servicing

- 6.5.7 The operational details for the proposed development land-uses will evolve during the latter detailed design stages, however, all buildings and access routes will be appropriately configured for operational service access for delivery and refuse collection vehicles, as necessary.
- 6.5.8 Certain land uses will be subject to their own servicing and delivery arrangements, however, many of these, such as accommodation, will be managed from the central staff and servicing area. It is intended that more strategic services and deliveries will access the staff and service area, from which smaller scale vehicles or buggies can dispatch goods throughout the site.
- 6.5.9 The residential development of the Woodbank House site will be designed in accordance with Designing Streets Principles and, once a preferred layout is identified, the internal route will be designed to ensure it can accommodate the manoeuvres of service vehicles.

Construction Traffic

- 6.5.10 During the construction period, it is anticipated that associated traffic flows will not compromise the efficiency of the existing road network. However, the following measures are recommended to further reduce the impact of the development traffic:
- The preferred routes for heavy goods vehicles (HGVs) to and from the site should be identified in advance and agreed with the local Roads Authority;
 - Tracking of mud from site entrances should be addressed by on-site wheel cleaning, or periodic brushing of the carriageway;
 - Efforts should be made to minimise dust and mud emissions generated from HGV movements (HGVs to be sheeted);
 - The roads near the site access points should be kept free from dirt generated by the site clearance activities;
 - Any abnormal loads are to be scheduled in consultation with both the local road authorities and the local Police and to be advertised well in advance to minimise possible disruption;
 - HGV movements should be confined to a designated operational period, the precise hours to be agreed with the local road authority;

- The operator should ensure that all drivers are informed of the requirement to drive slowly and safely on approaches to the site. Supplementary road signs enforcing such instructions could also be erected, if this is felt necessary;
- Warning signs should be erected indicating the presence of the site entrances and directing HGV traffic to be erected;
- Car parking should be provided on-site for contractor's vehicles; and
- HGV drivers should be instructed that they are not to arrive at the site outside of the site's permitted period of operation, and that they should not park/lay-over on the adjacent local road network.

7 Traffic Impact Assessment

7.1 Introduction

- 7.1.1 The assessment parameters of the Transport Assessment were agreed with WDC and TS. PBA's Scoping Note and associated scoping correspondence is included in Appendix A.
- 7.1.2 This Chapter describes the key assessment parameters and provides a summary of the Traffic Impact Assessment results.

Traffic Surveys

- 7.1.3 To determine the existing traffic conditions on the study network, a series of Junction Turning Counts (JTCs) were undertaken over Thursday 6 September 2017 and Saturday 9 September 2017 at all junctions noted below and as per the Survey Specification agreed with WDC (See Appendix C).
- 7.1.4 In addition, to help inform the traffic impact assessment and the requirement for a noise and air quality assessment to support the Environmental Assessment, a seven-day Automatic Traffic Count (ATC) survey was undertaken from Thursday 6 September 2017 to Wednesday 12 September 2017 inclusive, to record existing traffic link flows, vehicle composition and traffic speeds.
- 7.1.5 Whilst the survey data referenced above was taken for a neutral month assessment, survey data was also gathered in August 2017 (w/c Thursday 10th August 2017 to Wednesday 16th August 2017, inclusive) during the school summer holiday period. This was to provide traffic data for a sensitivity assessment, should it be required at key pinch points on the network, subject to the neutral month assessment. It was agreed with WDC and TS, however, that mitigation would not be provided for a summer season assessment given the industry standard premise that it is generally not appropriate to design and build for a non-neutral assessment scenario.

Extent of Assessment

- 7.1.6 The following junctions have been agreed with WDC and TS for assessment:
- Ben Lomond Way/ Loch Lomond Shores Roundabout (internal);
 - Ben Lomond Way, Old Luss Road, Balloch Road Roundabout;
 - A811, Ben Lomond Way Roundabout;
 - A82/ A811 Stonymollan Roundabout;
 - A811/ Carrochan Cres Roundabout;
 - Pier Road/ Balloch Road Priority;
 - Balloch Road/ Drymen Road/ Carrochan Road Priority; and
 - Drymen Road/ A811 Stirling Road Priority.
- 7.1.7 Scoping correspondence had indicated that access junctions into the site would be assessed and this remains the case with respect to the Pier Road/ Balloch Road priority junction and Ben Lomond Way/ Loch Lomond Shores Roundabout (internal). As the phasing and/or detailed applications for the development come forward, the access and operational details will be

considered further. The existing access junction to the Woodbank House site will be brought up to adoptable road standards and comply with the relevant priority access design parameters.

Year of Assessment

- 7.1.8 It was agreed that PBA would undertake a year of opening assessment based on all development being operational in 2020 and in accordance with Transport Assessment Guidance 2012. Further, given the short lead in time between the surveyed flows to the baseline and year of assessment, it was agreed that growth would not need to be applied to the surveyed flows.

Committed Development

- 7.1.9 No committed development was identified during scoping discussions with WDC albeit the Station Square Proposals anticipated to come forward between WDC and Sustrans will have a bearing on the ultimate design and interface of Zone A Station Square, but will not have material impact on the traffic network.

Assessment Period

- 7.1.10 The assessment periods for the proposed development were agreed as:
- Weekday AM Network Peak (08:00-09:00);
 - Weekday PM Network Peak (16:30-17:30); and
 - Weekend/ Saturday Network Peak (15:15-16:15).

Trip Generation

- 7.1.11 Trip generation has been based on the use of the TRICS V7.4.4 database for all proposed development land uses, with exception of the Iconic Visitor Attraction (IVA) and Woodland Visitor Attractions, for which a bespoke trip arrivals and departures profile was produced for both the weekday and weekend. Appendix A Scoping Note & Correspondence contains a Technical Memo describing the approach used to derive the generated IVA and Woodland Visitor Experience trips.
- 7.1.12 All TRICS output files are contained in Appendix D.
- 7.1.13 The Trip Rates and Generation for the individual development uses are presented in Table 7.1 below:

Table 7.1 Proposed Development Land Uses, Trip Rates and Trip Generation

Element	Area	Weekday								Weekend				
		AM (08:00 to 09:00)				PM (17:30 to 18:30)				Saturday (15:00 to 16:00)				
		Arrs. Rate	Arrs	Deps. Rate	Deps.	Arrs. Rate	Arrs	Deps. Rate	Deps.	Arrs. Rate	Arrs	Deps. Rate	Deps.	
A	Budget Accommodation	Youth Hostel (32 max bed)	0.11	4	0.15	5	0.15	5	0.09	3	0.20	6	0.21	7
A	Brewery	300 sqm pub	0.00	0	0.00	0	3.04	9	2.41	7	0.87	3	0.76	2
A	Restaurant	Restaurant (GFA 150 sqm)	0.00	0	0.00	0	4.60	7	1.98	3	1.27	2	1.33	2
B	Woodland with Forest Lodges and Recreational Facilities (Zone B - 43 lodges)	Up to max No. 43 single storey forest lodges (mix 2/3 bed) within woodland	0.03	1	0.04	2	0.11	5	0.06	3	0.12	5	0.08	3
C	Apart Hotel (max 60 bedrooms)	Max 60 beds including bar/ restaurant 150sqm	0.12	7	0.27	16	0.49	30	0.27	16	0.61	37	0.68	41
C	Water Park	Waterpark/ leisure pool with spa facilities (2,500sqm)	0.65	16	0.50	13	1.46	36	1.50	38	0.70	17	0.70	17

Element	Area	Weekday								Weekend				
		AM (08:00 to 09:00)				PM (17:30 to 18:30)				Saturday (15:00 to 16:00)				
		Arrs. Rate	Arrs	Deps. Rate	Deps.	Arrs. Rate	Arrs	Deps. Rate	Deps.	Arrs. Rate	Arrs	Deps. Rate	Deps.	
C	Iconic Visitor Attraction and overspill car park – details subject to future planning	Subject to future planning: limited information on format/ operation beyond footfall numbers identified. (Bespoke trips profile derived)	-	8	-	0	-	9	-	22	-	22	-	25
D	Woodland with Forest Lodges (Zone D - 32 lodges)	Up to max No. 32 single storey (mix 2.3 bed) forest lodges within woodland	0.03	1	0.04	1	0.11	4	0.06	2	0.12	4	0.08	3
D	Boathouse Accommodation	Luxury visitor/ honey-moon accommodation/ destination at previous Woodbank Boathouse (access by boat). Max 2 bed.	0.03	0	0.04	0	0.11	0	0.06	0	0.12	0	0.08	0
D	Woodland Visitor Attractions (1.78 Hectares)	1.78 hectares – low density woodland incorporating a children’s play area and adventure themed-rides and walkways.	-	4	-	0	-	6	-	11	-	18	-	21

Element	Area	Weekday								Weekend				
		AM (08:00 to 09:00)				PM (17:30 to 18:30)				Saturday (15:00 to 16:00)				
		Arrs. Rate	Arrs	Deps. Rate	Deps.	Arrs. Rate	Arrs	Deps. Rate	Deps.	Arrs. Rate	Arrs	Deps. Rate	Deps.	
		(Bespoke trips profile derived)												
D	Staff and Service Area	Deliveries point, storage, management, welfare and security uses (8m max height). Based on office use.	2.12	19	0.39	4	0.17	2	1.50	14	0.27	2	0.51	5
E	Holiday Lodges	Up to No. 28 holiday lodges	0.03	1	0.04	1	0.11	2	0.06	1	0.12	2	0.08	1
E	Residential (4 Bedroom)	Up to No. 20 low density residential dwellings (4 bed)	0.20	4	0.39	8	0.33	7	0.19	4	0.26	5	0.17	3

Trip Distribution

7.1.14 Development trips have been assigned to the network on the basis of the existing turning proportions of vehicles on the network. This was considered to be the most robust approach given the nature of trips associated with the existing activities at: Old Luss Road; Loch Lomond Shores; Pierhead; and the West Riverside car park (to become Zone A Station Square) and adjacent to WDC/ Sustrans planned Station Square Proposals.

Junction Threshold Assessment

7.1.15 Transport Scotland generally require a detailed analysis of junctions on the trunk road network when a 5% threshold assessment is exceeded. To determine the relative impact of the development on the A82 Stonymollan Roundabout, a junction threshold assessment has been undertaken for the development during the Weekday AM and PM and Weekend (Saturday) peak periods.

7.1.16 The assessment calculates the percentage impact of the development traffic compared to the 2020 Base. The results of the assessment are presented below in Table 7.2 which indicates what the percentage impact of development traffic will be.

Table 7.2 A82 Stonymollan Roundabout Threshold Assessment

Arm	Wkday AM Peak 2020	Wkday AM Peak 2020 +Dev	Wkday AM Peak % Increase	Wkday PM Peak 2020	Wkday PM Peak 2020 +Dev	Wkday PM Peak % Increase	Sat Peak 2020	Sat Peak 2020 + Dev	Sat Peak % Increase
A82 North	609	623	2%	1255	1298	3%	1031	1068	4%
A811	832	881	6%	682	806	18%	912	997	9%
A82 South	985	1008	2%	928	959	3%	1243	1287	4%
Local Access	1	1	0%	2	2	0%	7	7	0%

7.1.17 As noted above, the 5% threshold impact is exceeded on the A811 (east) approach to the A82 Stonymollan Roundabout across all three development scenarios (AM, PM & Saturday peak hours). This is to be expected to an extent given the preference to route traffic in accordance with the appropriate road hierarchy. As such, the A82 Stonymollan Roundabout has been subject to further junction testing (see below).

7.2 Junction Capacity Assessments

7.2.1 The junctions in the study network have been analysed using PICADY (for priority junctions) and ARCADY (for roundabouts) computer packages.

7.2.2 The ARCADY and PICADY computer models can split the peak period under consideration into a series of 15-minute time segments in order to simulate the likely arrival pattern of traffic more effectively. Research indicates that the peak Ratio to Flow Capacity (RFC) values returned in any individual peak (i.e. the peak capacity and corresponding queue results) are likely to be observed over the central 15-30 minute period for the hour.

7.2.3 RFC values between 0.00 and 0.85 are generally accepted as representing stable operating conditions, values between 0.85 and unity represent variable operation (i.e. possible queues building up at the junction during the period under consideration and increases in vehicle delay

moving through the junction). RFC values in excess of unity represent possible congested conditions.

7.2.4 Each junction has been assessed during the Weekday AM and PM peak and Weekend (Saturday) peak under the following conditions, unless otherwise stated:

- 2020 Baseline Traffic Flows; and
- 2020 Baseline + West Riverside & Woodbank House Development Traffic Flows.

7.2.5 A summary of the junction analysis results is presented within the following sections with all associated modelling analysis contained within Appendix E.

Ben Lomond Way/ Loch Lomond Shores Roundabout (Internal)

7.2.6 The operation of the Ben Lomond Way/ Loch Lomond Shores roundabout (internal) junction has been assessed using ARCADY and the results of the assessment are summarised in Table 7.3 below, and in full in Appendix E.

Table 7.3 Ben Lomond Way/ Loch Lomond Shores Roundabout (Internal)

Arm	Increase in RFC			Max RFC
	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour	
Ben Lomond Way (East)	3%	8%	11%	18%
Ben Lomond Way (South)	4%	7%	8%	25%
Lomond Shores (Access / Egress)	0%	0%	2%	23%
Lomond Shores (Access / Egress)	0%	0%	1%	17%

7.2.7 Table 7.3 shows that the greatest impact on this junction by the development is during the Saturday peak hour but there is plenty of spare capacity to accommodate the increase in flows with RFC not exceeding 25% on any approach. There is no requirement for remedial measures.

Ben Lomond Way, Old Luss Road, Balloch Road Roundabout

7.2.8 The operation of the Ben Lomond Way/ Old Luss Road/ Balloch Road roundabout junction has been assessed using ARCADY and the results of the assessment are summarised in Table 7.4 below, and in full in Appendix E.

Table 7.4 Ben Lomond Way, Old Luss Road, Balloch Road Roundabout

Arm	Increase in RFC			Max RFC
	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour	
Ben Lomond Way (North)	3%	9%	10%	43%
Balloch Road (East)	3%	8%	3%	27%
Old Luss Road (South)	3%	7%	8%	46%
Old Luss Road (West)	0%	1%	1%	9%

7.2.9 Table 7.4 shows that there is some impact on this junction by the development during the Weekday PM and Saturday peak hour but there is plenty of spare capacity to accommodate the increase in flows with RFC not exceeding 50% on any approach. There is no requirement for remedial measures.

A811, Ben Lomond Way Roundabout

7.2.10 The operation of the A811/ Ben Lomond Way roundabout junction has been assessed using ARCADY and the results of the assessment are summarised in Table 7.5 below, and in full in Appendix E.

Table 7.5 A811, Ben Lomond Way Roundabout

Arm	Increase in RFC			Max RFC
	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour	
Old Luss Road (North)	4%	11%	7%	48%
A811 (East)	1%	3%	3%	45%
Luss Road (South)	1%	3%	2%	38%
A811 (West)	2%	6%	5%	64%

7.2.11 Table 7.5 shows that there is some impact on this junction by the development during the Weekday PM and Saturday peak hour, primarily Old Luss Road (northern arm) but there is plenty of spare capacity to accommodate the increase in flows. The A811 (western arm) has the highest RFC of around 64% in the weekday PM peak hour, well below the requirement for remedial measures.

A82/ A811 Stonymollan Roundabout

7.2.12 The operation of the A82/ A811 Stonymollan roundabout junction has been assessed using ARCADY and the results of the assessment are summarised in Table 7.6 below, and in full in Appendix E.

Table 7.6 A82/ A811 Stonymollan Roundabout

Arm	Increase in RFC			Max RFC
	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour	
A82 (North)	1%	3%	3%	68%
A811 (East)	2%	8%	5%	60%
A82 (South)	2%	2%	2%	52%
Local Access (West)	0%	0%	0%	3%

7.2.13 Table 7.6 shows that there is some impact on the A811 (eastern arm) junction during the Weekday PM peak hour as a result of the development, but there is ample remaining capacity to accommodate the increase in flows. The A82 (northern arm) has the highest RFC of around 68% in the weekday PM peak hour, well below the requirement for remedial measures.

7.2.14 Based on local knowledge and observation, it is considered that the ARCADY software may not accurately model the junction in terms of experiences of queuing and delay. Due to the limited geometric parameters entered into ARCADY, there is little opportunity to reflect the particular characteristics of the junction in terms of give-way behaviour, lane discipline and the merge of traffic from the south and east on the circulation. However, the results of the above are aligned with the threshold assessment and are also compatible with the operation of the roundabout during a typical weekday.

A811/ Carrochan Road Roundabout

7.2.15 The operation of the A811/ Carrochan Crescent roundabout junction has been assessed using ARCADY and the results of the assessment are summarised in Table 7.7 below, and in full in Appendix E.

Table 7.7 A811/ Carrochan Road Roundabout

Arm	Increase in RFC			Max RFC
	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour	
Carrochan Road	1%	1%	1%	27%
A811 Lomond Road	0%	1%	0%	40%
A813 Carrochan Road (South)	1%	1%	0%	22%
A811 (West)	0%	1%	2%	52%

7.2.16 Table 7.7 shows that there is minimal impact on this junction as a result of the development with all arms operating well below capacity and no requirement for remedial measures.

Pier Road / Balloch Road Priority

7.2.17 The operation of the Pier Road/ Balloch Road Priority junction has been assessed using PICADY and the results of the assessment are summarised in Table 7.8 below, and in full in Appendix E.

Table 7.8 Pier Road/ Balloch Road Priority

Arm	Increase in RFC			Max RFC
	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour	
Pier Road	7%	24%	3%	24%
Balloch Road (right turn)	0%	2%	0%	5%

7.2.18 Table 7.8 shows that there is a significant percentage impact on the Pier Road approach as a result of this development during the Weekday PM peak hour. This is because of it being changed from a private road (current status) to the secondary site access. The analysis shows that it operates well below capacity and there is no requirement for remedial measures.

Balloch Road/ Drymen Road/ Carrochan Road Priority

7.2.19 The operation of the Balloch Road/ Drymen Road/ Carrochan Road priority junction has been assessed using PICADY and the results of the assessment are summarised in Table 7.9 below, and in full in Appendix E.

Table 7.9 Balloch Road/ Drymen Road/ Carrochan Road Priority

Arm	Increase in RFC			Max RFC
	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour	
Carrochan Road (left turn)	0%	0%	0%	24%
Carrochan Road (right turn)	0%	0%	0%	17%
Balloch Road (right turn)	1%	0%	1%	38%

7.2.20 Table 7.9 shows that there is minimal impact on this junction as a result of the development with all arms operating well below capacity and no requirement for remedial measures. Additional trips as a result of the development are primarily pass-through trips; i.e. not turning movements.

Drymen Road/ A811 Stirling Road Priority

7.2.21 The operation of the Drymen Road/ A811 Stirling Road priority junction has been assessed using PICADY and the results of the assessment are summarised in Table 7.10 below, and in full in Appendix E.

Table 7.10 Drymen Road/ A811 Stirling Road Priority

Arm	Increase in RFC			Max RFC
	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour	
Drymen Road	2%	4%	3%	28%
A811 Main Street (right turn)	1%	4%	4%	16%

7.2.22 Table 7.10 shows that there is some impact on this junction as a result of the development with all arms operating well below capacity and no requirement for remedial measures. Additional trips as a result of the development are primarily pass-through trips; i.e. not turning movements.

Operation Summary

7.2.23 The results of the junction analysis presented above suggest that remedial junction measures are not required on the local or strategic road network as a result of the development proposals. This may be attributed to the following factors.

- The nature and scale of development uses appeal to different user and age-categories and, in practice, will also be influenced by weather conditions. As such, the proposed development uses are likely to have operating peaks which won't necessarily coincide with each other, nor with the weekday AM, PM and Saturday peak hours.
- The development proposals offer multiple access points. Notwithstanding that the Woodbank House site is segregated from the wider West Riverbank site, the proposals incorporate three access points, which serves to disperse the accessing and egressing traffic effectively from the site. Further, the local road network is optimally configured to cater for separate local and pass-by strategic traffic, through Drymen and Balloch Road, and the more strategic A811. This is also supported by the A813 Carrochan Road and B857 Luss Road, which efficiently spreads local traffic and, provides viable alternative routes, during more congested periods.
- Many of the constituent parts of the development proposals incorporate overnight accommodation and will be marketed for long-weekend, week/ fortnight-long stays. This results in arrival and departure trips for these uses being lower and, in practice, will result in less internal traffic movements for the accommodation uses.
- The baseline operating conditions on the network are derived from a neutral month when network delays and queues are generally relatively limited, with exception of road traffic incidents or traffic improvement works. The development will bring additional traffic to the area, but not so much as to warrant remedial or junction improvement works. Local events are known to exacerbate traffic operations, and should these continue to be operated by Loch Lomond Shores going forward, it is suggested that a Traffic & Event Management Plan should be implemented to materially reduce delay and queuing impacts on the road network.

8 Outline Travel Plan

8.1 Introduction

8.1.1 Sustainable transport measures are now at the fore of both Local and National Government policies. This section outlines a range of measures that could be incorporated within a Travel Plan to help promote the use of sustainable modes of transport when accessing the proposed development.

8.1.2 As outlined in Transport Scotland's *Transport Assessment Guidance* (2012), a travel plan is a "site specific package of practical measures which minimise the negative impacts of travel and transport and aims to co-ordinate transport with wider policy issues (such as environment, accessibility and social inclusion) into a co-ordinated strategy". They assist in encouraging sustainable travel as well as being able to provide benefits to companies through reduced costs and increased efficiency whilst also reducing local road congestion. The document also states that a monitoring framework, to ensure adherence to the Travel Plan, should be agreed and included as part of the Transport Assessment.

8.1.3 The main benefits of a Travel Plan are:

- Reduced pollution;
- Reduced local congestion;
- Encouraging users to take more responsibility for reducing overall carbon footprint;
- Healthier population (walking, cycling and access to public transport use all allow greater opportunities for exercise over the private car);
- Reduced on-site car parking problems; and
- Financial savings through reduced parking costs, mileage costs, car allowances, etc.

8.1.4 Given the nature and scale of the various land-uses within the West Riverside and Woodbank House site as well as the location adjacent to Loch Lomond, it is essential that unnecessary vehicular trips and internal vehicular circulation are reduced, as far as reasonably practicable.

8.1.5 Whilst the access and parking management strategy outlined in Chapter 6 will seek to address access to the site for visitors by sustainable modes, the sustainable travel measures and initiatives outlined in this Chapter are directed towards the on-site staff that will be employed within the development.

8.2 Potential Measures

8.2.1 This Outline Travel Plan therefore describes a package of measures and incentives which aim to encourage the use of sustainable modes of travel in preference to the private car. This section outlines several potential measures which could be implemented to support sustainable travel choices for future employees, including:

- Pedestrian initiatives;
- Cycle initiatives;
- Public transport initiatives; and
- Car-sharing initiatives.

- 8.2.2 The Travel Plan should be administered and coordinated by a staff member on-site who would have responsibility for ensuring the relevant information is conveyed to new staff and up to date information is contained on all staff noticeboards. They will assume a coordinating and management role for staff car pool and car share initiatives.

8.3 Pedestrian Initiatives

- 8.3.1 The location of the site adjacent to Balloch Village which has a local bus stance facility and a rail station within close proximity, as well as a local residential population and a number of local amenities and services, are such that walking is a viable means of access for many local trips. The following measures, some proposed as part of the development, and incentives could encourage uptake of pedestrian trips:

- Provision of an extensive network of pedestrian facilities throughout the site;
- Provision of a number of accesses providing convenient connections to, through and from the site with an established pedestrian network;
- Internal road network designed taking cognisance of Designing Streets to promote low vehicle speeds and provide an environment which is more attractive to pedestrians;
- Provision of Travel Noticeboards within staff areas/ facilities including plans showing the following:
 - Internal pedestrian network;
 - Locations of development accesses;
 - Locations of adjacent pedestrian facilities including the network of leisure paths; and
 - Locations of internal and external amenities.
- The Travel Noticeboards could provide links to existing information on pedestrian facilities in the wider Balloch area including the Core Paths as well as distances and associated walking journey times;
- Provision of adequate warning signs throughout the development site alerting drivers to the main pedestrian routes through the site; and
- Discounted or free travel for employees on the proposed monorail, would assist with completing the last-leg of a trip into the site, which may otherwise be perceived as “too far” for some walkers.

8.4 Cycle Initiatives

- 8.4.1 It is generally accepted that employees are willing to cycle up to 6km (20 minutes) to access their place of employment. As such, the local surrounding villages and towns of Jamestown, Alexandria, Renton and, more northerly areas of Dumbarton, are within a reasonable cycling catchment of the site. Moreover, the existing off-road and entirely traffic-free route along the River Leven (NCN 7) provides a suitable safe, and coherent cycle route direct to the site.

- 8.4.2 The following measures, some proposed as part of the development, and incentives could encourage uptake of cycling trips:

- Provision of cycle connections throughout the site;
- The ability for staff to make use of a site-based cycle-hire scheme;

- Provision of a number of accesses into the development to ensure that the site is legible for cyclists from the surrounding transport network;
- Provision of Travel Noticeboards within staff areas/ facilities to include plans showing the following:
 - Locations of development accesses and cycle parking locations;
 - Locations of adjacent facilities which are suitable for use by cyclists;
 - Locations of internal and external amenities, including local cycle network;
- The Travel Noticeboards could provide links to existing information on cycling routes and facilities in the wider Balloch area as well as distances and associated cycle journey times;
- Internal road network designed to promote low vehicle speeds and therefore provide an attractive environment for cyclists;
- The inclusion of staff lockers, changing and showering facilities within staff areas, to facilitate ease of cycling for employees; and
- Provision of cycle information to new-starters.

8.5 Public Transport Initiatives

- 8.5.1 Bus services currently operate on Ben Lomond Way within the main Loch Lomond Shores site as well as a more frequent level of service on Balloch and Drymen Road. Further, a local bus stance and a railway station are located within Balloch village, the latter being within almost immediate proximity of Zone A – the Station Square area of the new development.
- 8.5.2 A monorail is also proposed to enhance connectivity from Balloch Village main to the heart of the development (adjacent to Loch Lomond Shores retail crescent and Pierhead).
- 8.5.3 To maximise uptake of public transport by employees, residents and visitors the site. The development will be supported by the introduction of the following measures:
- Provision of Travel Noticeboards within staff areas/ facilities to provide the following information:
 - A plan showing the locations of local bus stops (& stance) and rail/ monorail station locations, including indicative walking and cycling journey times;
 - Bus and rail and monorail timetable information;
 - Local public transport operator contact details;
 - Discounted or free travel for employees on the proposed monorail, would assist with encouraging access to the wider public transport services;
 - Shared-ticketing initiatives are being discussed with ScotRail Abellio for visitors by rail to the proposed development, and options for tickets for staff and employees should be explored; and
 - Bus stop facilities within the development site should be upgraded to include Real Time Passenger Information, wherever practicable, as well as incorporating timetables and sheltered/ well-lit facilities.

8.6 Car Sharing Initiatives

- 8.6.1 It is suggested that car sharing and car pool initiatives could be publicised as part of the Travel Plan with details of the scheme included within Staff Travel Packs and Noticeboards. The management of any internal staff car sharing scheme would be undertaken by the on-site Travel Plan Coordinator.

8.7 Implementation

- 8.7.1 It is intended that Travel Packs would be issued to new-starts upon commencement of employment at the site.
- 8.7.2 A Travel Information Pack will also be provided to residents at the Woodbank House site, at the point of occupation of their properties. The pack will provide residents with information similar to that presented on the Travel Noticeboard: including details about all modes of travel including routes, journey times, distances, onward connections and calories-burned, to enable them to make an informed decision about how they choose to travel to and from the site.

9 Summary & Conclusions

- 9.1.1 Peter Brett Associates LLP (PBA) was commissioned by Flamingo Land Ltd to undertake a Transport Assessment (TA) in support of a Planning Permission in Principle (PPiP) application for a variety of commercial, leisure and tourism-related development uses at West Riverside and Woodbank House, Balloch, Loch Lomond.
- 9.1.2 Scoping discussions and correspondence was undertaken with West Dunbartonshire Council (WDC) Road Officers and Transport Scotland (TS) and their requirements with respect to analysis have been reflected in this Transport Assessment (TA).
- 9.1.3 This TA has been produced in accordance with good practice and developed with reference to the Scottish Government's 'Transport Assessment Guidance 2012'. Consideration has been given to both Scottish Planning Policy (SPP) and Planning Advice Note (PAN) 75 in demonstrating that the proposals constitute sustainable development, as far as reasonably practicable for this PPiP stage.
- 9.1.4 The trip generation used to inform this TA was based on the use of the industry standard TRICS V7.4.4 database where existing land use categories were compatible with the proposed development uses. The Iconic Visitor Attraction (IVA) and the "Woodland Visitor Experiences" did not match with TRICS land use categories, therefore, a bespoke trip generation derived from a daily profile of arrivals and departures for each land use, was produced. Our approach was based on anticipated footfall figures and agreed by Transport Scotland (TS).
- 9.1.5 The agreed approach to the trip generation considers each development land use as standalone and assumes that there is no cross-over between the proposed and/ or existing Loch Lomond Shores (and associated) land uses. As such, our assessment is based on a worst-case trip-generation scenario and represents a robust assessment of any likely impact arising from the proposed development.
- 9.1.6 The development proposals place an emphasis on sustainable access and movement. The existing sustainable and active travel routes to and through the development are retained, enhanced and bolstered by new connections to internal development uses. A monorail is proposed to enhance connectivity from Balloch Village, and onward connections by bus and rail, to the heart of the development site. This provides a much-needed link to the existing and proposed development, facilitating an uptake of sustainable and active travel modes, and providing a convenient alternative over the private car.
- 9.1.7 Whilst the detailed content of the development proposals is yet to be finalised, we have demonstrated that the interim parking provision scenario is based on all West Riverside development parking being provided over the reconfigured Pierhead and new Pier Road car parks. Parking associated with the Woodbank House site will be contained within the site, and is considered separately from the overall West Riverside parking provision requirements.
- 9.1.8 Operationally, the eventual aspiration is to entirely segregate the parking associated with the accommodation-based land uses, and remove these from general operation over a visitor's duration of stay at the site. This would facilitate a reduction in unnecessary vehicular trips for short-internal-site trips, but would also reduce any unnecessary internal circulation at the point of visitor arrivals.
- 9.1.9 Supporting access and parking management interventions will be adopted to support safe and convenient access and movement within the site, via the existing routes on Ben Lomond Way and Pier Road. Signage and wayfinding, likely incorporating Variable Message Signing (VMS) and orientation boards, will support efficient and effective internal access and routing strategies. Interventions at attraction and accommodation-bookings, will help ensure informed access arrangements and management which will reduce internal vehicular/ movement conflicts overall and facilitate an uptake of sustainable modes throughout the site.

- 9.1.10 The proposed development is compliant with the wider policy and development aspirations of the site and has been developed with consideration to sustainable transport and design opportunities. The associated access, transport and movement proposals are compliant with WDC and wider sustainable and active travel policies.
- 9.1.11 Due to the number of additional vehicle trips that are anticipated as a result of the proposed development, it has been demonstrated that there would be minimal impact on the operation of the local road network. It is widely known that the summer season, good weather and local events can increase through traffic, particularly on the A82 and the A811, as well as Balloch and Loch Lomond Shores-bound traffic. This is an upshot of the proximity to Loch Lomond, the wider Loch Lomond & Trossachs National Park and the functionality of the A82 as the main strategic access road to the north west of Scotland. During a neutral assessment period, the development traffic is not anticipated to exacerbate the prevailing operational status quo, albeit a Traffic Management Plan should be implemented for additional and significant trip-generating events and activities in the locality, regardless of season. Further, the access and parking proposals for the new and existing Loch Lomond Shores development, should be closely monitored and managed to ensure optimal efficiency for the local and wider road network.