



Section 03 DEVELOPMENT CONSTRAINTS

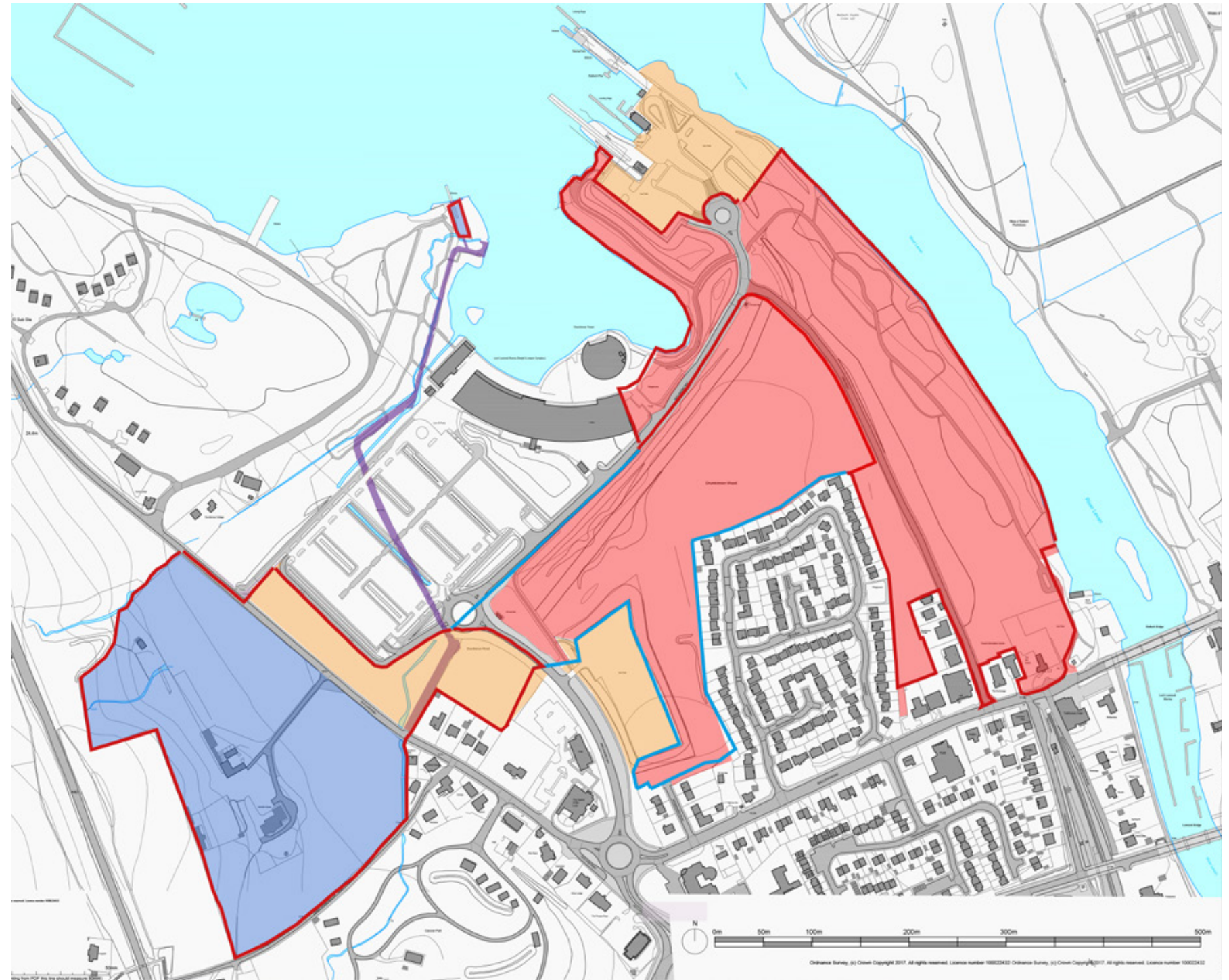
LAND OWNERSHIP



3.0 Land ownership

Land within the PPiP site falls within different ownerships:

- An area covered by an exclusivity agreement between Scottish Enterprise and Flamingo Land; this land is currently owned by Scottish Enterprise and will be purchased by Flamingo Land;
- Further areas within Scottish Enterprise's ownership which are under discussion with Flamingo Land;
- The site of a previous boathouse in Flamingo Land ownership, together with a right of access
- A 'search area' within Scottish Enterprise ownership to allow review of possible access routes to the site of a previous boathouse, while minimising disruption to existing businesses.
- The Woodbank site – currently within Flamingo Land's ownership.
- A small area of land included within a recent Planning Application by Sweeney Cruises overlaps with the PPiP site



3.2 Heritage Conservation

There are a number of historic sites and Listed buildings within and immediately adjacent to the site. These include:

Woodbank House and its setting
Category: A Listed

Barham Glen Architects (RIAS Conservation accredited architects) have prepared an outline conservation report (attached as appendix)

Woodbank House dates from circa 1775, with later 19th century additions. Recent external inspections, including a structural survey, found the building to be a largely roofless ruinous shell with an internal structure beyond attempts for retention. The house became a hotel in the 1930s.

In addition to Woodbank House itself, there are the substantial remains of former stables and garage buildings to the East. The southern stable block retains original features which could potentially be retained or rebuilt. The north block contains more in the way of subsequent intervention. Neither block retains its roof.

The remains of previous planting and structures associated with Woodbank's gardens and parkland can still be seen, and include:

- An attractive area with open vistas towards the main façade of Woodbank house from Luss Road
- Remains of a walled garden.
- Mature avenue tree planting at Old Luss Road
- Large mature good quality tree species of significance throughout the landscape such as Cedar, Pine and Oak.
- Existing woodland creates a pleasant backdrop to Woodbank House- it is the location for a previous walled garden and glasshouses, plus a bothy and a network of footpaths
- Exotic tree species give a distinctive character to the woodland.

Winch House Including Slipway at the Pierhead (Drumkinnon Bay) Category: A Listed

WOODBANK HOUSE



Woodbank House (historic photograph)

Woodbank House and setting (circa 1918)



Woodbank House - current ruinous condition



Ancillary buildings - current ruinous condition



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A railway running down to the water's edge consisting of cast-iron rails on longitudinal sleepers. A rectangular harled brick building at the top of the slipway houses a steam winch. It is a good example of a rare building type and is particularly notable for the retention of its original machinery.

The Maid of the Loch Steam Launch & Balloch Pier
Category: not Listed

The historic Maid of the Loch Paddle Steamer (partially restored), together with its steam slipway and winch house (fully restored) are located at a pier which was part of the previous station and is itself currently undergoing restoration.

Balloch Country Park and Castle; Category: A Listed

The Country Park sits on the opposite side of the River Leven to the development site. It is the location for Balloch Castle (an A Listed building), and its important parkland setting. The estate was designated as a country park in 1980, and since 2002 has been part of Loch Lomond and The Trossachs National Park.

Balloch Station Category: not Listed

These station buildings are currently used as a tourist information centre by Visit Scotland, with the present Balloch station now located on the opposite side of Balloch Road.

Drumkinnon Farm; Lower Stonymullen Road
Category: B Listed

Drumkinnon Farm was the home farm and stables of Tullichewan Castle, which was demolished in 1954.

Tullichewan Hotel Balloch, Category C Listed

Located opposite the previous station building, this building continues to function as an hotel

3.3 Ecology: wildlife habitat

A Phase 1 habitat survey has been carried out and the following ecology reports have been completed and have informed design proposals

- Phase 1 habitat survey
- Otter and water vole
- Badger red squirrel and pine marten
- Bat activity survey



1



2



3



4



5



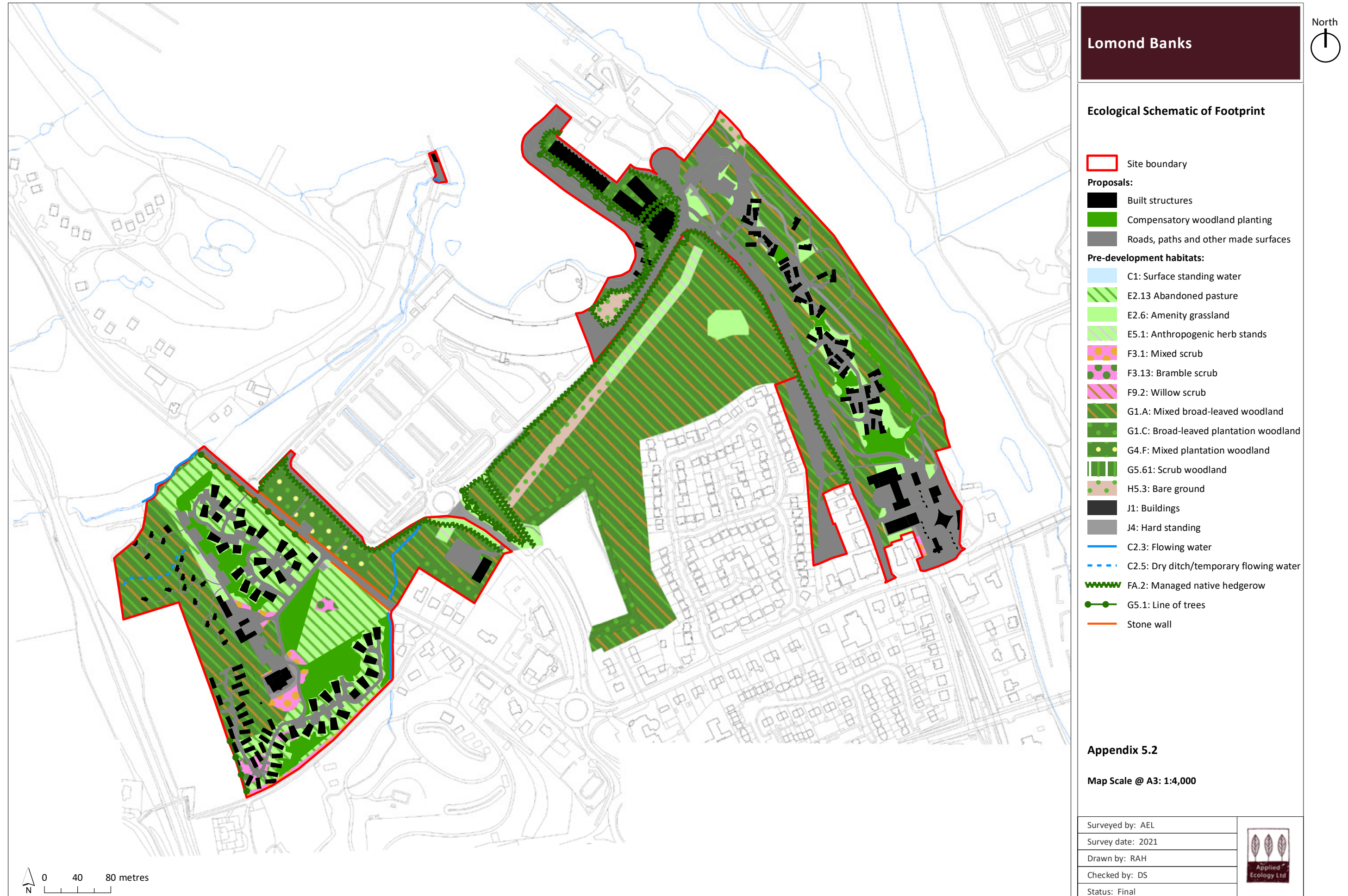
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Illus:

1. Winch House; 2. Maid of the Loch steam launch and Balloch Pier; 3. Balloch Castle; 4. Balloch Station; 5. Drumkinnon Farm; 6. Tullichewan Hotel

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3.4 Woodland

There are four areas of woodland within the site:

- Drumkinnon Woods
- Woodbank
- An area to the north of Loch Lomond Shores Car Park (no development proposed in this area)
- Woodland located at the previous railway line and sidings beside the River Leven

Woodland History

Wooded areas of the site have seen differing land uses over the years:

- Prior to any settlement, the area would have formed part of the natural forest of Scotland. By 1750, agriculture had more or less cleared woodland in the area - an extract from Roy's Military Map shows few distinct trees or woodland
- Well-known industrial uses followed, including extensive land use change to cater for transport by boat and rail.
- By 1930, the LEPO woodland had been felled (and probably re-stocked) and the River Leven riparian woodland was undergoing significant fragmentation. The area known as Drumkinnon Woods was largely cultivated land for arable crops.
- By 1949, the restocked LEPO woodland was developing into what is core mature woodland today within Drumkinnon Woods.
- Concurrent with the development of Loch Lomond Shores, woodland at the River Leven was cleared and replanted to provide amenity grasslands where railway lines used to be positioned.
- The 'Ineos' pipeline dissects Drumkinnon Woods and has resulted in an uneven area of significant level changes and some new planting.
- The site history suggests that woodland within the development area has experienced some marked changes over 300 years, with woodland expansion occurring in the last 50-70 years.

Designated woodland

The areas proposed for development are not covered by a Tree Preservation Order or Conservation Area, but Scottish Native Woodland and Ancient Woodland Inventory sites are present within the site boundary. Long-established of plantation origin (LEPO) woodland is present in the west, north and centre of the site. These areas are granted a degree of protection through the planning system, and the Scottish Government's policy on control of woodland removal states that there is a strong preference for retaining ancient woodland, amongst other types of woodland.

Some existing woodland listed in the Scottish Ancient Woodland Inventory has been disturbed or altered/reduced in size as a result of:

- INEOS pipeline installation (1951)
- Recently constructed housing at Drumkinnon Gate
- Road access and parking for Loch Lomond Shores
- Previous landscaping associated with the historic garden/setting for Woodbank House
- The location of various businesses in woodland to the north of Loch Lomond Shores
- Planting or spread of exotic tree species and shrubs, as well as invasive plant species - for example extensive areas of bamboo at Woodbank House



data collected from scottish natural heritage and historic environment scotland

KEY

- PPIP Boundary
- 1 Drumkinnon Wood North
- 2 Woodbank
- 3 Drumkinnon Wood
- 4 West Riverfront
- Woodland listed in the Scottish Ancient Woodland Inventory
- Old sessile oak woodland habitat (SAC)
- Modern woodland associated with Loch Lomond Shores



Tree surveys and assessments

A tree survey was conducted to gather British Standard 5837:2012 data on prominent trees in the landscape. In addition to this, various tree groups were described in terms of species and character along with age profile, average diameter and height estimates. Following the prominent tree survey and the more general survey of tree groups, the survey effort to identify every individual tree within relatively homogenous woodland groups was deemed excessive at PPiP Stage and unnecessary for 'in-principle' design.

Description of current woodland

All areas of woodland are considered to have resulted from planting and subsequent natural regeneration in certain areas. No true ancient semi-natural woods are present on the site and the woodland presents a range of 'ecological quality'.

There are some invasive species present (japanese knotweed; himalayan balsam; rhododendron, laurel and bamboo); there are also 'exotic' or 'domiciled' tree species such as beech which conflict with the otherwise native component of the semi-natural woodland character.

Prominent landscape trees are located:

- along raised banking south of Ben Lomond Way towards the Loch Lomond Shores complex;
- trees parallel to Luss Road within the 'Woodbank' section of the site
- surrounding the derelict building in that area

A young to semi-mature aged broadleaf plantation surrounds the Loch Lomond Shores infrastructure – this forms part of the development landscaping for previous projects.

Woodbank woodland is of plantation origin, somewhat dominated by species such as sycamore. Detracting from this is the proliferation of invasive rhododendron, laurel and bamboo plus intense grazing pressure from horses and some gravelled areas associated with derelict buildings.



KEY

Woodland Species Composition	
	Planted or Highly Modified Woodland
	Oak, Birch, Sycamore Woodland
	Core Sessile Oak Habitat with Bramble
	Oak, Sycamore, Bramble Bracken
	Pipeline Clearing / Dense Bramble
	Planted / Exotic / Domiciliated Tree Species
	Birch, Cherry, Willow, Sycamore Woodland

Invasive Non-Native Species	
	Bamboo
	Himalayan Balsam
	Japanese Knotweed
	Laurel
	Rhododendron

Woodland Species Composition



3.5 Transport

The development site is well connected for all modes of transport:

- Train: Balloch is well connected by train via Glasgow and Balloch station sits directly opposite the development site. A car park to the north of the Visit Scotland Centre is used for park and ride.
- Bus: Scottish Citylink coaches pass through Balloch, there are local bus stops at Loch Lomond Shores and at Balloch Road
- Car: Balloch is well connected by road by the A82 and A811
- Cycle: National Cycle Route 7 passes by the south

east of the West Riverside site, and regional Route 40 begins to the north west, at Loch Lomond Shores. The West Loch Lomond Cycle path starts at the Visit Scotland Centre. There is limited cycle storage at the station

- Boat: the pierhead is the location for the only public slipway on Loch Lomond, this can be very busy, so access and parking for cars and trailers can be problematic.

3.6 Parking

Existing and proposed parking provision has been the subject of extensive traffic analysis and transport assessment using a methodology agreed with West Dunbartonshire Council. Full details are included within the Transport Assessment (TA) and the Traffic and Transport Chapter of the EIA Report, both of which are submitted in support of the PPIP application.

EXISTING ACCESS AND MOVEMENT CONDITIONS; THE WIDER BALLOCH AREA



EXISTING ACCESS AND MOVEMENT CONDITIONS ADJACENT TO THE SITE

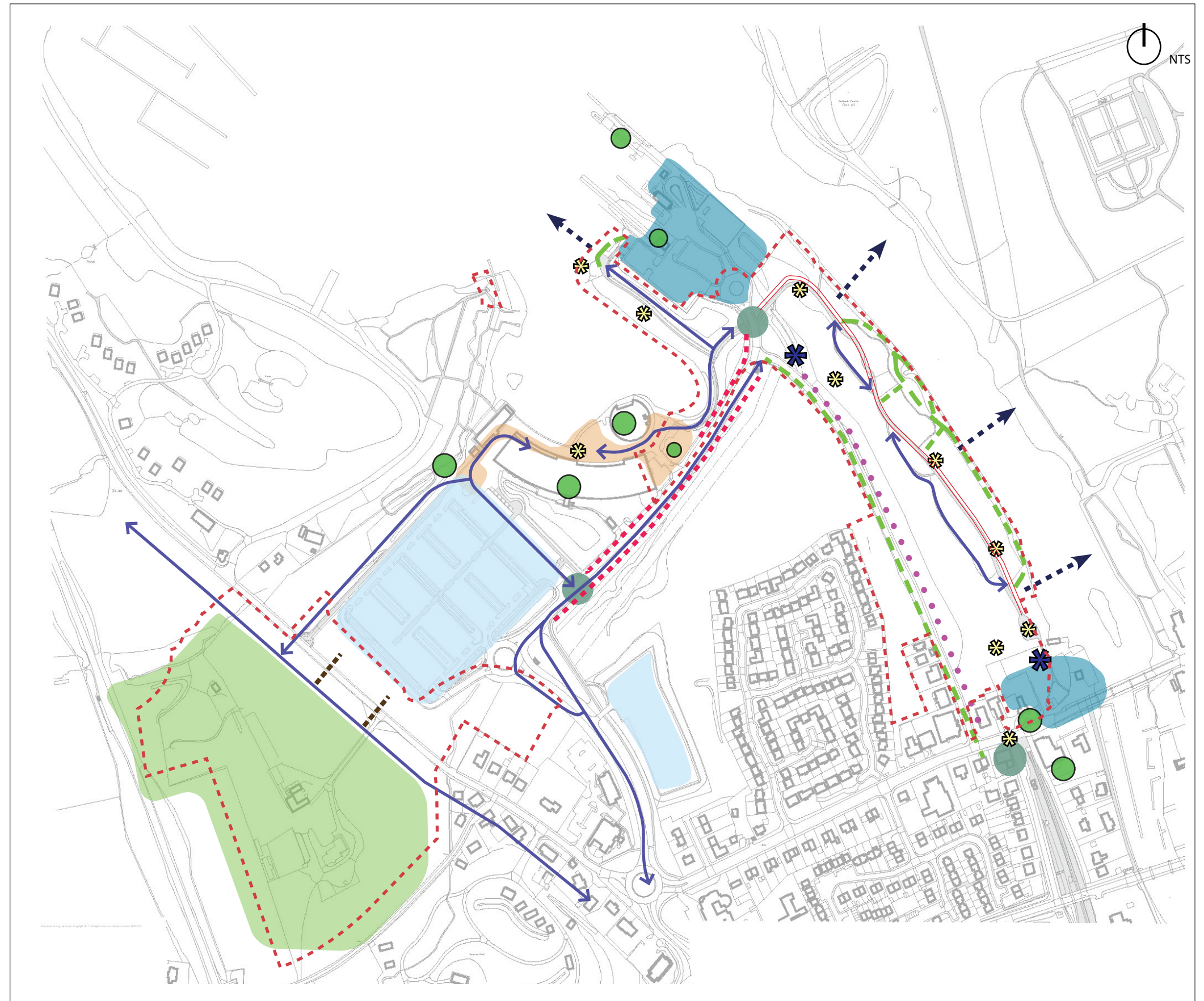
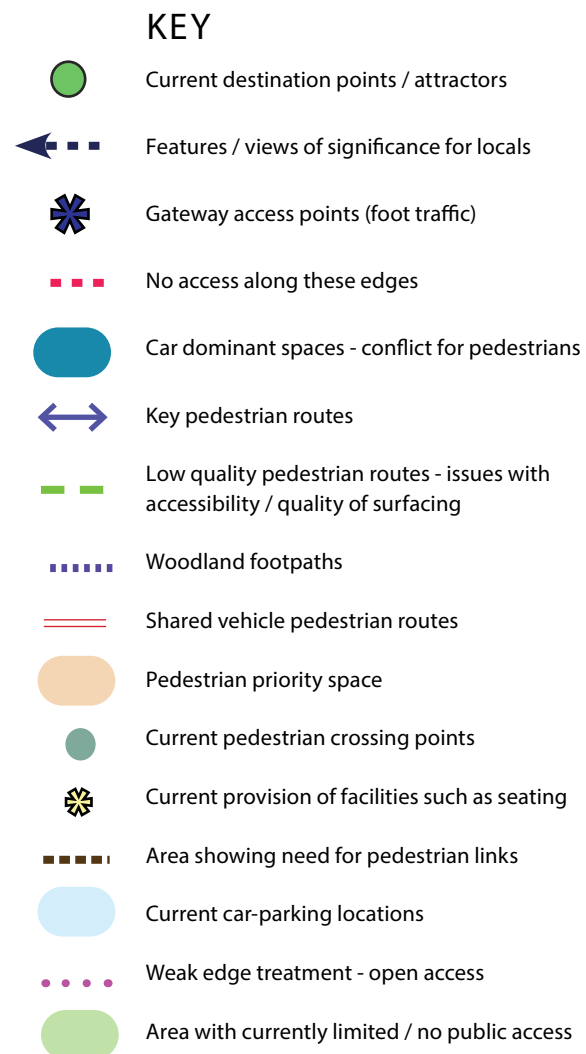


3.7 Pedestrian access

The current site provides a series of pedestrian routes that traverse through woodland, open spaces and around the Loch-shore. Some longer distance paths continue outwards from the site, including the Loch Lomond Shores Walk, John Muir Way and the Three Lochs Way.

Paths within the site currently vary in surface treatment – ranging through asphalt, concrete, bound gravel and timber edging and low-quality paving. In some locations there is more natural surfacing which can cause problems with accessibility. Pedestrian access points, or ‘gateways’, can be unwelcoming and would benefit from more detailed consideration of how these tie into wider pedestrian routes and become more prominent.

Throughout the site there are also areas which favour car traffic than foot traffic. This is nowhere more evident than along the Pier-head and Balloch Gateway spaces.



3.8 Flood risk

A Flood Risk Assessment and Drainage Strategy have been completed and will be appended to the Lomond Banks EIA Report. A significant part of the pierhead zone lies within an area identified as at risk for flooding (1 in 200 + 20% climate change flood extents and 1 in 500 year flood extents). Consultation with SEPA has confirmed that they consider some areas to the east to be at risk of flooding from the River Leven, with areas to the west at risk of flooding from Loch Lomond

3.9 Water supply, foul drainage and surface water management

Much of the existing foul drainage in the area is captured in combined sewers which carry wastewater to the Ardoch Wastewater Treatment Works in Dumbarton.

Some areas of the West Riverside site slope away from existing sewers so a pumping station is located on the West Riverside site which currently serves Loch Lomond Shores.

FLOOD RISK AREAS



Legend

- 1:200 Year Event + Climate Change - 10.57 mAOD (2017 Topo) Outline
- Watershed (River / Loch)
- Zone for Hotel Development Above Design River Leven Flood
- Zone for Possible Hotel Development within Loch Lomond Flood Zone - Will Require Appropriate Compensatory Storage
- 2017 Topographic Survey

3.10 INEOS pipeline

There are two oil pipelines present on the site - the INEOS Crude Oil and multi product pipelines stretch from Finnart in the west to Grangemouth in the east. Constructed in 1951, they cross a significant proportion of the West Riverside site within the Drumkinnon Woods area parallel to Ben Lomond Way.

INEOS have been consulted at an early stage of the design process and they have advised that they impose a range of conditions and restrictions on development beside their pipelines. These have the potential to impact on future development through:

- Wayleave requirements which will influence the type of construction possible close to the pipeline: these include:
- A 100-metre corridor (50m to either side of the pipeline) where no work can be carried out without prior consent from INEOS, including drainage, fencing, buildings, posts, signposts, lampposts, underground services installation
- Restrictions on tree planting and tree species within a 20-metre corridor (10 m to either side of pipeline).
- A 6-metre corridor (3m to either side of the pipeline) where all work must be directly supervised by an INEOS representative
- Security requirements for INEOS installations which will impact on views across the site: for example, there is a visual impact associated with existing perimeter 2.7-metre-high fencing at valve pits

3.11 Public utilities

Electricity; Scottish Power mapping confirms that cables generally follow the route of existing roads

Gas; SGN mapping confirms that gas mains generally follow the route of existing roads

Telecoms: BT records confirm that telecom installations generally follow the route of existing roads. The BT apparatus is primarily underground but there are some overhead lines on the northbound side of Pier Road and the access road to Woodbank House

Water: a water main cuts across the south west corner of the Woodbank site



INEOS PIPELINE WAYLEAVE AREA

KEY ineos pipeline wayleave area

SIGNIFICANT LEVEL CHANGES

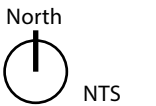
3.12 Topography

There are some significant changes in level across some areas of the site. In places, the site undulates and becomes particularly steep to gradients exceeding 1:3 slope.






This is very evident from walkover studies within the area of mature tree planting at Drumkinnon wood.

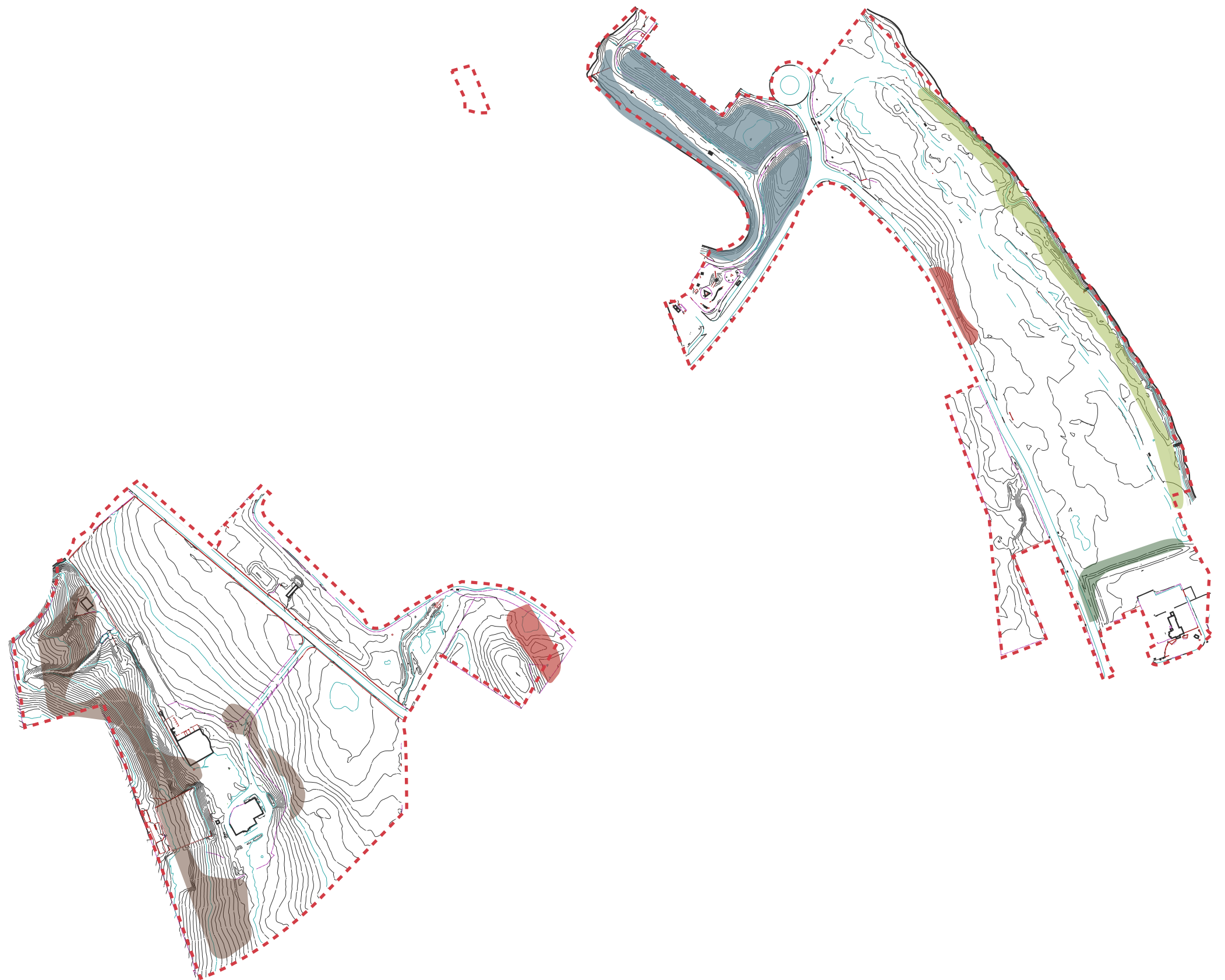
Within this area of the site the level changes have the potential to cause potential issues with the placing of lodges and access infrastructure within the woodland, as well making the integration of new accessible pedestrian links more difficult.

In some locations it will be necessary to protect the sites natural features -such as significant tree species -and to minimise new development's impact on the woodland ecology. In these locations new developments will have to work with the existing site topography; cut and fill will not be possible



KEY



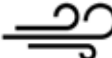

-  Areas of significant level changes within mature woodland.
-  Areas of level changes interventions, that create buffering to adjacent land uses; such as car parking to be retained and further enhanced.
-  Areas of landscape treatments resulting in level changes. This space presents opportunities for further enhancement through master-plan proposals.
-  Areas of significant level changes within plantation woodland that may restrict offering within this area, issues with accessibility.
-  Areas of natural undulating landforms such as river corridors; limited interventions.



3.13 Microclimate

The microclimate across the site is varied. The majority of the site receives a good amount of solar gain throughout the day. The river-front woodland, with its dense canopy, reduces the impact of solar gain at ground level which hinders the growth of ground-cover woodland species. In these locations existing pedestrian routes suffer from dominant shade. In contrast, the remainder of this riverside edge is open with a mix of glades and lighter tree canopies. Drumkinnon Woodland has a pleasant quality to its micro-climate with some light penetrating to ground level where natural woodland openings exist. This promotes ground cover and creates a varied woodland setting.

Towards the Loch edge, spaces become much more exposed and prevailing winds sweep across the Loch Lomond and towards the Pier. During times of extreme weather, wind and rain, these spaces offer little protection and shade. However the prevailing wind is screened well by tall semi mature buffer planting, particularly around the beach-front and pierhead.

	SNOW
	Highest Jan-March with an average of 12 Days in this period
	RAIN
	Generally most frequent in July- September with approx 26 days with rain. Oct-Dec highest quantity in up to 317mm
	TEMPERATURE
	MAX 22°C // MIN -4°C
	WIND
	December and January generally have higher gust speeds and more frequent winds at higher speeds. Prevailing south westerly winds
	DAYLIGHT HOURS
	Shortest Day- Sunrise 8:49 // Sunset 15:45 Longest Day- Sunrise 4:32 // Sunset 22:10

MICROCLIMATE: SUMMARY

