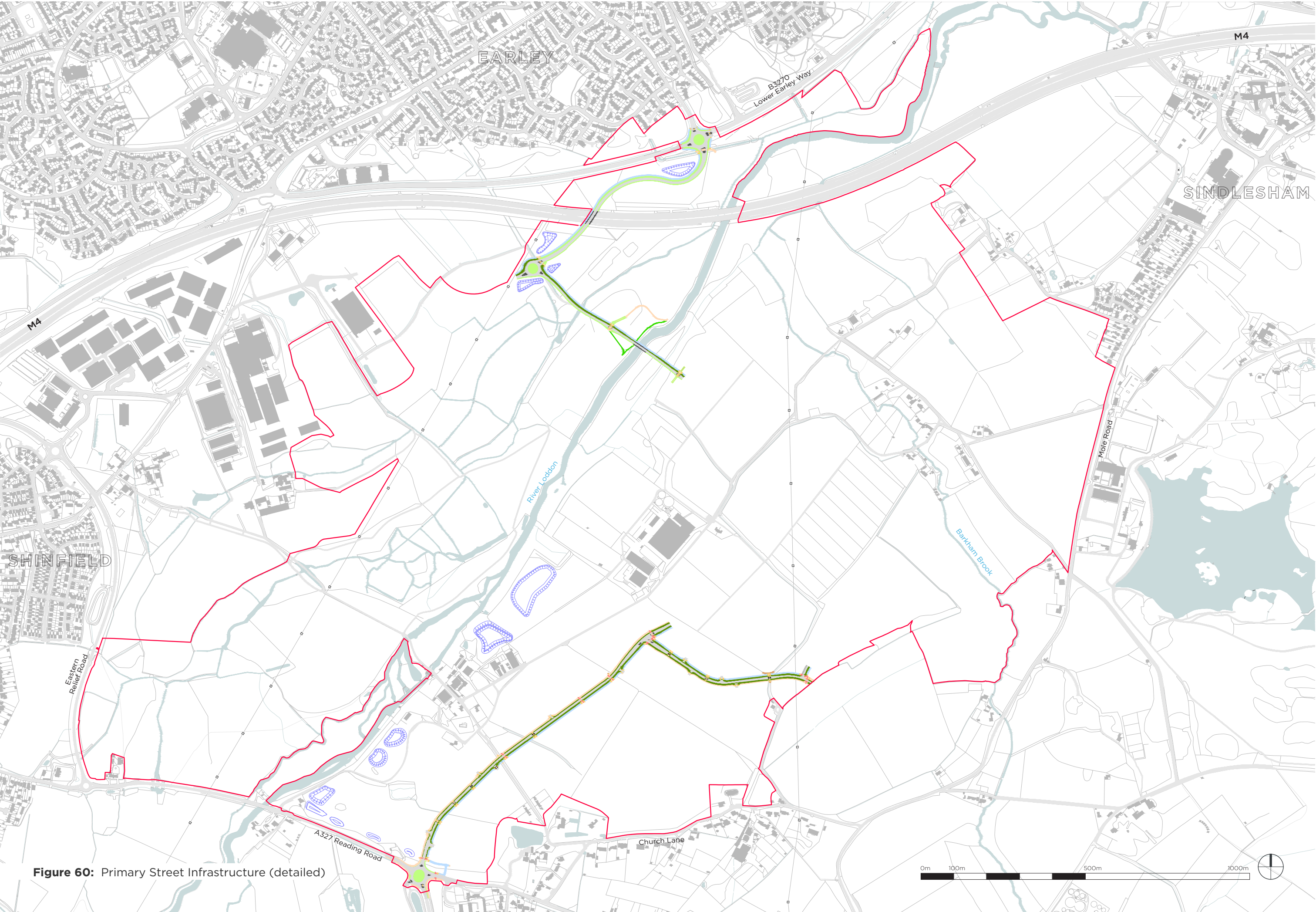












# PRIMARY STREET INFRASTRUCTURE

11



**Figure 60:** Primary Street Infrastructure (detailed)

# PRIMARY STREET INFRASTRUCTURE

-  Application boundary
-  Proposed 5m Segregated Footway/Cycleway
-  Proposed 3m Shared Footway/Cycleway
-  Proposed 2m Footway
-  Proposed Verge
-  Proposed Carriageway
-  Proposed Hard Standing
-  Proposed Attenuation Basins

## Context

A number of separate access points for vehicular and active travel modes are proposed which will be connected via Spine Streets as part of the primary internal infrastructure within LGV.

Access into the southern area of LGV will be provided by reconfiguring the existing Arborfield Road / Observer Way roundabout to facilitate a new approach arm into the development. To the north, the Lower Earley Way / Meredith Way roundabout will be similarly reconfigured to accommodate a fourth arm which will serve LGV.

A main **Primary Street Network** is then being provided through LGV to enable travel between these points, as well as facilitating onward journeys to the south-eastern and north-eastern areas of LGV. The Primary Street Network serves an important role. Not only will it facilitate the broad dispersal of development traffic onto the surrounding road networks, but the high quality and continuous footway and cycleway provision along the corridor will also enable a greater connectivity for active travel modes.

Notably, the River Loddon and M4 motorway form the primary severance points for travel, with the former impacting internal travel between LGV and TVSP, and the latter more of an impediment to onward travel for destinations to the north. The proposals for LGV address this severance via the provision of bridge crossings over the river Loddon and the M4 motorway.

The primary street infrastructure has been designed to connect to the parts of the LVGV to the south and the northeast not subject of this planning application, being brought forward by Gleeson Land and Hatch Farm Land Limited.



# Primary Street

Recognising that the Primary Street Network is a key component of the on-site infrastructure, detailed designs have been advanced for the sections which route through the northern and southern areas of LGV (Refer to Fig: 45 and 46). The suite of design drawings that have been submitted for consideration as part of the planning application documentation incorporate the key design parameters as set out in the Table below.

Key Design Parameters	
Target Speed	30mph
Direct access to properties/courtyards	Limited
Bus access	Yes
Carriageway width	7.3m
Typical footway provision	2.0m footway to one side of carriageway
Typical cycleway provision	3.0m segregated two-way cycleway to one side of carriageway
Typical verge provision	3m wide verge to both sides of carriageway
Service margin	Within footway/cycleway
Crossing provision	Signal controlled Toucan crossing Parallel Footway & Cycleway crossing Uncontrolled crossing with central refuge

The carriageway being promoted fully accords with the requirements of WBC’s Design Guidance which stipulates a **7.3m width** should be provided for streets that connect neighbourhoods and main destinations with some through traffic. The provision can therefore readily accommodate the swept paths for two-way buses which will route through LGV.

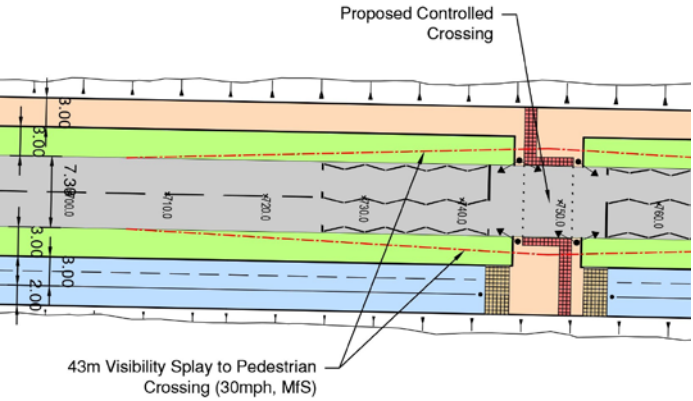
The provision of a **3m wide verge** on either side of the carriageway provides an appropriate width to incorporate planting such as street trees and also to accommodate roadside SuDS drainage features such as rain gardens. The verges also act to offset the active travel routes from vehicular traffic at a separation distance which far exceeds the minimum requirements set out in LTN 1/20 the DfT’s “Cycle Infrastructure Design Guidance Note LTN 1/20”.

The **5m wide** segregated footway / cycleway provision is also fully in accordance with the guidance set out in LTN1/20 and can cater for flows of up to 1,000 cyclists an hour. Similarly, the 3m shared use provision on the other side

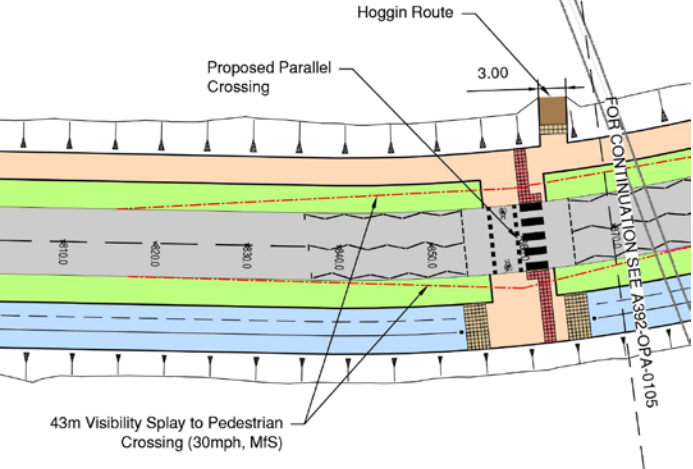
of the carriageway can accommodate a further 300 cyclists an hour. The high standard of provision can therefore readily accommodate the levels of flows throughout all areas of LGV, including at key locations such as the District and Local Centres and in the vicinity of the primary and secondary schools.

A variety of **crossing points** are promoted along the Primary Streets to ensure a high degree of connectivity is achieved along and across the corridor. Parallel Footway / Cycleway crossings are proposed at locations where the key Active Travel routes cross the corridor. Signal controlled TOUCAN crossings are employed in areas where pedestrian and cycle activity will be higher such as in the vicinity of the primary and secondary schools and also within the District Centre. These formal crossing points are supplemented with the provision of uncontrolled crossing points with central refuge island that cater for movement between residential parcels and also where less formal active travel routes cross the Primary Street corridor.

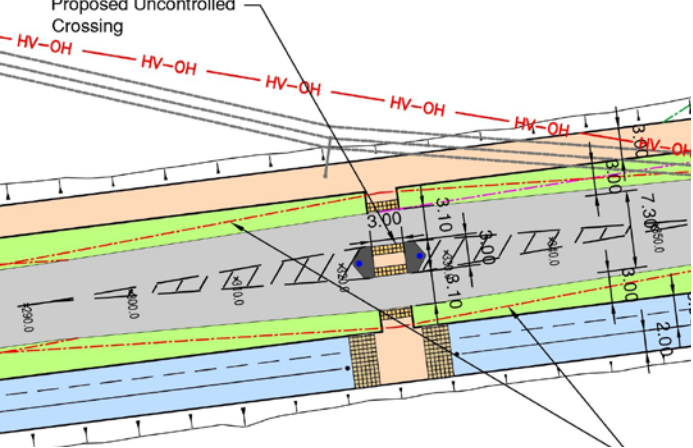
Proposed Controlled Crossing



Proposed Parallel Crossing



Proposed Uncontrolled Crossing







# Bridge Crossing

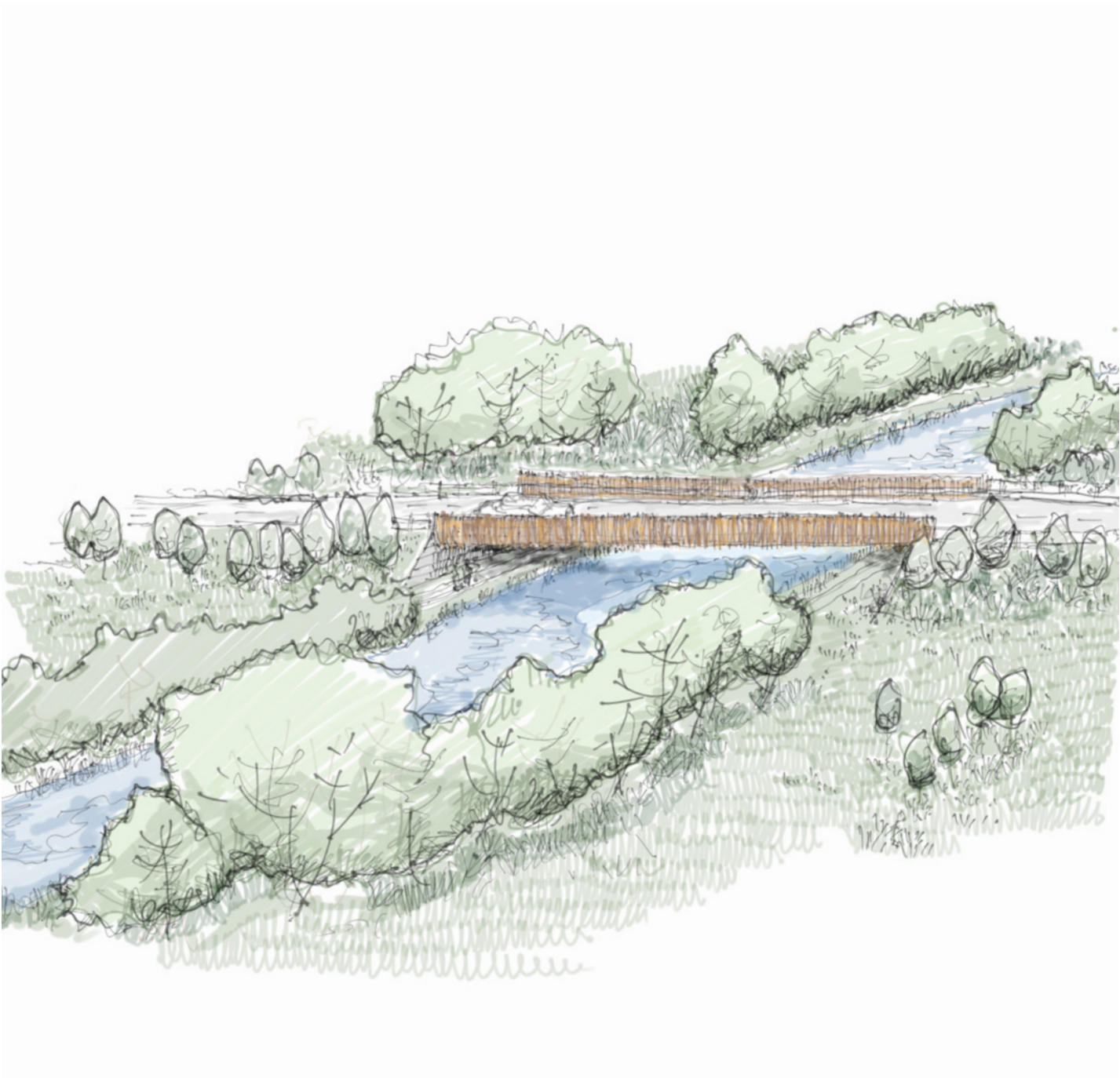
Given the significance of the River Loddon and M4 Motorway bridge crossings, preliminary designs demonstrate deliverability and will enable the effects on surrounding landscape, ecology and other constraints to be more fully appraised.

Unlike all other areas within LGV, the proposed new vehicular crossings of the River Loddon and the M4 Motorway do necessitate the provision of highway infrastructure located within the floodplain. Notably, the carriageway and accompanying footway / cycleway facilities have been designed to ensure that the finished levels are above the 1 in 100 year + 40% climate allowance rainfall events. This will ensure that vehicular and non-car access is continuously achieved, even during extreme periods of rainfall.

As a consequence, the approaches to the bridge crossings and associated embankments do pass through the floodplain on both the western and eastern sides of the River Loddon. The proposed development therefore includes suitable floodplain compensatory elements on land within EcoValley that is adjacent to the

highway corridors. This will ensure there is no detrimental impact on conveyance and floodplain storage and hence the works will have no detrimental impact on flooding elsewhere.

The embankments have been designed with side slopes which are typically no steeper than 1 in 5 gradients. This lessens their visual impact and enables a comprehensive landscaping scheme to be implemented within and alongside the highway corridor. Embankment slopes of 1 in 3 gradients are however proposed in the immediate vicinity of the River Loddon crossing and also on the northern side of the M4 Motorway corridor in order to avoid negative impacts on nearby trees and vegetation.



**Figure 61:** Illustrative sketch of potential bridge over the river Loddon



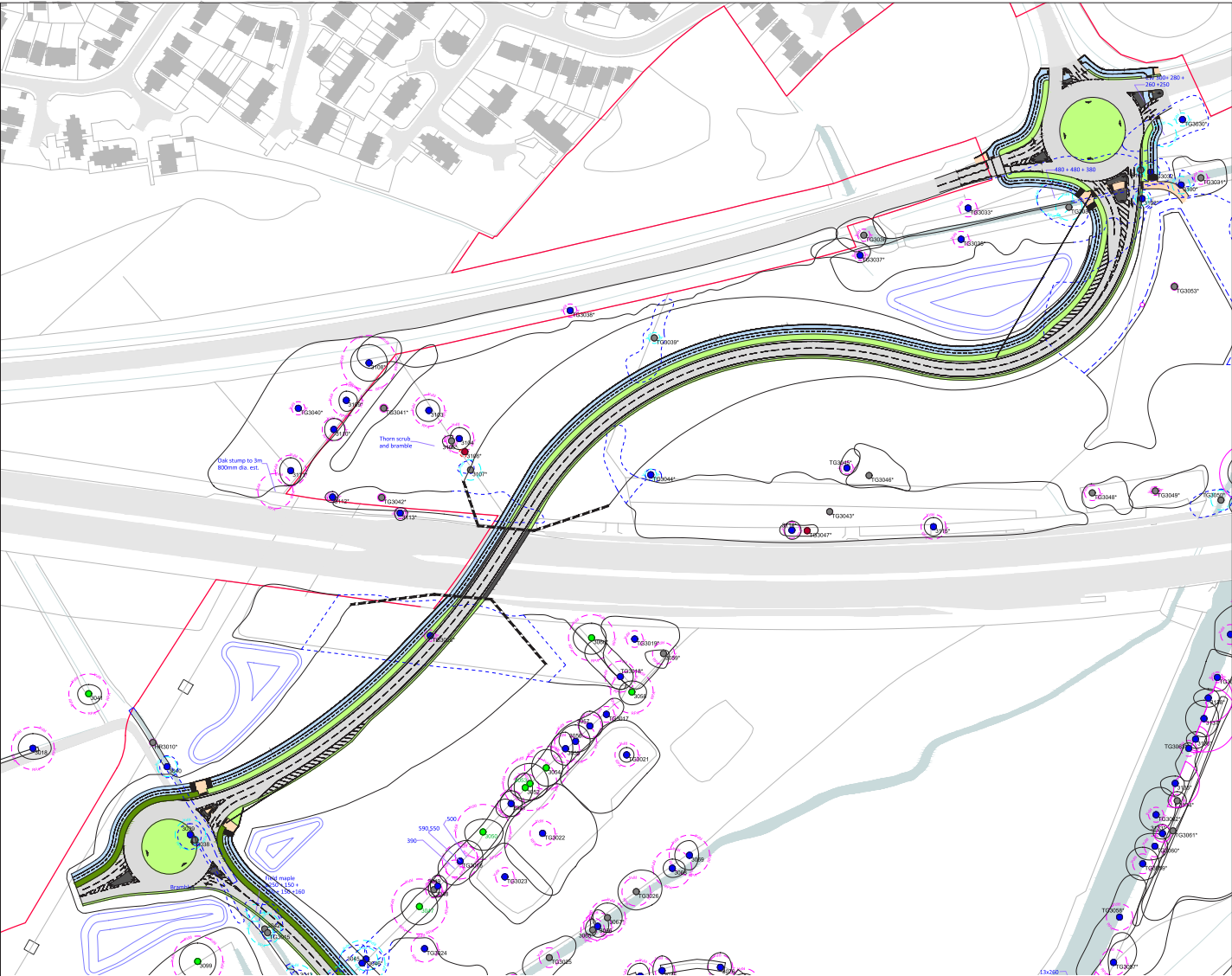
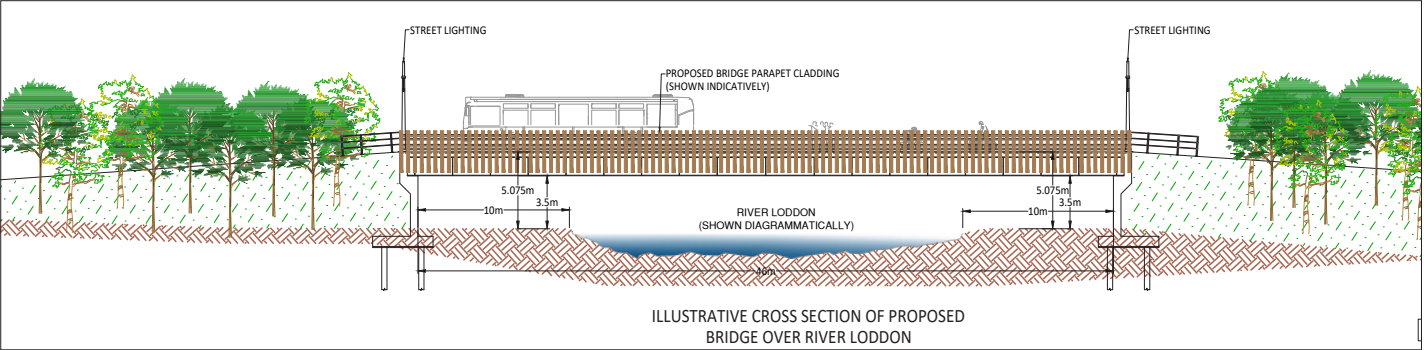
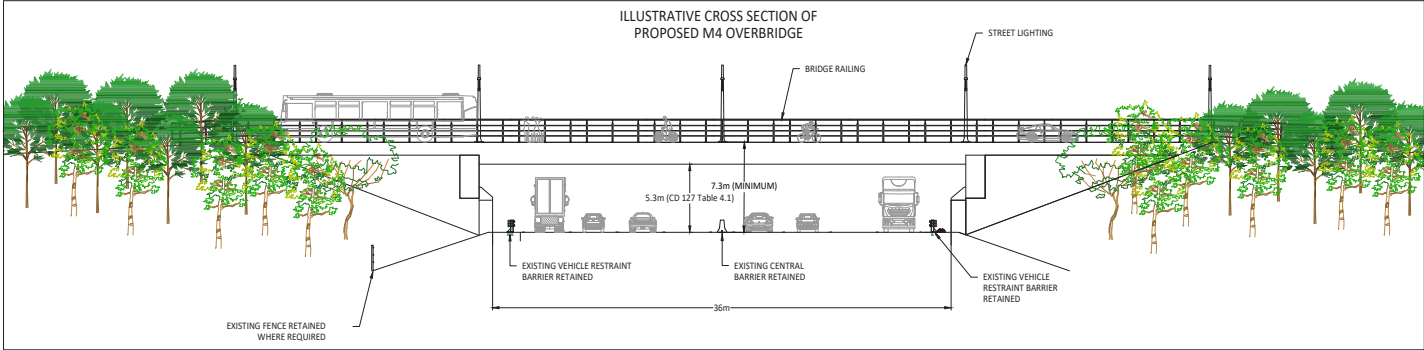


Figure 62: Primary Street Infrastructure - M4 bridge crossing

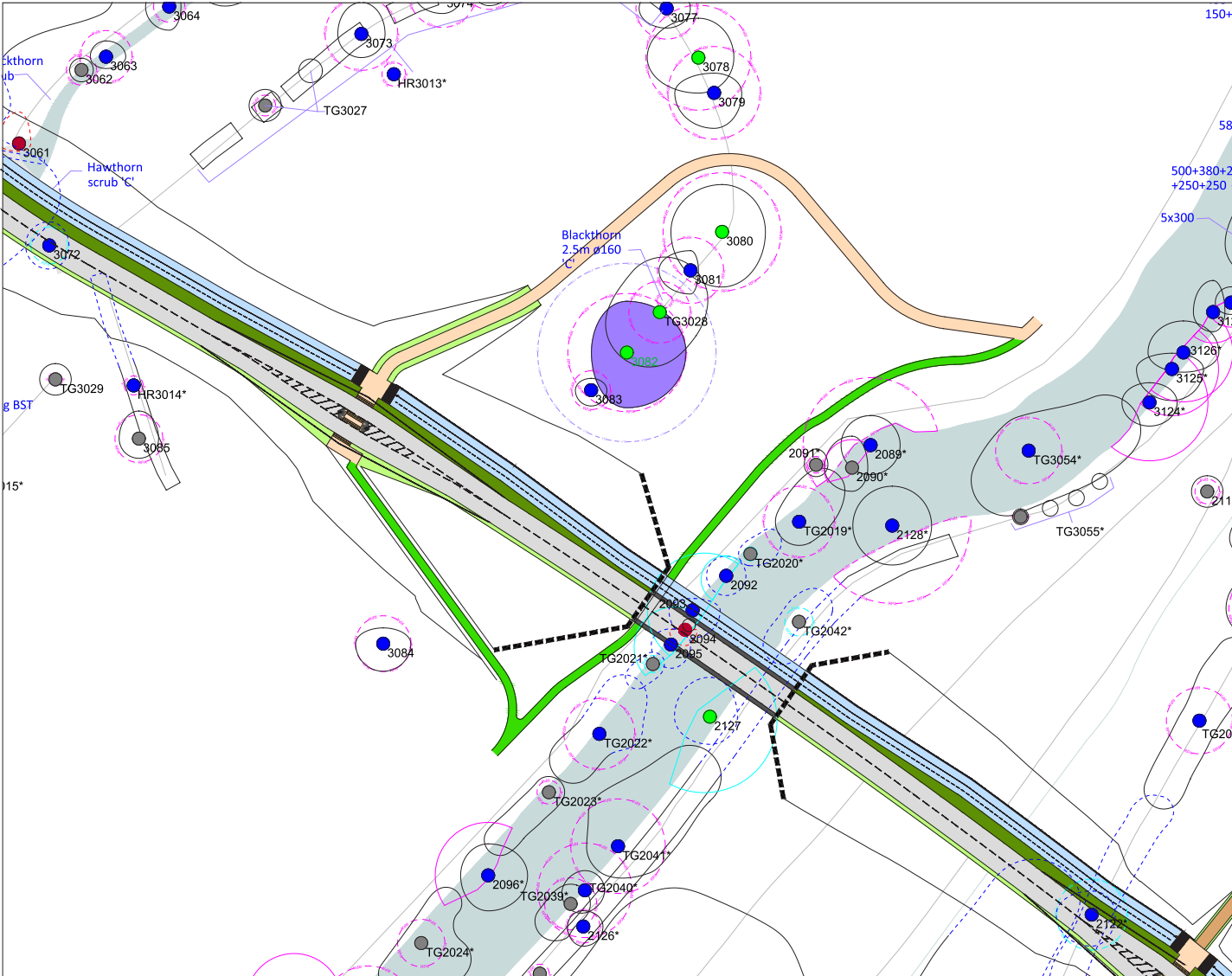


Figure 63: Primary Street Infrastructure - river bridge crossing



# Highway Drainage

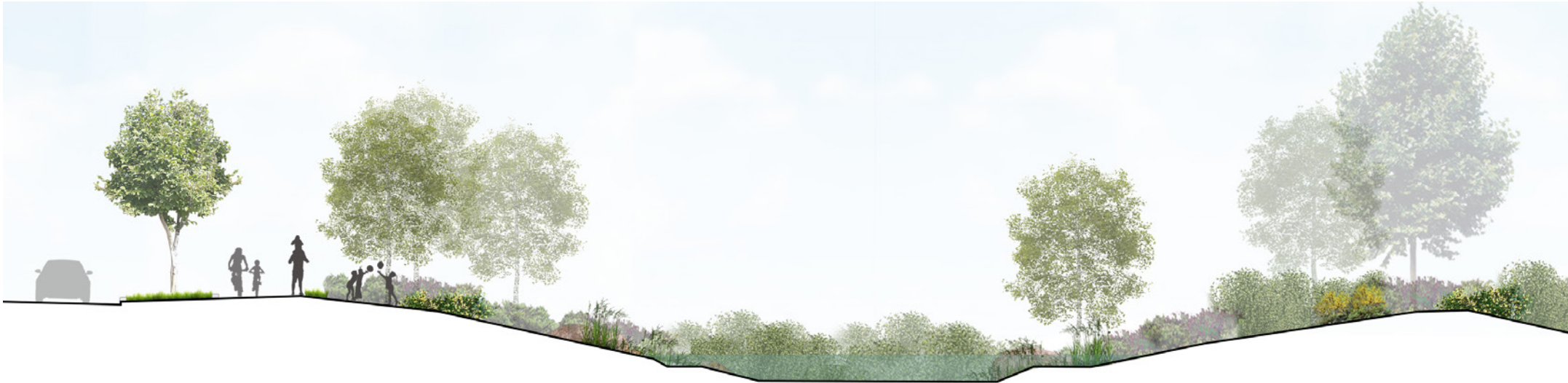
The proposed surface water drainage strategy works to mimic the current situation by collecting and attenuating run off within the site before discharging it at greenfield run off rates to the local water courses.

Run off will be collected using **Sustainable Drainage Systems** (SuDS) including roadside swales, filter drains and porous surfacing before being conveyed to attenuation basins prior to discharge. The attenuation features have been designed to accommodate run-off during periods of heavy rainfall, with allowance made for climate change.

All the SuDS features have been designed as landscape features providing amenity and biodiversity benefits alongside the drainage function. Features will be designed to reflect the landscape typology within which they are located, and may include play elements, features to attract certain species such as permanently wet zones and variations in-side slopes.



Illustrative section of occasionally wet area within drainage attenuation basin



Illustrative section of permanently wet pond within drainage attenuation basin

# Street Lighting

The new access junctions and associated internal highways are to be built to an adoptable standards and offered to WBC for adoption under future Section 38/278 Agreements. These roads shall be lit to WBC’s adoptable street lighting specifications as stipulated with Designs for Lighting (DfL) overarching Lighting Strategy document which supports the application.

The following Lighting Principals will be followed.

**NOTE**  
The lighting principles for “Footpaths and Cycleways” will be the same as Secondary/ Tertiary Roads apart from hinged raise and lower columns being provided.

## Spine Road - Lighting Principles

	Description
Light Source	LED
Luminaire Type	Philips Luma
CCT of Light Source (Kelvin)	3000K - 2700K (Warm White)
Luminaire Tilt	0 degree
Mounting Arrangement	Post top at 8m.
Lighting Control	Telensa 5-pin NEMA Telecell with integral Telensa Dimming Module
Lighting Class	P3 (Average:7.5Lux; Minimum 1.5Lux)



## Secondary Road - Lighting Principles

	Description
Light Source	LED
Luminaire Type	Philips Luma
CCT of Light Source (Kelvin)	3000K - 2700K (Warm White)
Luminaire Tilt	0 degree
Mounting Arrangement	Post top at 6m.
Lighting Control	Telensa 5-pin NEMA Telecell with integral Telensa Dimming Module
Lighting Class	P4 (Average:5.0Lux; Minimum 1.0Lux)

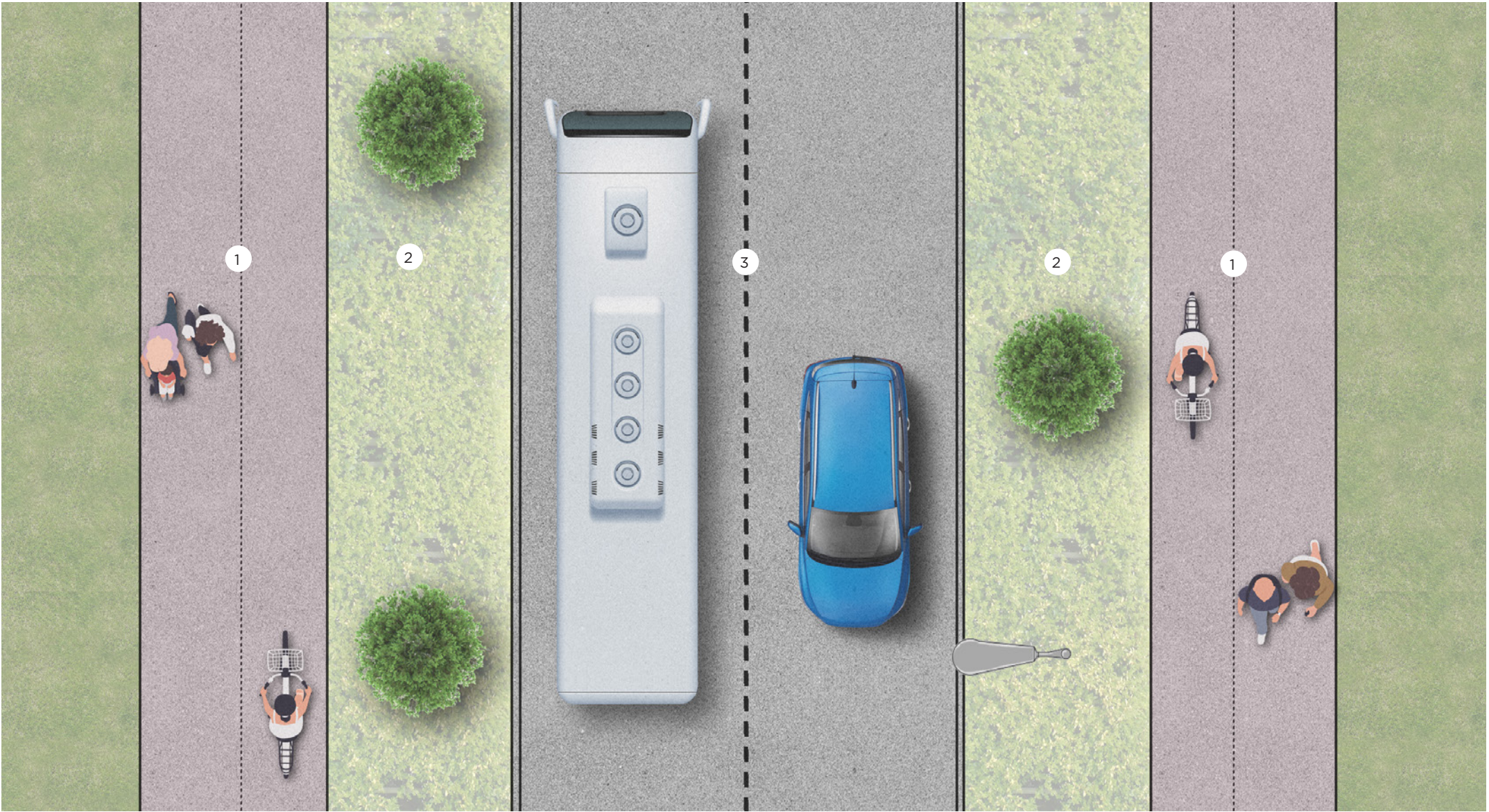


## Tertiary Roads - Lighting Principles

	Description
Light Source	LED
Luminaire Type	Philips Luma
CCT of Light Source (Kelvin)	3000K - 2700K (Warm White)
Luminaire Tilt	0 degree
Mounting Arrangement	Post top at 5m.
Lighting Control	Telensa 5-pin NEMA Telecell with integral Telensa Dimming Module
Lighting Class	P4 (Average:5.0Lux; Minimum 1.0Lux) P5 (Average:3.0Lux; Minimum 0.6Lux)







**Illustrative Landscape Section and Plan**

**Key Elements:**

- 1. Footway/cycleway
- 2. Verge with tree planting
- 3. Carriageway



Planting Palette

The Spine Road will include a range of planting approaches to create a green corridor running through the development.

Planting will also respond to the wider design considerations, such as the creation of SuDS features or habitat areas and technical highway design requirements, such as visibility splays, lighting column positions and signage locations.

Street trees will provide an essential component to the spine road providing a vertical feature giving shade and a sense of scale to the route and adjacent development. Species will also be selected to provide seasonal interest through a range of effects, such as spring blossom and autumn colour.

Proposed tree species will also give consideration to reducing future maintenance requirements, particularly in proximity to the highway with the use of columnar trees or varieties with a compact, mature canopy.

The proposed verges offer an opportunity to contribute to biodiversity enhancement with the use of species rich seed mixes to create a diverse sward combined with wildflowers to provide a seasonal display.

Attenuation basins will be used to store runoff from the spine road, and are to be designed to relate to the surrounding landscape typology. These basins offer the potential to contribute to the diverse range of landscape spaces including plant species tolerant of damp conditions and through the creation of wetland habitats.

Planting associated with the basins would focus on the use of native species to maximise habit creation opportunities and biodiversity across the development.

Spine Road Planting



Acer campestre



Fagus sylvatica Dawyck



Liquidambar



Quercus palustris



Prunus



Emorsgate EM3



Germinal A18 rd verge

Attenuation Basin Planting



Cornus sanguinea



Alnus glutinosa



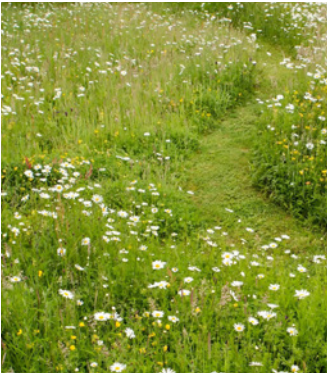
Quercus robur



Salix caprea



Salix cinerea



Emorsgate EL1



Emorsgate EM8



Emorsgate EM3



