



LODDON GARDEN VILLAGE

TRANSPORT ASSESSMENT

UNIVERSITY OF READING

06 OCTOBER 2025





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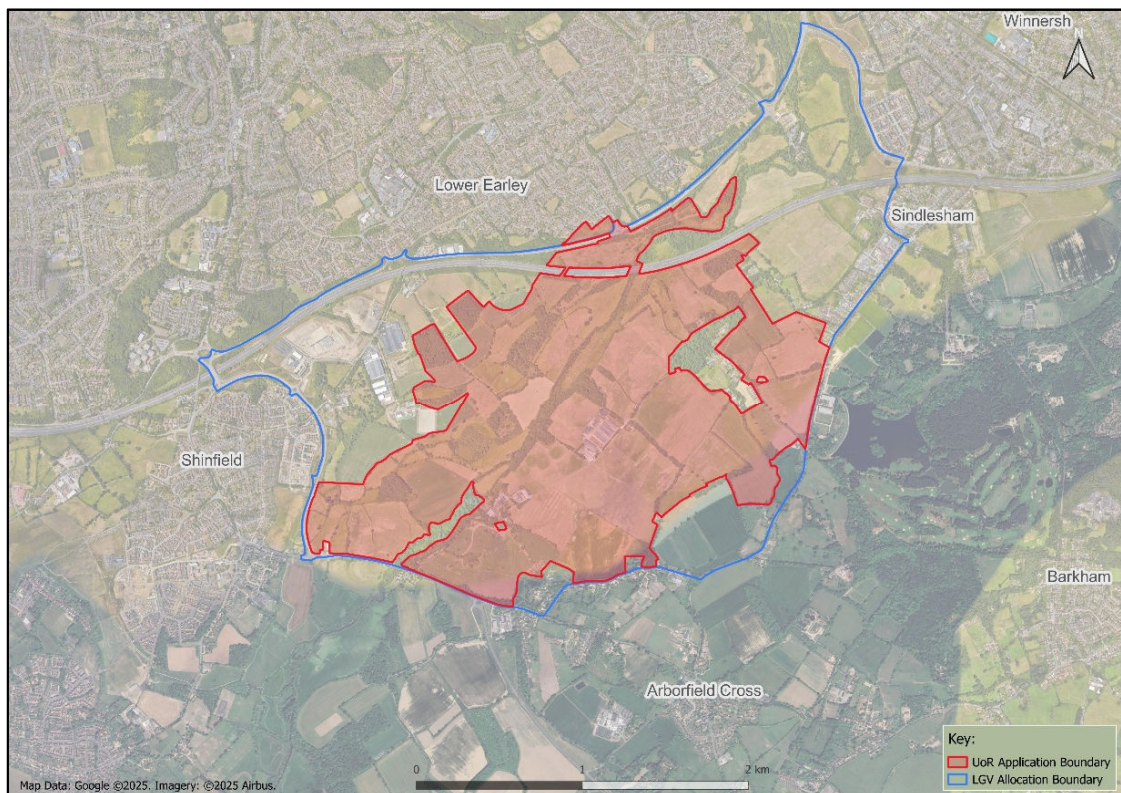
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1.0 Introduction

1.1. Preamble

- 1.1.1. This Transport Assessment (TA) has been prepared by Abley Letchford on behalf of the University of Reading (UoR) in support of a planning application for development of land between Shinfield and Arborfield in Wokingham. The proposed development forms part of the Loddon Valley Garden Village site which is proposed for allocation as a new Garden Community via Policy SS13 within Wokingham Borough Council's Local Plan Update: Proposed Submission Plan (Regulation 19) of 2024.
- 1.1.2. **Figure 1.1** below illustrates the location of the University of Reading development site in relation to the wider LVGV site allocation boundary and the surrounding area. An Illustrative Masterplan of the proposals is presented within **Appendix A**.

Figure 1.1: Site Location



- 1.1.3. The development sought via the University of Reading planning application is for the phased development of a new community at Loddon Garden Village, comprising, in outline:
- up to 2,800 dwellings;
 - up to 100,000 m² of employment space (use classes E(g), B2 and B8), through an extension to the Thames Valley Science Park;
 - two primary schools and one secondary school;
 - one District Centre and one Local Centre;



- *comprehensive green infrastructure and ecological enhancement measures including a Country Park, Suitable Alternative Natural Greenspace, landscaping and public open space;*
- *demolition and clearance of buildings and structures at the Centre for Dairy Research (CEDAR) and at Hall Farm;*
- *refurbishment of retained buildings at Hall Farm;*
- *comprehensive drainage and flood alleviation measures;*
- *internal road network including spine road;*
- *new and modified public rights of way; and*
- *associated utilities, infrastructure, and engineering works, including the undergrounding of overhead lines.*

1.1.4. All matters are to be reserved other than access, which incorporates:

- *a new vehicular access to Lower Earley Way via a new 4th arm to the Meldreth Way roundabout;*
- *a new vehicular bridge over the River Loddon;*
- *a new vehicular bridge over the M4;*
- *a new vehicular access to the A327 Reading Road, via a new arm to the Observer Way roundabout;*
- *a new vehicular access to Thames Valley Science Park; and*
- *an initial phase of internal roads with associated drainage, landscape and engineering works.*

1.1.5. The Planning Application also includes full permission for the change of use of 40.4 hectares of agricultural land to Suitable Alternative Natural Greenspace (SANG), 18.35 hectares of SANG link, and provision of Biodiversity Net Gain measures, the demolition and clearance of 20,809 m² of buildings and structures at the Centre for Dairy Research (CEDAR) and at Hall Farm, the demolition of 3 existing dwellings on Carter's Hill Lane, and the retention of specified buildings at Hall Farm.

1.1.6. This TA has been prepared to accompany the planning application and to assess how the forecast travel demand generated by the proposed development has been considered across all modes — including active travel, public transport and the highway network.

1.1.7. The planning application is also supported by a Framework Travel Plan (FTP), which sets out a comprehensive package of measures to encourage sustainable travel behaviours from the outset, ensuring that future residents, employees and visitors have convenient and attractive alternatives to the private car.

1.2. Background

1.2.1. Land held under the control of the UoR forms part of the wider LVGV allocation identified in Wokingham Borough Council's (WBC) Local Plan Update 2023–2040: Proposed Submission Plan, which was submitted for examination in February 2025.

1.2.2. LVGV has been subject to extensive review and assessment by WBC since at least 2021, when a suite of reports on multiple disciplines was produced for, and by, WBC. LVGV has subsequently been included as a proposed mixed-use allocation in the Reg.18 and Reg.19 Local Plan consultations undertaken by WBC.



- 1.2.3. Substantial analysis of the transport networks has been undertaken in developing the Local Plan, by WBC and the landowners. From the outset, the proposals have been founded on the principle of providing a wide range of facilities on-site, closely integrated with residential neighbourhoods and connected via direct, safe and attractive walking and cycling routes.
- 1.2.4. By prioritising the ability of people to get to the facilities that they need on site by active travel, focus then turned to addressing the residual demand for trips to be made off-site. All parties have collaborated on an approach to developing pedestrian and cycle links to the surrounding area, commercially sustainable access to public transport.
- 1.2.5. It has been consistently recognised that, alongside a strong sustainable transport strategy, a proportion of trips will continue to be made by car to destinations within and beyond Wokingham. To plan for this, WBC — with support from the applicants and other developers — has undertaken multiple rounds of strategic and microsimulation highway modelling during Local Plan preparation, ensuring that appropriate and proportionate improvements to the highway network are identified and tested.
- 1.2.6. This collaborative and evidence-based approach has continued through the Transport Assessment process, ensuring alignment with the plan-led strategy and providing a robust foundation for the planning application.

1.3. Definitions

- 1.3.1. Within this TA, the following terms will be used:
 - **Loddon Garden Village or LGV** – Refers to the proposed development on land held by the UoR and which is the subject of this application.
 - **Loddon Valley Garden Village or LVGV** – Refers to the wider site allocation in policy SS13, and all land holdings within.

1.4. Consultation

- 1.4.1. As noted above, the UoR, and Abley Letchford on behalf of the UoR have been an active participant in shaping the proposals for Loddon Valley Garden Village. This has included extensive liaison with WBC in recent years, as well as engagement with National Highways and other local authorities, including Reading Borough Council.
- 1.4.2. During the preparation of the Transport Assessment, Abley Letchford has, along with i-Transport on behalf of Gleeson, met with WBC highways officers in person on a regular basis. This has ensured a constructive and iterative exchange of ideas, enabling agreement to be reached on key technical matters and helping to shape a transport strategy that is deliverable and policy compliant.
- 1.4.3. As the principal local bus operator, Reading Buses has been engaged throughout. Dialogue between Abley Letchford, Reading Buses and WBC's public transport officers has informed a comprehensive bus strategy, designed to offer an attractive, commercially viable and sustainable option for residents, employees and visitors to LVGV.
- 1.4.4. In addition to the opportunities to comment on LVGV as part of WBC's previous Local Plan consultations, the public has also been able to participate directly in a series of consultation events on LGV. These events were held in March 2025, in locations around Shinfield, Arborfield and at the UoR's Whiteknights campus.

1.5. Report Structure

- 1.5.1. The remainder of this report is structured as follows:
 - **Section 2** describes the site, its current use, and existing access points.



- **Section 3** summarises the transport policy and guidance relevant to the proposals.
- **Section 4** sets out the transport vision for Loddon Valley Garden Village.
- **Section 5** reviews current connectivity by walking, cycling and public transport.
- **Section 6** explains how travel demand has been forecast for the development.
- **Section 7** describes the sustainable and active travel strategy for the site.
- **Section 8** considers the accessibility of education, retail, leisure, employment and public transport facilities.
- **Section 9** presents the public transport strategy for the site including proposed bus services.
- **Section 10** tests alternative scenarios for trip internalisation and mode share.
- **Section 11** summarises the existing local highway network and safety record.
- **Section 12** sets out the proposed vehicular access and on-site road hierarchy.
- **Section 13** identifies off-site highway improvements linked to the scheme.
- **Section 14** explains the traffic modelling approach and scenarios tested.
- **Section 15** assesses the local highway network impacts associated with the site for the 2040 future year scenario.
- **Section 16** considers impacts on the strategic road network of the development for the 2040 future year scenario.
- **Section 17** presents the proposed phasing of the transport and highway infrastructure for the development.
- **Section 18** considers the local highway network impacts associated with the development for an interim 2032 future year scenario.
- **Section 19** provides the summary and conclusions of the assessment.

2.0 The Application Site

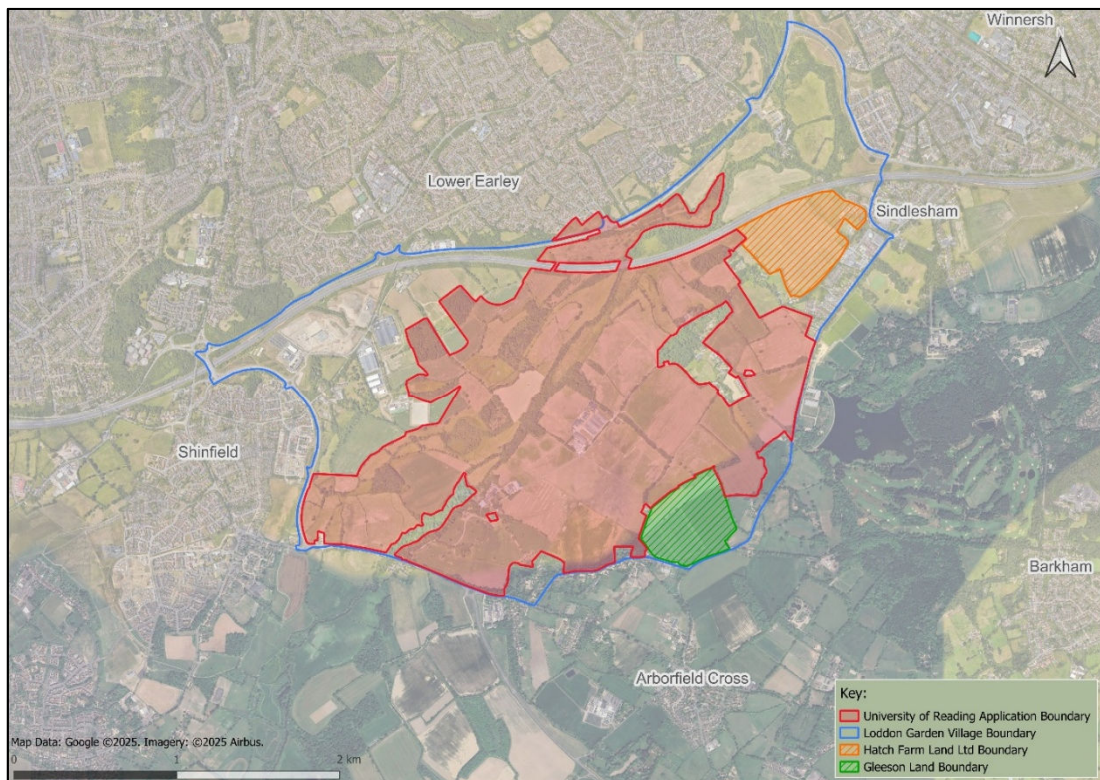
2.1. Introduction

- 2.1.1. This section sets out the location of the Application site and red line application boundary, existing land use and current means of access.

2.2. Site Context

- 2.2.1. The site forms part of WBC's proposed Loddon Valley Garden Village allocation. As shown in **Figure 2.1** below the land held by the University of Reading (UoR), which is the subject of this application, represents the largest single component of the proposed allocation. Other key parcels identified include the area to the south-east being promoted by Gleeson Land and also the parcels in the north-east being promoted by Hatch Farm Ltd. There are also other smaller parcels in the vicinity of Carter's Hill that are under the control of the Brazil, Seal and Foxcroft families.

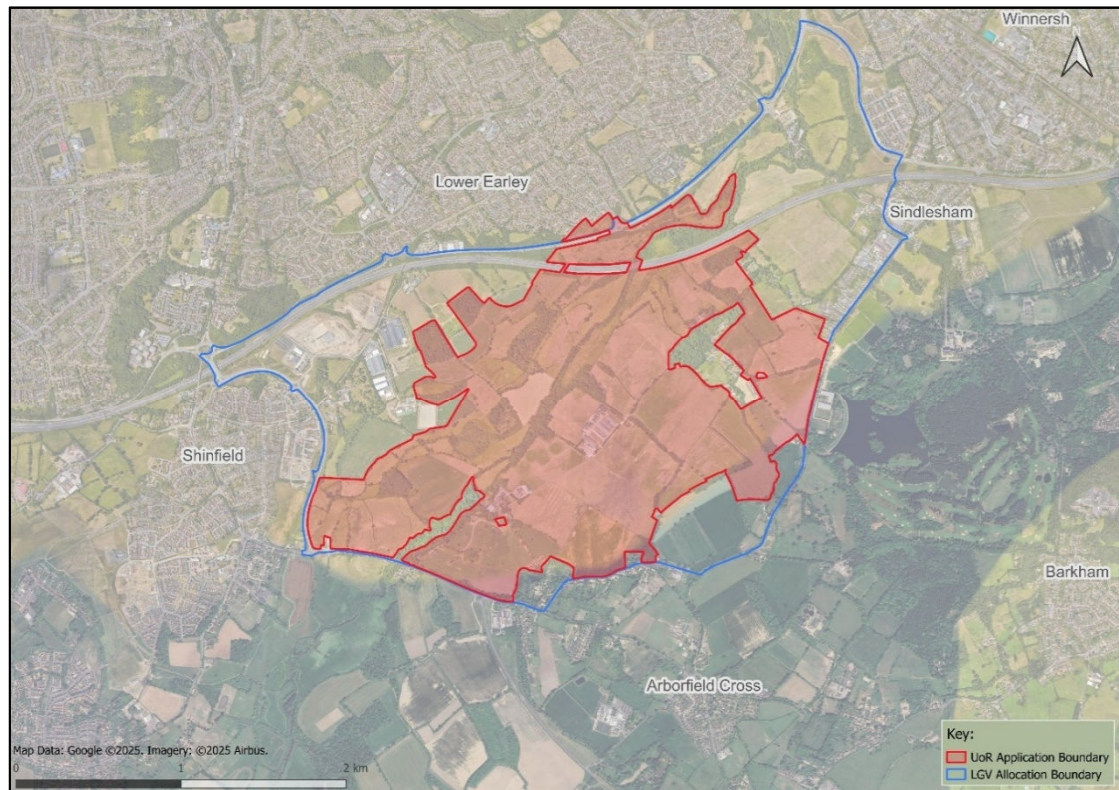
Figure 2.1: LVGV Allocation Boundary and Key Land Holdings



2.3. Site Location

- 2.3.1. As shown in **Figure 2.2** below, the LGV site is located in Wokingham Borough, immediately south of the Reading urban area. The northern boundary is defined by the B3270 Lower Earley Way. To the north-east the boundary follows Mill Lane, and to the east it follows Mole Road.
- 2.3.2. The southern boundary of the site is formed by the A327, while to the west it adjoins the Shinfield Eastern Relief Road and Thames Valley Science Park.
- 2.3.3. The M4 motorway runs through the site on a west-to-east alignment and the River Loddon broadly on a north-to-south alignment.

Figure 2.2: Site Context



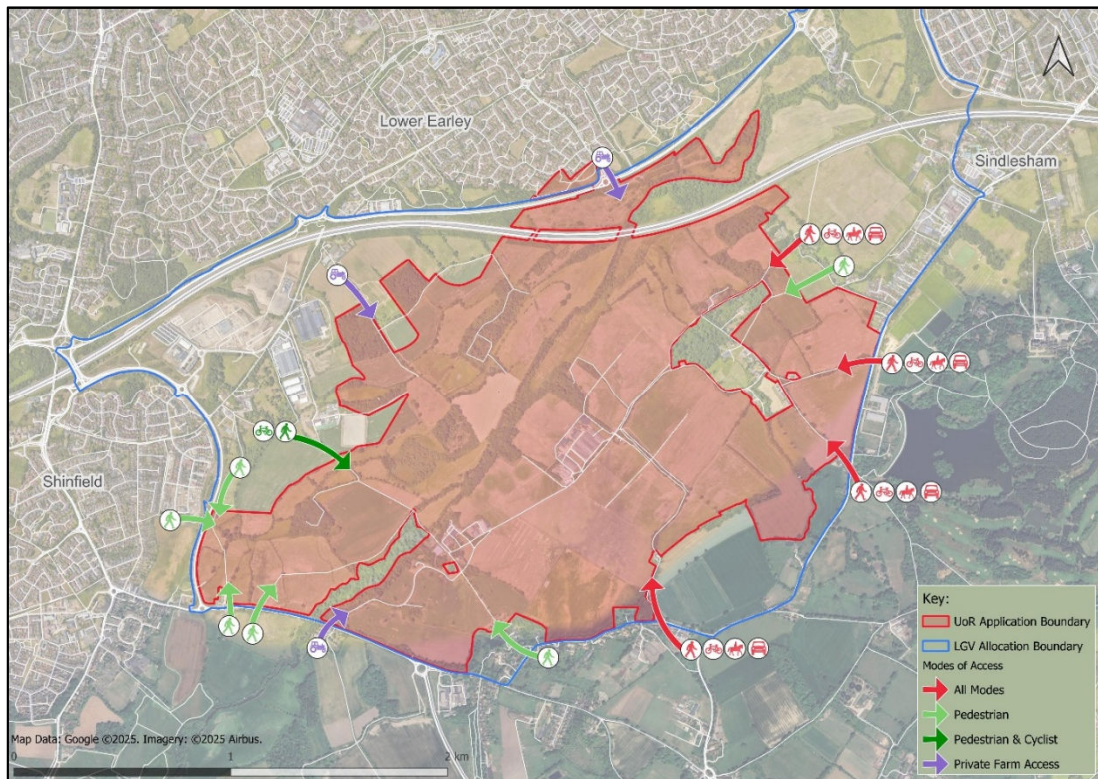
2.4. Existing Land Use

- 2.4.1. The UoR's landholdings within the LVGV allocation site are primarily focused on Hall Farm, an active dairy farm operated by the University of Reading's School of Agriculture, Policy and Development. The site largely comprises open agricultural land and associated farm buildings, together with the UoR's Centre for Dairy Research.
- 2.4.2. The remainder of the land within the wider LVGV allocation site is also predominantly in agricultural use.

2.5. Existing Site Accesses

- 2.5.1. There are multiple locations from which the site can be accessed by various modes. These are shown on **Figure 2.3** below.

Figure 2.3: Existing Access Locations



- 2.5.2. A vehicular access is taken from the southern boundary via the minor arm of a priority T-junction with the A327 Arborfield Road. Pedestrian and cycle access is also possible at this location, although there is no dedicated infrastructure at present.
- 2.5.3. Additional access points include a gated vehicular entrance to the east of the Shinfield Eastern Relief Road, together with a number of Public Rights of Way (PRoW) that connect the site to routes such as the A327 Arborfield Road and Cutbush Lane East.
- 2.5.4. On the eastern boundary, byways such as Copse Barnhill Lane provide access for pedestrians, cyclists, equestrians and vehicles.
- 2.5.5. Access to the Hatch Farm parcel is via the priority T-junction on Mill Lane and via the PRoW network, including Betty Grove Lane. In the south-eastern corner of the allocation, the Gleeson parcel is accessed via gated accesses from Church Lane and Mole Road.

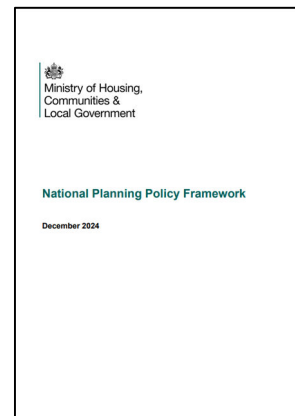
3.0 Policy and Guidance Review

3.1. Introduction

- 3.1.1. A review of relevant National, Regional and Local policy has been undertaken, referencing the following policy and guidance documents identified as relevant to a proposed development of this nature.

3.2. National Policy

National Planning Policy Framework, December 2024



Policy Context	Relevance to this Assessment
The NPPF requires that transport issues are considered from the earliest stages of plan-making and development proposals. A vision-led approach should be applied to identify transport opportunities that support the creation of well-designed, sustainable and attractive places.	WBC has considered the key transport issues and opportunities associated with LVGV since initial consideration of the site for allocation. WBC and the site promoters have collaborated to define a vision for how LVGV should be a well-planned and connected development, utilising the strengths of existing transport infrastructure and improving and enhancing this where appropriate.
In promoting sustainable travel the NPPF highlights the need for planning policies and decisions to: • Make transport considerations a core part of early engagement with local communities; • Ensuring patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places; • Understanding and addressing the potential impacts of development on transport networks; • Realising opportunities from existing or proposed transport infrastructure, and changing transport technology and usage – for example in relation to the scale,	• Transport has been a key focus of workshops and consultations with the local community through the WBC's Local Plan process and the lead up to the LGV planning application. • The indicative layout for the outline application has built on the earlier work carried out by WBC, to develop a legible, direct network of routes which connect to destinations people want to go to. • This Transport Assessment undertakes a comprehensive assessment of the impacts of the proposals on the transport network. • As is explained in the Transport Strategy section of this report, the proposals seek to use opportunities to enhance existing infrastructure whilst providing new



Policy Context	Relevance to this Assessment
location and density of development that can be accommodated. - Identifying and pursuing opportunities to promote walking, cycling and public transport use; and - Identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gain	infrastructure to make the use of sustainable modes more attractive. The Transport chapter of the Environmental Statement specifically addresses the environmental impacts of the transport proposals for LGV.
Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes.	LVGV has been chosen as a proposed site allocation by WBC because of the opportunities which its location affords, being located close to Reading and Wokingham, as well as settlements like Winnersh and Shinfield. This affords the opportunity to provide links to those locations to ensure travel via sustainable modes is attractive. The use of higher density development in parts of LGV supports this.
Developments should give highest priority to pedestrian and cycle movements, followed by facilitating access to public transport via both a general design and specific facilities. Spaces should be designed to ensure that they are safe, secure and attractive while minimising the possibility of conflicts between pedestrians, cyclists and vehicles.	The indicative layout follows appropriate guidance and best practice to enable pedestrians and cyclists to follow direct routes to the facilities within LGV and LVGV that they will be using regularly, whilst utilising safe infrastructure designed to accommodate forecast demand.
Developments should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios.	This Transport Assessment demonstrates that the residual cumulative impacts of the proposals on the road network is not expected to be severe.



National Planning Practice
Guidance



Policy Context	Relevance to this Assessment
The National Planning Practice Guidance supports the National Planning Policy Framework. It highlights the importance of transport assessments in planning applications, as these should align with national policy. The planning process should actively manage patterns of growth, maximise the use of public transport, walking and cycling, and focus significant development in locations that are, or can be made, sustainable. Assessments should be proportionate to the size and scope of the proposed development to which they relate and build on existing information wherever possible. Further to this they should be tailored to particular local circumstances.	The policy and guidance section of the Transport Assessment provides a summary of how the LGV development aligns with both national and local planning policy. The site is well located to benefit from the established local bus and rail networks. The Transport Assessment demonstrates that the LGV development has been designed to prioritise walking, cycling, and public transport, thereby supporting the creation of a sustainable development. WBC has considered the key transport issues and opportunities associated with LVGV since initial consideration of the site for allocation. The Transport Assessment has been shaped through ongoing engagement with WBC to reflect evolving proposals and response to local circumstances. Strategic modelling has been undertaken at a scale proportionate to the development, with highway mitigation and infrastructure proposals tailored to WBC's policies and strategic objectives.



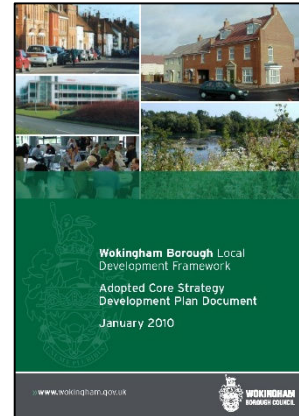
Department for Transport
Strategic Road Network and the
Delivery of Sustainable
Development, 2022



Policy Context	Relevance to this Assessment
Support sustainable economic growth while maintaining the efficiency of the SRN.	The assessment demonstrates that the proposed development will not compromise SRN function, and will contribute to economic growth through improved access and connectivity.
Ensure that new development reduces the need to travel by private car and is focused on locations that are, or can be, made sustainable.	The TA shows how the proposed development has been planned in such a way that facilities required on a daily basis will be located within walking and cycling distance of houses, and attractive infrastructure will connect them.
Incorporation of zero-emission vehicle infrastructure	The proposed development will ensure appropriate provision of EV charging infrastructure for each dwelling, as well as in employment and public parking.
Use Travel Plans as an effective means of incentivising the use of sustainable modes of transport.	A Framework Travel Plan accompanies this application. Future reserved matters applications will see this framework refined into a detailed Travel Plan for implementation.

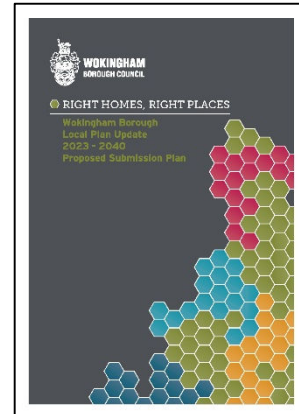
3.3. Local Policy

Wokingham Borough Core Strategy, 2010-2026



Policy Context	Relevance to this Assessment
The Wokingham Borough Core Strategy was adopted in January 2010 and sets out a vision for how the Borough will develop in the period to 2026.	The proposed development has been designed to deliver an accessible and well-connected neighbourhood, prioritising walking and cycling. The movement strategy reduces reliance on private vehicles through the integration of active travel corridors across the site.
CP1 requires sustainable development that is attractive, functional, accessible, safe, secure and adaptable, with the aim of enhancing the area's overall sustainability while minimising environmental impacts and ensuring access to facilities	The development supports this policy incorporating a layout that prioritises walkable neighbourhoods, new local centres, and green infrastructure. The internal site connectivity is reinforced by a comprehensive active travel network that supports accessibility to services without reliance on the private car. The active travel routes are supported by a series of signalised and uncontrolled crossings with associated refuge islands along desire lines, prioritising the safety of active travel users.
CP4 requires proposals to demonstrate that sufficient infrastructure capacity exists, or can be delivered, to support development. This includes roads and other transport requirements. CP6 seeks to manage travel demand rather than design solely for private car use. The policy aims to ensure sustainable development by giving people genuine choice in transport modes and reducing reliance on private vehicles.	A phased infrastructure strategy has been informed by WBC's WSTM modelling. This includes new bus provision, enhanced walking and cycling links, and mobility hubs to support multi-modal accessibility. The site is well placed to benefit from the established bus and rail network local to the site. The development provides a comprehensive active travel network with direct connections to local facilities and transport services, reducing the need to travel by private car.
CP10 requires improvements to the transport network, including enhancements to public transport quality and frequency, and measures to increase cycling, including provision of new cycle paths.	The proposed development responds to CP10 through promotion of shared and segregated cycle routes within the site that connect into the wider cycle network. New bus services and the strategic distribution of bus stops ensure that most dwellings are within a five-minute walk of a bus stop.

**Wokingham Borough Local Plan
Update, 2023-2040 – Proposed
Submission Plan**

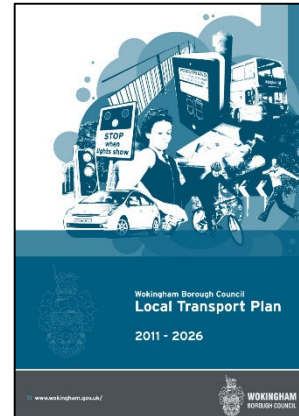


Policy Context	Relevance to this Assessment
The Local Plan Update was submitted for Regulation 19 consultation in 2024 and is intended to replace the Core Strategy upon adoption.	The UoR proposals reflect the sites allocations under Policy SS13. The development considered the connectivity policies during the creation and evolution of the transport strategy and sustainable place-making.
Policy SS13 identifies the Loddon Valley Garden Village as an allocation for a “beautifully and imaginatively designed community” including housing, employment, social and physical infrastructure.	The UoR proposals fully reflect the allocation under Policy SS13, with the transport strategy developed in parallel with sustainable place-making objectives. Active travel corridors, new bus services to Reading and Wokingham, and direct cycle routes to stations ensure the Garden Village is not car-dependent.
Policy SS17 supports transport ambitions that will deliver active travel, public transport and road network improvements.	The TA demonstrates provision of mobility hubs, bus priority measures and integrated pedestrian and cycle infrastructure. These will be supported by Travel Plan targets, monitoring and enforcement mechanisms to secure long-term behavioural change.
Policy C1 ensure that developments promote active and sustainable travel, requiring high-quality walking and cycling environments and prioritised infrastructure for non-motorised users. Developments should also support the uptake of electric and zero emissions vehicles.	The LGV movement strategy prioritises active travel modes with homes within good walking distance to local bus stops, facilities and local centres. EV charging is provided across all phases in line with national standards. These measures directly support modal shift away from private cars.
Policy C2 addresses mitigation of transport impacts and highway safety, requiring schemes to minimise car dependency and align with sustainable development goals.	The development is supported by a detailed strategic modelling that demonstrates transport infrastructure accommodates the demand with associated junction/highway improvements.
Policy C3 requires development to provide high-quality, continuous and safe walking and cycling infrastructure that aligns with the Local Cycling and Walking Improvement Plan (LCWIP) and Greenways strategy.	The proposals respond to Policy C3 by delivering a continuous and safe active travel network linked to the LCWIP and Greenways Strategy. Pedestrian and cycle routes connect directly to local centres and schools, with controlled crossings on primary roads to reduce severance and prioritise walking and cycling as the default choice for local trips.



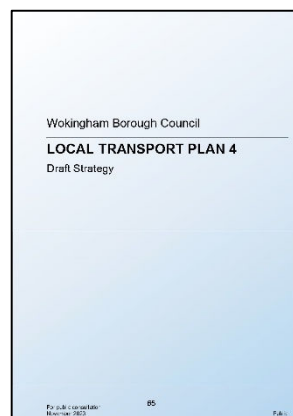
Policy Context	Relevance to this Assessment
Policy C5 sets out the standards for EV charging in new developments and supports parking strategies to reduce reliance on private cars.	The EV charging strategy will meet appropriate Building Regulations and standards. Public charging will be provided, enabling use by residents, visitors, and service vehicles. This approach supports decarbonisation and reduces reliance on petrol and diesel cars.
Policy C6 encourages smart transport solutions such as shared mobility, digital wayfinding, and innovations that reduce carbon and support modal shift.	LGV will incorporate multi-modal Travel Hubs which could offer EV car club vehicles, e-bike hire, and real-time journey information. These hubs will be located at key access points to intercept trips and provide seamless first/last mile connections to bus services. Digital wayfinding and mobility management tools can encourage smarter travel behaviour, reducing reliance on private cars and supporting long-term modal shift.

Wokingham Borough Third Local Transport Plan (LTP3) (2011-2026)



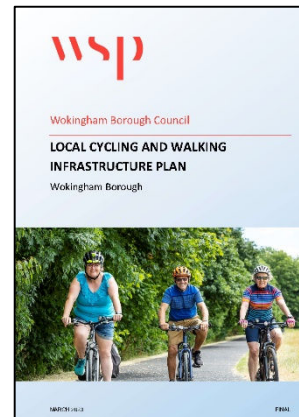
Policy Context	Relevance to this Assessment
LTP3 covers the 15-year period from 2011 to 2026. Its main objective is to deliver a cost-effective and inclusive transport network that enhances the Borough's economic, social and environmental prospects, while promoting the safety, health and wellbeing of its users. It seeks to provide a resilient and safe highway network that balances capacity for all users, supports the Borough's economic growth and promotes sustainable travel. LTP3 promotes walking and cycling as healthy, sustainable travel modes, through connected, convenient and safe pedestrian and cycle networks, integrated with existing infrastructure and supported by cycle parking at key destinations. It supports an integrated and inclusive public transport network, providing a convenient, acceptable, reliable and affordable alternative to private car use. It seeks to enable people living, working and visiting the Borough to make safe, sustainable and informed transport choices It aims to manage travel demand to ensure people maintain a high level of accessibility to destinations, while minimising congestion and its associated impacts.	The LGV proposals align with LTP3 by delivering a transport strategy that integrates new bus services to Reading and Wokingham, direct cycle connections to the Greenways and LCWIP routes, and safe pedestrian links to local centres. Infrastructure, supported by detailed modelling, will ensure highway capacity is maintained while promoting modal shift through a robust Travel Plan. The LGV network is designed with multiple access points to disperse traffic and prevent overloading of any single junction. Dedicated segregated cycleways and pedestrian routes provide safe alternatives to vehicle trips. A comprehensive active travel network permeates the site, with crossings provided along desire lines to reduce severance and encourage active, healthy lifestyles. These routes connect directly into Wokingham's and Reading's wider cycle networks. Public transport accessibility is reinforced through the provision of bus services through the site. The distribution of bus stops ensures that the majority of dwellings are within a five minute walking distance, enabling reliable access to local and regional services. In addition to the transport strategy, the development will be supported by a Travel Plan promoting mode choice through real-time travel information, journey planning tools, and community travel initiatives. Mobility Hubs, Wayfinding and signage within the site will help support sustainable travel modes. LGV includes schools, centres and bus stops within walking distance of most homes, reducing the need to travel by car for daily needs. For longer journeys, enhanced bus services and rail connections provide sustainable alternatives, supported by Travel Plan measures to embed behavioural change.

**Wokingham Borough Local
Transport Plan 4 – Draft for
Consultation**



Policy Context	Relevance to this Assessment
LTP4 sets out the council’s strategic approach to delivering a safer, more inclusive and sustainable transport system, structured around three key themes: Create Healthy and Safe Places, Reduce Environmental Impacts, and Develop the Economy.	The LGV development has been designed in line with LTP4’s strategy, prioritising sustainable modes and aligning with the ambition to create healthy communities.
Create Healthy and Safe Places - Prioritises people-focused street design, casualty reduction, active travel, School Streets, and healthier travel behaviours by promoting walking, wheeling and cycling as safe, accessible options for short trips.	The design of the development prioritises walking and cycling throughout the site and to the surrounding local areas. The design includes safe walking and cycling routes to schools and local centres within the development, with crossings provided along key desire lines.
Reduce Environmental Impacts - Supports Wokingham’s 2030 net zero goal by promoting modal shift, reducing car use, improving air quality, integrating green infrastructure, and accelerating the transition to electric vehicles and sustainable travel choices.	The movement strategy combines public transport and active travel measures with a permeable street layout that reduces car dependency. EV charging infrastructure across the site provides residents with a clear alternative to fossil fuel vehicles.
Develop the Economy - Seeks inclusive growth through improved access to jobs, education and services, by enhancing public transport, strategic road and rail connectivity, and delivering reliable, sustainable transport networks that reduce congestion and support productivity.	LGV provides sustainable access to local employment areas, education and local facilities. The bus strategy will connect the site to Wokingham, Reading and rail services at Winnersh triangle, supporting sustainable travel to regional destinations such as London. Improvements to the local highway network and creation of new active travel routes supports the reduction in congestion and reinforce the borough-wide transport strategy.

Wokingham Borough Local Cycling and Walking Infrastructure Plan



Policy Context	Relevance to this Assessment
The Wokingham Borough LCWIP sets out a borough-wide strategy for increasing walking and cycling identifying key active travel corridors and infrastructure improvements. Its aims include reducing transport-related emissions, supporting modal shift for short trips and addressing barriers to accessibility.	The LGV proposals align with the LCWIP by promoting a connected active travel network that integrates with the wider key corridors identified in the plan.
The LCWIP Vision identifies priority routes and schemes for investment in walking, cycling, and wheeling infrastructure to reduce car dependency, decarbonise transport, and promote healthy, inclusive travel.	The proposed development will provide strategic cycle corridors creating direct links to facilities within the site and to adjacent areas. All routes will be designed in accordance with LTN 1/20 standards, ensuring safe, continuous, and legible connections that encourage modal shift.
The plan aligns with WBC's Climate Emergency Action Plan, promoting active travel to cut transport-related emissions.	Infrastructure will enable walking and cycling for everyday trips, supported by a comprehensive Travel Plan providing residents with information on sustainable transport choices.
It responds to public health challenges by encouraging active travel for short trips, supporting healthier lifestyles and reducing air pollution exposure.	The LGV layout includes safe, direct pedestrian and cycle routes to schools, parks, and local centres, encouraging active lifestyles. Segregated cycleways, secure cycle parking, and controlled crossings reduce barriers to active travel, supporting healthier communities and improved air quality.
The LCWIP has been developed with the Greenways Programme in mind, supporting the delivery of the borough-wide Greenways network, linking development sites, towns, countryside, and employment locations through multi-user routes. Appendix D of the policy sets out the active travel, cycling and walking networks within Wokingham.	The active travel strategy has been developed with the Greenways vision in mind, linking seamlessly into the wider borough network. This ensures the site connects into attractive leisure and commuter routes. The identified primary and secondary routes set out within the Illustrative Masterplan have informed the alignment of active travel infrastructure within the LGV development, ensuring continuous connections through the site that integrate with Wokingham's wider walking and cycling network.

Policy Context	Relevance to this Assessment
Appendix E of the policy sets out the infrastructure improvement plans.	The infrastructure improvements within and beyond the site have also informed the LGV movement strategy, ensuring compatibility with the borough's long-term cycling and walking priorities.

Reading Borough Council Transport Strategy 2040



Policy Context	Relevance to this Assessment
The Reading Transport Strategy 2040 establishes a vision for a net zero, inclusive, and sustainable transport system by prioritising active travel, enhancing public and shared transport, reducing through-traffic and car dependency, improving air quality, and integrating smart mobility solutions to support health, access to opportunity, and economic resilience across the Reading urban area and its cross-boundary travel corridors.	The LGV development design supports the shared goal of reducing car dependency and enabling cross-boundary modal shift. The development contributes to the wider objectives by providing a high-quality active travel network and public transport connectivity that integrate with Reading's transport networks.
Policy RTS 1 prioritises walking, cycling, and public transport over private car use to tackle congestion, poor air quality, and the climate emergency.	LGV has been designed to prioritise walking and cycling, creating a permeable site with bus stops and local facilities within reasonable walking distances, reducing a reliance on the private car.
Policy RTS 6 encourages sustainable travel to school, supporting school travel planning, safer access, and targeted interventions.	The layout of the LGV development and associated active travel strategy creates a permeable site that encourages walking and cycling. Where there is anticipated high foot traffic such as near schools and local centres, the active travel network is supported by signalised crossings. A Framework Travel Plan will accompany the Transport Assessment.
Policies RTS 8, 9 and 10 encourage public transport by investing and building upon the established bus and rail network.	The site benefits from proximity to the existing bus and rail networks, in line with RTS8–10. Development proposals include provision of bus services, reinforcing sustainable connectivity to Reading and Wokingham.
Policy RTS 15 supports the delivery of high-quality, safe, direct and connected walking and cycling networks across Reading. Enabling a mode shift from private car use, reducing severance, and improving access to key destinations.	In support of RTS15, the design incorporates continuous walking and cycling routes that connect directly to local centres and facilities. Safe crossings and segregated infrastructure reduce severance and prioritise sustainable modes.



3.4. Summary

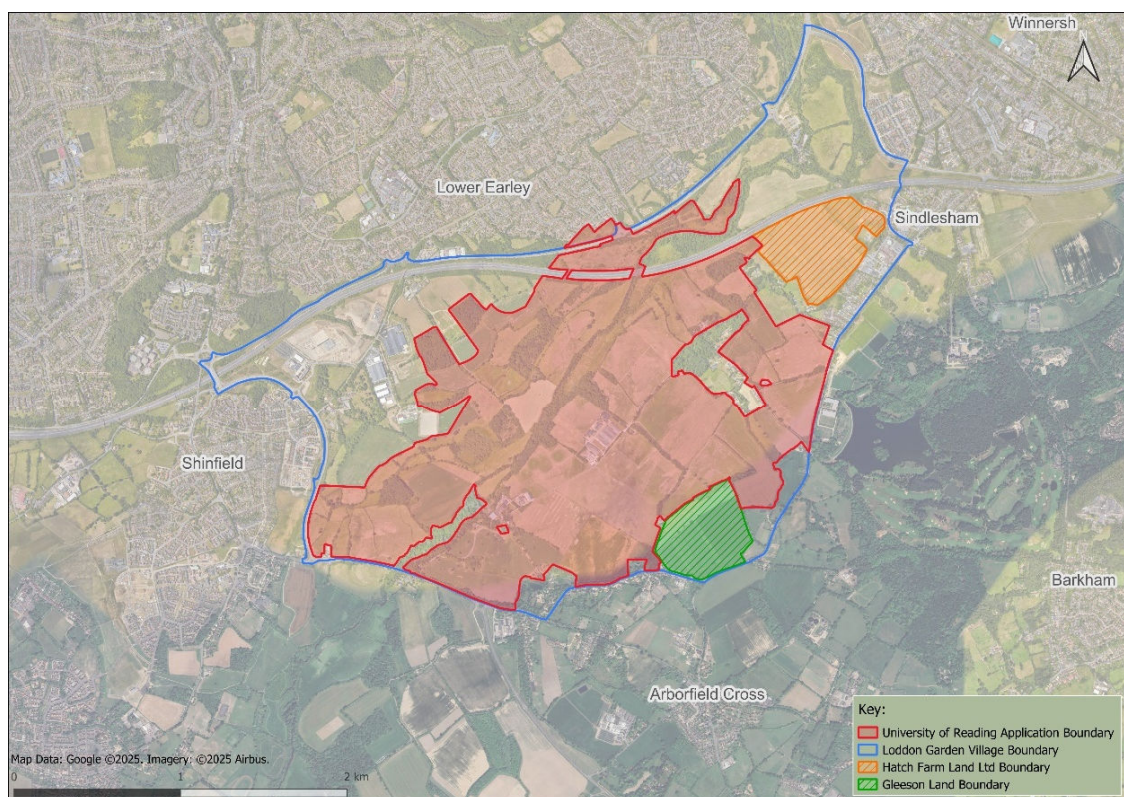
- 3.4.1. The LGV and wider LVGV proposals are aligned with national and local transport policy objectives. The development delivers safe, inclusive and well-connected access for all users, with a clear priority given to walking, cycling and public transport in order to minimise reliance on private car travel. Strong connections are provided to local facilities and services, and the transport strategy integrates active travel corridors, new bus services and enhanced public transport accessibility.

4.0 Transport Vision for Loddon Garden Village

4.1. Introduction

- 4.1.1. This section provides a short interpretation of what the overarching transport vision for LVGV will look like, and importantly how the various sites which make up LVGV will contribute to a cohesive, consistent and joined up transport strategy for the wider area.
- 4.1.2. The University of Reading parcels comprise the majority of the Loddon Garden Village Site as can be seen from **Figure 4.1** below which also illustrates other main component parts which include land at the south east being promoted by Gleeson Land and parcels at the north-east being promoted by Hatch Farm Land Ltd.

Figure 4.1: University of Reading Parcels within Loddon Valley Garden Village (LVGV)



4.2. Vision Led Masterplan Development

- 4.2.1. A vision-led approach begins with a clear long-term ambition for the type of place and community to be created, rather than simply responding to existing travel patterns. It aligns transport infrastructure and mobility choices with broader goals such as sustainability, active travel uptake, net zero objectives and placemaking. By identifying the desired outcomes — including reduced car dependency, enhanced public realm and improved accessibility — transport interventions are proactively designed to support and shape development. This approach is embedded in national and local planning guidance, promoting integrated land use and transport strategies.
- 4.2.2. The proposals for LVGV have sought to be based on a vision led approach wherever possible, ensuring that transport planning and masterplanning are integrated to deliver a sustainable and accessible community in line with policy objectives.



- 4.2.3. A fundamental principle which has framed the development proposals for Loddon Garden Village is that the residential areas are to be highly accessible to the comprehensive range of land uses being promoted which includes primary and secondary schools, employment development, neighbourhood commercial and retail uses as well as recreational and leisure facilities. This philosophy helps to maximise the number of shorter distance trips that can occur and therefore capitalises on the potential for these journeys to be undertaken by non-car modes of travel. The provision of high quality active travel infrastructure along key routes then helps to ensure that the potential for maximising walk and cycle trips can be realised.
- 4.2.4. Travel by public transport then represents the preferred sustainable travel choice for longer journeys which lie beyond a reasonable walk and cycle distance. Accordingly, a comprehensive public transport strategy for Loddon Garden Village has been formulated to ensure that future residents and other users will benefit from a high level of accessibility to bus services that operate to key destinations beyond the development such as Reading and Wokingham town centres and rail stations.
- 4.2.5. The clear focus on encouraging travel by sustainable travel modes will act to reduce the quantum of vehicular movements that arise onto the local and strategic highway networks. Notwithstanding, whilst the proposals for Loddon Garden Village seek to maximise connectivity for non-car modes of travel, it is also important that a satisfactory level of highway provision is allowed for within the internal layout of the development which, in turn, affords satisfactory access arrangements onto the surrounding highway network.

4.3. On-Site Facilities

- 4.3.1. A central element of the transport strategy is to ensure that the LVGV community can meet as many of their daily needs as possible within the site itself. This is achieved through the provision of a wide range of facilities and services that reduce the need for off-site trips. These facilities are purposefully located within convenient walking and cycling distance of homes, supported by high-quality active travel infrastructure to make such journeys safe, direct and attractive.

4.4. Effect on Travel

- 4.4.1. The LGV proposals will deliver a majority of the dwellings at LVGV, together with employment, retail and other facilities, supported by an active travel-led movement network. Given its central location, LGV is pivotal in establishing key active travel links both within LVGV and to the wider area.
- 4.4.2. The active travel corridors across LVGV will provide residents and visitors with direct, convenient access to amenities and employment opportunities. As the number and variety of facilities expand, a growing proportion of trips will be internalised within the site. This will encourage greater levels of walking and cycling, alongside increased use of local bus services. Collectively, these measures will help minimise traffic impacts, reduce environmental effects associated with car use, and contribute to a healthier, more active community.

4.5. Component Development Parcels

University of Reading Land

- 4.5.1. The land subject to this application and Transport Assessment is under the control of the UoR. It lies at the heart of the LVGV allocation and represents the largest single landholding. Its central location makes it pivotal to the delivery of facilities and to providing connections both between the adjoining land parcels and with the wider area. The UoR land will therefore play a key role in securing sustainable connectivity and delivering genuinely attractive travel choices.



- 4.5.2. As set out in this Transport Assessment, the UoR proposals will provide an integrated mix of homes, green space, education and employment opportunities, all fully supported by a safe, convenient and legible movement network embedded within the development. Crucially, this network will integrate seamlessly with surrounding infrastructure, ensuring effective connections between LVGV and the wider area.

Hatch Farm Land

- 4.5.3. Situated in the north-eastern part of the allocation, the Hatch Farm land provides an important multimodal connection to areas to the north of the site. The primary street will link the UoR land with Hatch Farm, accommodating vehicular traffic alongside pedestrians, cyclists and public transport services.
- 4.5.4. Additional active travel routes will be delivered away from the carriageway, providing safe and direct connections to facilities within the wider LVGV and beyond. A Local Centre will be located within the Hatch Farm land, serving residents of the allocation and offering wider benefits to the neighbouring community of Sindlesham.

Gleeson Land Ltd

- 4.5.5. Located in the south-eastern corner of the allocation, the Gleeson land will provide a connection to Mole Road together with access to the Public Rights of Way (PRoW) network to the east. Internal connections and active travel links will ensure that residents can access the facilities delivered within the University of Reading (UoR) land, thereby reducing reliance on the private car for local trips.

5.0 Site Connectivity

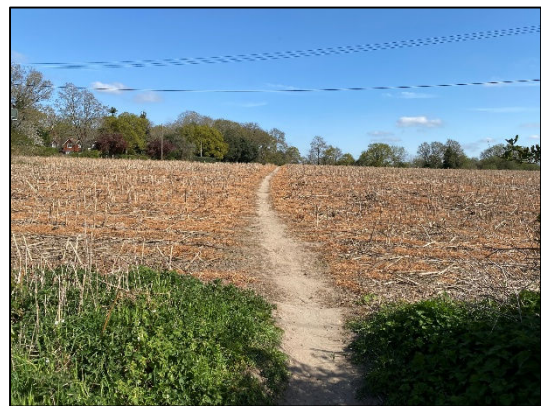
5.1. Introduction

- 5.1.1. This section considers site connectivity and access to existing amenities by active travel and public transport, within LGV, LVGV and in the surrounding area. The review provides an overview of the current situation, setting the context for the complementary transport strategies for active travel and public transport described in **Section 7.0** and **Section 9.0** of this Transport Assessment.

5.2. Pedestrian Connectivity

Within Site Boundary

- 5.2.1. The site comprises predominantly rural land with agricultural fields, scattered properties, and the River Loddon running diagonally across it. The internal active travel network is well established through a series of public rights of way, supporting pedestrian connectivity across the site. A key connection to the wider network is provided by the Cutbush Lane East pedestrian and cycle bridge over the M4, linking the site northwards to Lower Earley Way and westwards to the Shinfield Eastern Relief Road via a quiet cycle route.



Lower Earley Area

- 5.2.2. Lower Earley is located immediately north of the site and benefits from a comprehensive footway and cycle network within its urban setting. The M4 motorway presents a barrier to north-south connectivity from the site to Lower Earley. Two crossing points via the Shinfield Eastern Relief Road and the aforementioned Cutbush Lane East bridge currently provide pedestrian and cycle access across the motorway, linking into Lower Earley's shared-use paths and Wokingham Cycle Route CR5.

Shinfield Area

- 5.2.3. Shinfield lies west of the site and is well connected via formal pedestrian and cycling infrastructure along its main corridors and through recent housing developments. The Shinfield Eastern Relief Road forms part of the route to the site and benefits from shared-use paths and formal crossing points, enabling access to the A327 corridor and facilities within the village. The area is also supported by shared-use routes into and around the Black Boy gyratory, providing continuous connections to Reading.



Winnersh Area

- 5.2.4. Winnersh is located northeast of the site and is accessed from the site via Mill Lane, B3030 King Street Lane and Lower Earley Way. While pedestrian provision is good along the eastern part of Mill Lane, the western section is constrained, particularly at narrow River Loddon bridge crossings. Alternative higher-quality routes via the B3030 and Hatch Farm Way link the site to Winnersh and Winnersh Triangle railway station, where wider active travel connectivity is available.

Arborfield Area

- 5.2.5. Arborfield lies south of the site. Immediately to the south pedestrian infrastructure along the A327 is limited. Connectivity improves east of the Observer Way roundabout, with shared-use paths on Observer Way to Arborfield Green and footway to Arborfield Cross. Church Lane and Sindlesham Road lack formal footways although some PRowS offer informal access routes in this area. While relatively close to the site, Arborfield's pedestrian connectivity is limited by the surrounding road network and rural character, with areas outside the settlement having little provision for active travel.



Barkham Area

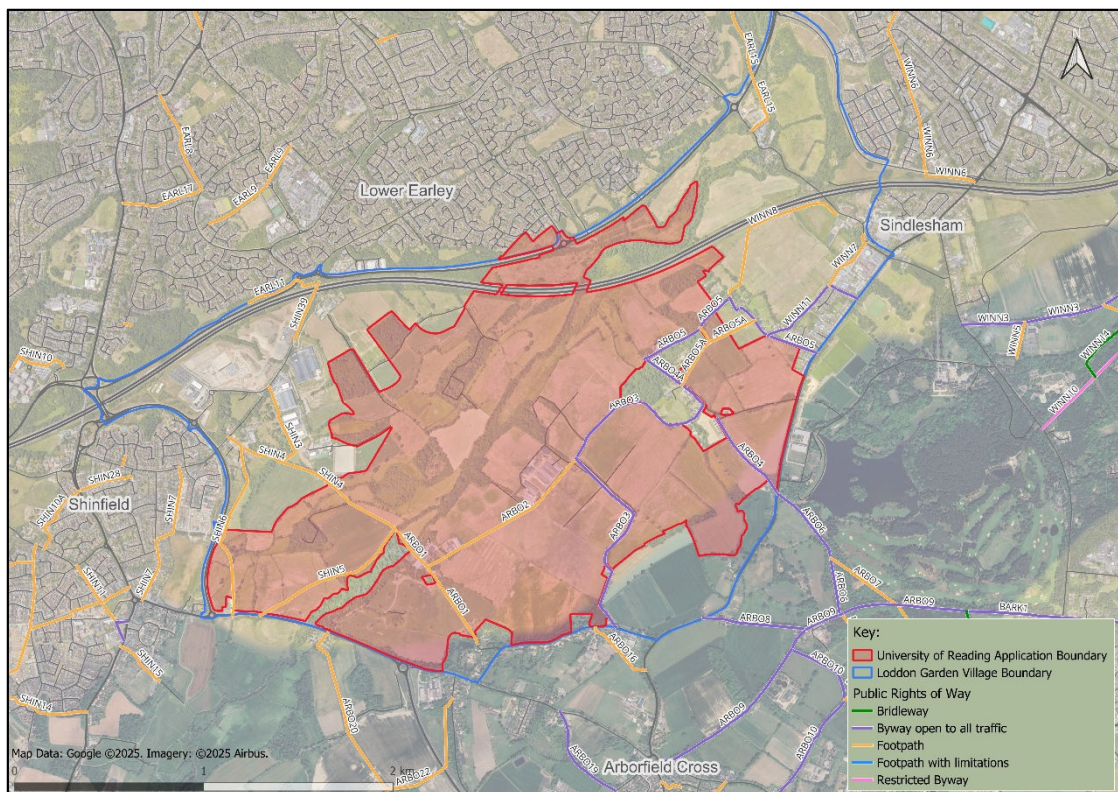
- 5.2.6. Barkham lies to the south-east, separated from the site by predominantly rural land. Access is constrained by Mole Road, which lacks formal crossings and footways. Pedestrians must cross Mole Road and use rural byways such as Ellis's Hill and Gravelpithill Lane, which are surfaced with compacted earth and loose gravel and are unlit. Within Barkham itself, the pedestrian network improves, linking into Wokingham's wider footway system.



5.3. Public Rights of Way Network

- 5.3.1. There is a network of Public Rights of Way (PRoW) running through the site, both to the east and west of the River Loddon. These routes support walking, cycling and horse riding, and interconnect within the site to provide a continuous east-west link. Within the boundary of the development site, there is a total of circa 12.6km of PRoW.
- 5.3.2. **Figure 5.1** illustrates the Public Rights of Way within and around the area local to the development site, broken down based on the classification of PRoW.

Figure 5.1: Local Public Rights of Way



- 5.3.3. As can be seen from **Figure 5.1**, the PRoWs are most concentrated south towards Arborfield, west towards Shinfield and east towards Wokingham. There are fewer PRoW to the north, but this does not adversely affect connectivity as this area adjoins the built-up area of Lower Earley. One PRoW routes via an overpass over the M4, connecting into Lower Earley and Reading. Other routes run north-east towards Winnersh Triangle railway station.
- 5.3.4. There are no bridleways within the site. The nearest are around Barkham Manor Farm to the south-east. Several Byways Open to All Traffic (BOATs) are located within the south-eastern corner of the allocation, providing connections into the wider bridleway network.
- 5.3.5. The BOATs within the Loddon Valley Garden Village allocation boundary are classified as unsurfaced links within the Wokingham Area Cycle Maps. Where PRoW cross open farmland, ground conditions can be uneven or unstable, particularly where livestock or horses are present.
- 5.3.6. Individual footpaths across the site vary in character:
- SHIN5 and SHIN6 (south-west) and WINN8, ARBO5A and ARBO5B (north-east) run through farmland and are more suited to leisure walking.
 - WINN7 provides a grassed path from Gipsy Lane to Mill Lane behind the Nirvana Spa and gym.
 - SHIN39 is an asphalt surfaced link crossing the M4 between Cutbush Lane East and Lower Earley.
 - SHIN3 is a shaded route adjacent to Shinfield Studios, recently widened and resurfaced with a hoggin surface.
 - SHIN4, ARBO1 and ARBO2 follow residential or farm access roads with mixed asphalt and gravel surfacing.
 - A new 3.0m wide asphalt-surfaced permissive path has recently been provided parallel to SHIN4.
- 5.3.7. Overall, most of the PRoW within the site provide a continuous connection from the site into both the wider PRoW network and road network with pedestrian facilities available. However, there are few disconnected links, such as SHIN5 which connects onto a section of Arborfield Road with no available footways. Additionally, ARB01 and ARB03 connects onto Church Lane which also has no pedestrian facilities.

5.4. Cycling Connectivity



5.4.1. The local area is served by a mix of cycle infrastructure, including off-carriageway shared-use paths, on-road cycle lanes and designated quiet routes. These facilities are concentrated in the surrounding urban areas of Shinfield, Lower Earley and Winnersh. Together, they provide a framework for integrating the development site into the wider cycle network while also identifying current gaps and missing links.

5.4.2. A review of the Wokingham Borough cycle network has been undertaken helping identify routes that Wokingham considers to be quiet links and unsurfaced links. The latest web maps from "myjourneywokingham" have been used.

- 5.4.3. **Figure 5.2** illustrates the existing cycle infrastructure local to the site.

Figure 5.2: Local Cycle Network



Source: myjourneywokingham Cycle Network Map, May 2025

- 5.4.4. **Figure 5.2** identifies that currently there is limited formal cycle infrastructure within the site boundary. However, the site benefits from close proximity to established cycling corridors, creating notable opportunities for integrations.
- 5.4.5. There are multiple existing off-carriageway shared cycle routes bordering the site boundary, these include Lower Earley Way to the north, Hatch Farm Way to the north-east, Shinfield Eastern Relief Road to the west and along Observer Way to the south. These shared use cycleways are typically 3m in width and provide facilities that are separated from motor vehicle traffic.
- 5.4.6. Within the site, the Cutbush Lane East bridge provides a car free connection for pedestrians and cyclists over the M4 motorway. The bridge links to Lower Earley Way to the north and to the Shinfield Eastern Relief Road to the west via Cutbush Lane East which is classified as a quiet link.
- 5.4.7. Wokingham Borough's cycle map classifies the BOAT within the eastern quadrant of the site as unsurfaced links and, while accessible to cyclists, are currently insufficient in terms of surfacing, year-round usability, and legibility for less confident users.
- 5.4.8. There is currently a notable disconnection from the Arborfield cycle network linking to other local areas. There is a 3m wide shared cycle route off-carriageway along Observer Way. However, once cyclists reach the Observer Way roundabout, cyclists must route onto the A327 carriageway, reducing comfort and continuity.
- 5.4.9. In summary, although formal cycle infrastructure within the site is currently minimal, the surrounding network offers strong integration potential. The LVGV allocation represents an opportunity to bridge existing gaps, strengthen east-west and north-south connections, and deliver a coherent and attractive cycle network in line with WBC's LCWIP and Greenways Strategy.

5.5. Non-Motorised User Audit

- 5.5.1. A full Non-Motorised User (NMU) audit has been undertaken of the existing routes within the LVGV allocation site as well as local routes to facilities and amenities which could be frequently used by people travelling to and from LVGV. This audit provides a significantly greater level of detail than is contained in the TA.

- 5.5.2. The audit reviews the existing condition and connectivity of the routes, highlighting any constraints or gaps in provision. From this, the report identifies potential opportunities for improvement which can be considered to support high-quality, inclusive, and connected active travel networks.
- 5.5.3. The Non-Motorised User audit is comprehensive, reflecting the interfaces between UoR's land, other parts of the allocation, and the surrounding area. Many of the items discussed in the audit are reflected in the active travel strategy discussed in **Section 7.0** of this Transport Assessment. Not all measures will be directly addressed through the UoR application or those of other landowners; however, the most appropriate interventions to resolve key connectivity issues form part of the proposed strategy.
- 5.5.4. The Non-Motorised User audit is provided as **Appendix B** of this report.

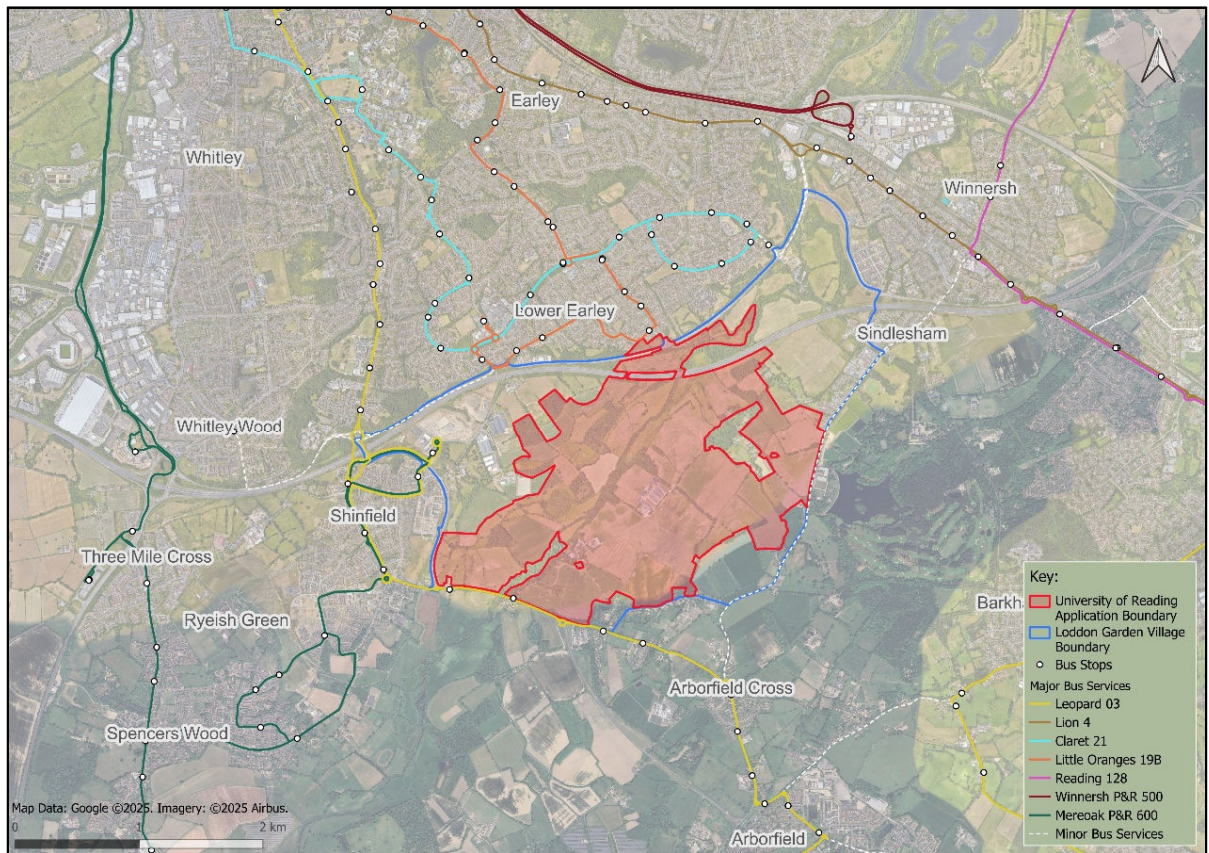
5.6. Existing Bus Services

- 5.6.1. A number of local bus services operate in the surrounding area, with stops located along key corridors that encapsulate the development site. The location of these stops has been considered when identifying pedestrian and cycle desire lines for the development site.
- 5.6.2. For this exercise, local bus routes that have a regular bus timetable operating throughout the day and that can be used by the general public have been classified as a Major bus service. Local bus routes that are less frequent or are for a specific trip type, such as school services, have been classified as a Minor bus service.



- 5.6.3. **Figure 5.3** illustrates the major local bus routes by service and the minor bus services.

Figure 5.3: Existing Bus Services



Source: Reading Buses, February 2025 / NaPTAN, February 2025

- 5.6.4. The routes shown are operated by Reading Buses and Thames Valley Buses and operate with a service frequency of at least 60 minutes.
- 5.6.5. The Leopard 3 service operates along the A327 Arborfield Road, adjacent to the southern frontage of the University of Reading (UoR) site. Services run every 15 minutes on weekdays between Reading and Arborfield, serving key destinations including Reading railway station, the town centre, the Royal Berkshire Hospital and the UoR's Whiteknights campus. One bus per hour extends via Thames Valley Science Park, and another per hour provides a direct connection to Wokingham town centre.
- 5.6.6. Additional services to Thames Valley Science Park are provided by Route 600, operating hourly from the A33 Mere oak Park & Ride via Shinfield and Spencers Wood, continuing into Reading along the A33 corridor.
- 5.6.7. Other services of note which operate within 400m of the site include the Lion 4 / 4a bus services, both of which route along the A329 Reading Road corridor to the north-east of the development site between Reading and Bracknell via Wokingham. Each of these services operate at a 30-minute frequency during weekdays, with a combined 15-minute bus frequency on the A329 corridor between Reading, Wokingham and Bracknell.
- 5.6.8. The Route 19b service operates at an hourly frequency between Central Reading and the Lower Earley District Centre via the Royal Berkshire Hospital. Similarly, the Claret 21 bus service routes through Earley and Lower Earley to the north of the M4 motorway before providing a connection into Central Reading. The Claret 21 bus service operates at a 15-minute frequency on weekdays.



- 5.6.9. The Route 128 bus service operates to the north east of the site and runs between central Reading and Wokingham via Twyford, Sonning and Woodley. This service operates at an approximately hourly frequency on weekdays.
- 5.6.10. The aforementioned bus routes are supplemented by a series of less frequent services that operate in the area. As can be seen in **Figure 5.3** above, these include a daily service along the A327 Arborfield Road at the southern frontage of the UoR site and also the weekly service along Mole Road which forms the eastern boundary.
- 5.6.11. **Table 5.1** below summarises the routings and frequencies of bus services that currently operate near to the LVGV allocation.

Table 5.1: Existing Local Bus Services

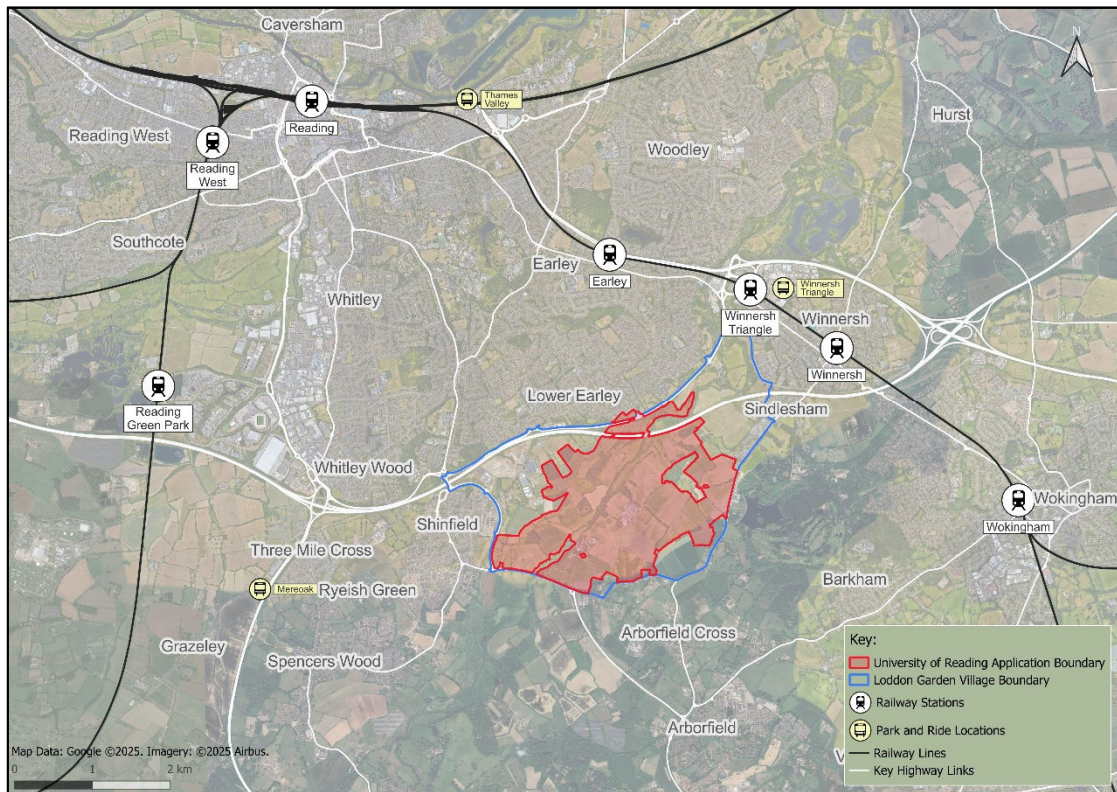
Route Number	Route	Approximate Frequency (Peak Periods)		
		Weekday	Sat	Sun
3	Reading – RB Hospital – TVSP - Arborfield	60 mins	-	-
3	Reading – RB Hospital – Shinfield - Arborfield	15 mins	20 mins	30 mins
	Reading – RB Hospital – Shinfield – Arborfield - Wokingham	30 mins	60 mins	60 mins
4	Reading – Wokingham – Great Hollands – Bracknell	30 mins	30 mins	60 mins
4a	Reading - Wokingham, John Nike Way - Bracknell	30 mins	30 mins	
19b	Reading – RB Hospital – Earley Gate – Lower Earley	60 mins	60 mins	-
21	Reading – University – Lower Earley	15 mins	15 mins	20 mins
128	Reading – Woodley – Twyford – Wokingham	60 mins	120 mins	-
500	Central Reading – Winnersh Triangle Park and Ride via Cemetery Junction	15 mins	15 mins	60 mins
600	Reading – MereOak P&R – Spencers Wood	60 mins	60 mins	-

Source: Bustimes.org, June 2025

5.7. Rail Services

- 5.7.1. The site is located close to several railway stations, with the nearest being Winnersh and Winnersh Triangle to the north-east.
- 5.7.2. **Figure 5.4** illustrates the railway stations local to the site, as well as nearby Park & Ride facilities.

Figure 5.4: Local Railway Stations



- 5.7.3. The railway stations in the vicinity of the site provide a variety of services, including on the Reading to London Waterloo line, North Downs Line, the Great Western Mainline and the Reading to Basingstoke Line.
- 5.7.4. **Table 5.2** sets out the closest railway stations to the site, the bus routes serving each station, and the cycle travel time to each of the railway stations from the centre of the site based on an average cycling speed of 16km/h.

Table 5.2: Local Railway Stations

Railway Station	Distance from Centre of Site (Crow fly)	Bus Routes	Cycle Travel Time from Centre of site (Actual Route)
Winnersh	2.8 km	4/4a, 128	11 mins
Winnersh Triangle	2.8 km	4/4a, 500	13 mins
Earley	3.0 km	4/4a	12 mins
Reading Green Park	6.5 km	-	23 mins
Reading	6.6 km	3, 4, 4a 19b, 21, 500, 600	25 mins

Source: National Rail Enquires, June 2025

- 5.7.5. Winnersh Triangle Station is one of the more convenient to access from the site by active travel modes.
- 5.7.6. **Table 5.3** shows that Winnersh Triangle railway station provides regular and frequent services operated by South West Trains that run between Reading and London Waterloo.

Table 5.3: Winnersh Triangle Railway Station Services

Destination	Journey Time	Approximate Frequency Guide			
		Peak	Off Peak	Evening	Weekend
Wokingham	6m	Every 30 mins			
Bracknell	12m				
Reading	9m				
Ascot	20m				
Staines	41m				
London Waterloo	75m				

Source: National Rail Enquires, May 2025

- 5.7.7. Reading station lies approximately 6.5 km to the north and is accessible by multiple bus services, including the Leopard 3, Lion 4/4a, Routes 19b and 21, Route 500 and Route 600.
- 5.7.8. Reading station is the second-busiest rail interchange in England outside London, serving approximately 13.5 million passengers per year. It forms a national hub with rail services operated by CrossCountry, South Western Railway and Great Western Railway providing connections to destinations across Great Britain - including direct links to Gatwick, Heathrow International Airports and Central London. Essentially, Reading Railway Station performs three diverse roles for travellers within the Reading urban area comprising:
- Locally - connecting Reading with other adjoining local areas in the Thames Valley;
 - Regionally – forming a central Transport Hub for both the sub-region and South-east region as a whole where either connections to or interchange for services to a large number of destinations in the south-east are possible; and
 - Nationally – forming a national hub at the cross-roads of the Great Western mainline and Cross Country networks providing connections between the sub-region and all other English regions as well as Wales and Scotland.
- 5.7.9. Table 5.4 below shows a variety of the destinations, journey time and frequency of some services of rail services operating from Reading railway station.

Table 5.4: Reading Railway Station Service Summary

Destination	Journey Time	Approximate Frequency Guide			
		Peak	Off Peak	Evening	Weekend
London Paddington	25 mins	8 mins	8 mins	8 mins	8 mins
Wokingham	10 to 14 mins	15 mins	15 mins	15 mins	15 mins
Basingstoke	17 to 27 mins	20 mins	20 mins	20 mins	20 mins
Southampton	50 mins	60 mins	60 mins	60 mins	60 mins
Bristol	63 mins	20 mins	30 mins	30 mins	30 mins
Birmingham	93 mins	30 mins	60 mins	60 mins	60 mins
Cardiff	115 mins	60 mins	60 mins	60 mins	60 mins

Source: National Rail Enquires, May 2025

- 5.7.10. The proximity of LVGV to both Reading and Winnersh Triangle stations, combined with high-quality bus services linking the site to these hubs, will enable residents, employees and visitors to undertake a wide range of regional and national journeys by sustainable public transport.



5.8. Community Transport

- 5.8.1. Within Wokingham Borough, there are a range of community transport services designed to assist residents with limited mobility or those unable to access conventional public transportation. These services play a crucial role in promoting social inclusion and ensuring access to essential services.
- 5.8.2. Wokingham Volunteer Centre's Community Transport Scheme provides low-cost, door-to-door transport for residents in areas including Wokingham (RG40, RG41) and Earley (RG6) who are unable to use public transport. Volunteer drivers assist clients in reaching medical appointments, social events, and other activities.
- 5.8.3. Keep Mobile Community Transport operates a fleet of accessible minibuses with adaptable seating and passenger lifts, serving elderly and disabled residents of Wokingham and Bracknell Forest. Trips include transport to medical facilities, shopping destinations and social activities.
- 5.8.4. Readibus offers a demand-responsive minibus service for residents with restricted mobility. Journeys can be booked in advance, providing accessible transport to health, social and community facilities.
- 5.8.5. These community transport options demonstrate a commitment locally to accessible and inclusive transportation, ensuring that all residents have the means to maintain independence and engage with the community.



6.0 Forecast Travel Demand

6.1. Introduction

- 6.1.1. This section sets out the multi-modal trip generation approach and forecasting used for the proposed development. By forecasting the travel demand at LVGV across all modes of travel, it allows for planning of a safe and suitable transport network that reflects the type and scale of use anticipated.
- 6.1.2. As development of the UoR's land will be completed in conjunction with other areas of LVGV, a forecast which appraises the total trip generation of the full allocation site has been undertaken. This ensures that cumulative transport impacts are fully accounted for and that the strategy is appropriately comprehensive.

6.2. Forecast Travel Demand Methodology

- 6.2.1. A Technical Report detailing the methodology of multimodal travel demand was prepared and submitted to WBC ahead of the planning application. The report is included at **Appendix C** and is discussed at a high level within this section of the Transport Assessment.
- 6.2.2. The report sets out a methodology which is considered by the UoR as a reasonable scenario for considering the impact of the proposed development. Given the level of connectivity and interrelation between the three main developer landholdings at LVGV upon full occupation, a single exercise has been undertaken.
- 6.2.3. For the purposes of the transport modelling which is reported within **Section 14.0**, two development scenarios were considered:
- Full occupation of Loddon Garden Village (2040 scenario)
 - An interim year in the build out process (2032 scenario).
- 6.2.4. The specific land uses set out in **Section 1.0** have been aggregated into separate categories. **Table 6.1** below summarises the land uses and development quanta which have been used for the scenarios.

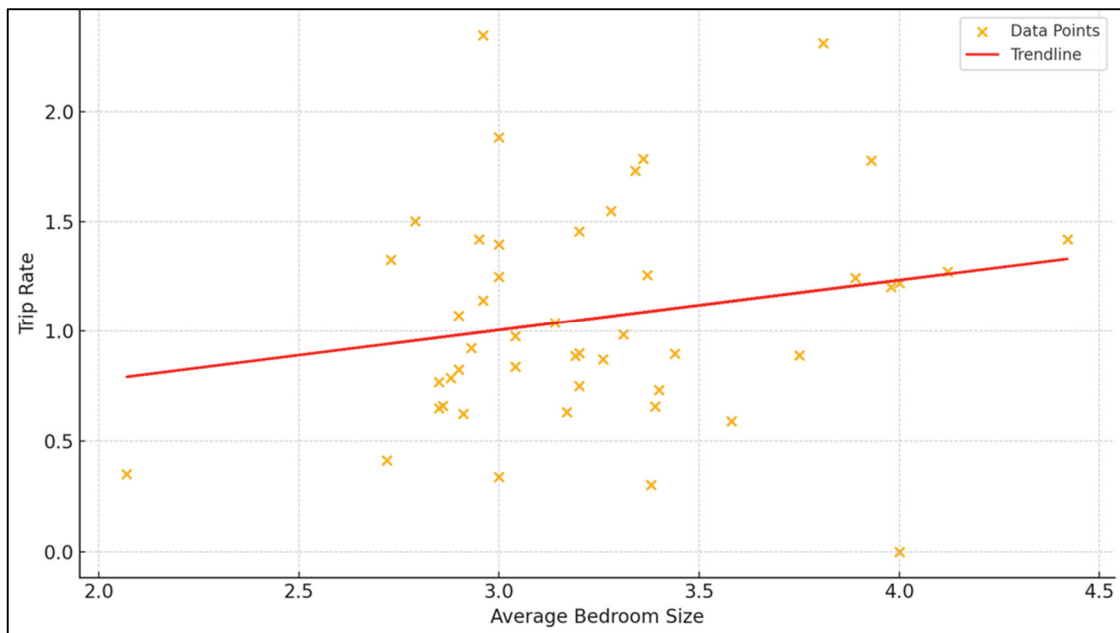
Table 6.1: Proposed Development Land Uses and Quanta for Assessment

Land Use	Scenario and Quantum	
	Full Occupation (2040 Scenario)	Interim (2032 Scenario)
Dwellings	3,930 units	1,250 units
Community Uses	5,500m ²	2,500 m ²
Foodstores	3,500m ²	1,000 m ²
Local + District Centres	3,900m ²	800 m ²
Primary School	1,260 pupils	630 pupils
Secondary School	1,440 pupils	-
Sports Pitch	6 pitches	-
Leisure Centre	1,190m ²	-
R&D	105,000m ²	20,000 m ²

6.3. Person Trip Generation Methodology

- 6.3.1. The trip generation assessment has been based on data from the industry-standard TRICS database. Person trip rates from TRICS have been used as the starting point, avoiding the need to prematurely apply assumptions relating to mode share or location. This provides a neutral baseline as opposed to relying on the standard TRICS multimodal breakdown, which could otherwise embed site-specific factors not directly relevant to LVGV.
- 6.3.2. Using the filtering available in TRICS, each of the proposed development land uses has had a total person trip rate established for the typical AM (0800-0900) and PM (1700-1800) peak hours.
- 6.3.3. For the residential element, feedback from Wokingham Borough Council (WBC) during the scoping process has been addressed. A proportion of the residential dwellings will be provided as flats which typically exhibit lower trip generation patterns. However, to ensure a robust assessment no account has been taken of this and, instead, the residential trip rates are based on all dwellings being represented as houses. Specifically, although TRICS includes a separate category for flats, many sites within the “Houses Privately Owned” category contain a proportion of flats. To avoid ambiguity therefore, all sites containing flats have been excluded from the analysis.
- 6.3.4. WBC advised that recent housing completions in the Borough averaged approximately 3.1 bedrooms per dwelling. As higher bedroom numbers typically correspond with greater trip generation, this trend has been considered in **Figure 6.1** below.

Figure 6.1: AM Peak Hour Person Trip Rates and Average Number of Bedrooms



- 6.3.5. Following the exclusion of Houses Privately Owned sites which included flats, it was found that the average number of bedrooms across the remaining housing sites was 3.14 per dwelling, closely aligning with the figure advised by WBC. This provides confidence that the residential trip rates applied are representative of local circumstances.
- 6.3.6. For non-residential land uses, TRICS data has been selected using a pragmatic approach that seeks to reflect the nature of the ancillary land uses being promoted. The approach taken is set out within the report at **Appendix C** which also presents a full breakdown of the trip generation for each of the land uses prior to the application of effects such as internalisation and mode shares.



6.4. Residential Trip Purposes and Internalisation

- 6.4.1. The Report at **Appendix C** sets out the full methodology behind the derivation of internal and external residential trips for the full occupation and interim scenarios respectively. A summary is provided below.
- 6.4.2. The starting point for both scenarios was the use of National Travel Survey (NTS) table NTS0502a data for 2023. Certain journey purposes were aggregated to simplify the methodology while maintaining robustness.
- 6.4.3. Additionally, the NTS proportion of education trips has been split 50/50 between primary and secondary school trips to reflect the years of entries of age groups, recognising that the secondary school will include 6th form provision. All Escort Education trips have been assigned to primary school trips.
- 6.4.4. **Table 6.2** below sets out the resultant proportion of the residential trips by journey purpose.

Table 6.2: Peak Hour Person Trip Purpose

NTS Trip Purpose	Aggregated Purpose	Proportion	
		AM Peak Hour (0800-0900)	PM Peak Hour (1700-1800)
Commuting	Commuting	34%	55%
Business			
Other Work			
Education + Education Escort	Education (Primary)	42%	4%
	Education (Secondary)	15%	2%
Shopping	Shopping, Leisure & Community	9%	39%
Visiting friends, entertainment & sport			
Total		100%	100%

Source: Consultant calculated from NTS data

- 6.4.5. It is considered that the mix and quantum of non residential uses being provided at LGV will provide an excellent basis to help maximise the number of trips that will be contained within the development. Indeed, the Illustrative Masterplan in conjunction with the promotion of a comprehensive network of high quality active travel routes within the development, has been formulated to exploit this opportunity. Notwithstanding, in order to ensure that the traffic modelling is undertaken on a robust basis, a conservative approach has been taken when accounting for the quantum of internal trips that are likely to occur.
- 6.4.6. **Table 6.3** shows the internalisation factors that have been applied to each scenario.

Table 6.3: Residential Person Trip Internalisation Factors

Trip Purpose	Internalisation Factor	
	Full Occupation	Interim
Commuting	10%	5%
Education (Primary)	85%	40%
Education (Secondary)	85%	0%
Shopping, Leisure & Community	40%	20%

Source: Consultant derived

- 6.4.7. As can be seen, lesser factors have been used for the 2032 interim year in recognition that there will be a proportion of the non-residential land uses which will not be provided (either in full or in part) given they will be completed in later phases. Additionally, with people having recently moved to LGV, it is possible that they still have some ties to previous employment or education facilities and will still be needing to make legacy trips, whereas by full occupation travel patterns will have stabilised.



- 6.4.8. Also of note is that the internalisation factor for each trip type has only been applied to the proportion of residential trips that are undertaken for each journey purpose. For example, the proportion of residential trips being undertaken for commuting journeys in the AM peak hour is 34%. Accordingly, the application of the 10% internalisation factor for commuting reduces the residential trips that occur beyond LGV by only 3.4%.
- 6.4.9. Further information relating to the rationale that was used when determining the internalisation factors for each of the journey purposes is set out below.

Internal Trips for Employment

- 6.4.10. There will be significant opportunities for a proportion of these trips to be satisfied internally due to the new jobs that would be created from the range of land uses being promoted at LGV. In addition to the proposed significant expansion of Thames Valley Science Park (TVSP), the LGV development will include multiple employment generating land uses including the schools, local centres and community and leisure facilities.
- 6.4.11. As identified with the Socio-Economic appraisal within the Environmental Statement, it is estimated the LGV will create 3,250 new jobs. Moreover, the wide mix of land uses being promoted will mean that a variety of positions will be created including teachers, teaching assistants, shop workers, cleaners etc which will be able to be fulfilled locally, including by the new residents at LGV.
- 6.4.12. Using ONS data for the average household size in England (2.4), the percentage of residents of working age (16-64 years old, 62%) and percentage of residents who are economically active in the area (83%), it is estimated that 2,022 of LGV residents will be in employment.
- 6.4.13. The trip generation analysis allows for 10% of trips to employment being satisfied within LGV and TVSP (i.e. 202 residents of LGV will work locally within the development). This equates to only 6% of the 3,250 new jobs being satisfied locally which is considered to be a modest representation.
- 6.4.14. A further consideration is that the above figures do not account for the positive effects of home working / hybrid working arrangements which are becoming more prevalent. Notably, the trip generation data used to inform the traffic modelling is based on TRICS surveys undertaken at a range of residential sites over a time period that ranges between 2016 and 2024. More recent ONS data (published in June 2025) indicates that whilst the incidence of home working has not risen significantly over recent years, it is very evident that hybrid working arrangements are becoming much more commonplace. Specifically, the ONS is reporting that more than a quarter (28%) of workers in Great Britain now have hybrid working arrangements, which involves travelling to work part of the time and working at home part of the time.
- 6.4.15. The increase in hybrid working over the past 3 years (from 20% to 28%) means that this factor alone could account for a reduction in external commuting trips of approximately 4% (assuming 2.5 days a week at home). In this context, the 10% internalisation parameter that has been used for commuting trips is considered to be very modest.

Internal Trips for Primary Schools

- 6.4.16. The DfE Pupil Yield Dashboard 2023 indicates a typical child yield of 0.31 pupils per dwelling for Primary School aged children, thereby suggesting that 1,218 children of primary school age will reside within LGV.
- 6.4.17. The 2 no. 3 form entry primary schools being promoted within LGV will provide a total of 1,260 spaces. This ensures that there is sufficient capacity to accommodate all of the demand created by the residential component of the development.



6.4.18. Notwithstanding, it is recognised that parental choice is a factor and hence it is possible that some children residing within LGV might opt to attend a primary school beyond the development. To account for this an 85% factor has been applied, meaning that 15% of children residing within LGV (183 no.) are assumed to travel to primary schools further afield. As a consequence, LGV residents are assumed to only occupy 1,035 of the spaces at the LGV primary schools. The trip generation methodology then allows for the trips that would arise from beyond the development to satisfy the remaining 225 school spaces (i.e. 18% of the intake is assumed to arise from outside of LGV).

Internal Trips for Secondary Schools

6.4.19. The DfE Pupil Yield Dashboard 2023 indicates a typical child yield of 0.14 pupils per dwelling for Secondary School aged children, thereby suggesting that 550 children of secondary school age will reside within LGV.

6.4.20. The 8 form entry secondary school being promoted within LGV will be able to accommodate 1,440 spaces. It is evident therefore that there is ample capacity to accommodate all of the demand created by the residential component of the development.

6.4.21. Again, recognising parental choice as a factor, account has been taken for only 85% of children of secondary school age residing within LGV attending the secondary school (468 no). The trip generation methodology then allows for the trips that would arise from beyond the development to satisfy the remaining 972 school spaces (i.e. 68% of the school intake is assumed to arise from outside of LGV).

Internal Trips for Leisure / Retail / Community Uses

6.4.22. As was identified early within the visioning process for LGV, the intention is to provide a range of ancillary uses, including community and retail facilities, that can not only cater for the needs of the future residents but also provide benefits to the wider area. This is evident from the quantum and range of the land uses that are being promoted.

6.4.23. Notably, the trip generation analysis allows for 7,400 sqm of retail uses being provided within the district and local centres, including a large food store. Data from the National Travel Survey indicates that food shopping represents more than half of all retail trips. The provision of a significant quantum of convenience retail uses thereby offers the opportunity for the majority of such convenience shopping to be catered for within LGV. Retail trips that would occur external to the development would therefore primarily be related to comparison shopping which represents less than half of all shopping trips.

6.4.24. The LGV proposal also allow for considerable community and leisure uses, including a community centre, a GP practice, a sports hall and associated sports pitches, restaurants and cafes etc. Indeed, based on the information provided within the Socio-Economic appraisal within the Environmental Statement, it is evident that the quantum of community infrastructure being provided exceeds the minimum policy requirements by 400%. It is a reasonable expectation therefore that majority of the day to day trips associated with community and leisure use would be satisfied with LGV.

6.4.25. A further component of LGV is the significant overprovision of open space being provided in the form of parks and public gardens, play areas, outdoor sports facilities, allotments, natural open space and SANG. Again, this offers the opportunity for the majority of the recreational trips, such as walks, to be undertaken with the development.

6.4.26. Notwithstanding that the retail / community / leisure provision at LGV can reasonably be expected to cater for the majority of trips that arise from the LGV residents, a conservative allowance of only 40% has been used to account for the internalisation of such trips. The traffic modelling methodology therefore assumes that 60% of such trips would travel to destinations external to LGV which ensures the assessment is robust.



6.5. Residential Trip Mode Shares

- 6.5.1. Separate mode share profiles have been applied to the internal and external person trips, reflecting that internal trips are significantly more likely to be made by active travel modes given the shorter distances involved. Again, the Technical Report within **Appendix C** sets out the full methodology that has been applied.
- 6.5.2. Internal mode shares are based directly on NTS data for journeys up to 2 miles in length. This is considered to be very robust as the majority of LVGV's residential areas will be within a walking or cycling distance that is significantly closer to the key retail, education and community facilities.
- 6.5.3. External residential trips are based on conservative estimates of what might be achievable as walking, cycling and public transport mode shares; these being:
- Walking - 1%
 - Cycling - 2%
 - Public Transport - 6%
- 6.5.4. By comparison, Census Journey to Work data for the Shinfield South ward shows mode shares of 3% walking, 2% cycling and 9% public transport. This conservative approach is consistent with WBC's requirement to ensure that the Transport Assessment does not understate potential highway impacts and that mitigation is tested on a precautionary basis.
- 6.5.5. Notably, **Section 10.0** of this Transport Assessment presents Sensitivity Scenarios which examine how mode shares could shift based on the land uses and sustainable transport infrastructure which will be provided by LVGV, supported by a monitored Travel Plan. The sensitivity scenarios are intended to illustrate the potential benefits of the comprehensive sustainable transport strategy, rather than replace the Core forecasts.
- 6.5.6. This approach seeks to provide a balanced assessment. The Core forecasts used for the traffic modelling ensure a robust precautionary basis for design and mitigation, while the sensitivities highlight the opportunity for LVGV to achieve higher levels of sustainable travel aligned with national and local policy objectives.
- 6.5.7. The remaining external residential trips have been allocated to vehicle modes (car driver or passenger). Ratios were derived from NTS journey purpose data and adjusted towards a higher car driver share, to reflect the commuting focus of peak-hour travel when car occupancy tends to be lower.
- 6.5.8. For ease of reference, the residential mode shares used for the assessment as set out in **Table 6.4** below.

Table 6.4: Internal and External Residential Mode Shares

Mode	Mode Share	
	Internal	External
Walk	61%	1%
Cycle	2%	2%
Public Transport	2%	6%
Car Driver	23%	70%
Car Passenger	12%	21%
Total	100%	100%

Source: Consultant calculated. includes Excel rounding.

- 6.5.9. 10.1.9. For context, when examined in isolation, the resultant residential car trip rate the interim year scenario equates to 0.65 vehs per dwelling in the AM peak hour and 0.56 vehs per dwelling in the PM peak hour for.



6.5.10. The corresponding residential trip rates for the full occupation scenario equate to 0.47 vehs per dwelling in the AM peak hour and 0.51 vehs per dwelling in the PM peak hour.

6.6. Non-Residential Trips

6.6.1. The Technical Report at **Appendix C** set out the methodology behind the derivation of internal and external non-residential trips for the full occupation and interim scenarios respectively. As with the residential trips, several of the land uses were aggregated to align with National Travel Survey (NTS) categories to ensure a consistent approach.

6.6.2. In order to eliminate double counting of trips, internalised residential person trips that were identified subtracted from the person trips for corresponding non-residential journey purposes.

6.6.3. Education trips have been treated separately from other purposes,

6.6.4. For most of the non-residential purposes (e.g. retail, leisure and employment), the same external mode shares as applied to residential trips have been adopted for walking, cycling and public transport. The remaining proportion has been distributed between car driver and car passenger, based on typical vehicle occupancy rates for commuting and retail/leisure trips.

6.6.5. The exception is for education trips where the mode shares were calculated separately recognising their unique characteristics. These include higher levels of public transport use, reflecting both dedicated school services and scheduled commercial bus routes. The NTS data for trips to schools has been used to determine the education trip mode splits, specifically for journeys greater than two miles. It has been assumed that for each car driver on an education trip, there is a single car passenger.

6.6.6. **Table 6.5** summarises the external non-residential trip mode shares.

Table 6.5: Non-Residential External Person Trip Mode Shares

Mode	Mode Share	
	Education	Other Purposes
Walk	1%	1%
Cycle	7%	2%
Public Transport	40%	6%
Car Driver	26%	61.9%
Car Passenger	26%	29.1%
Total	100%	100%

Source: Consultant calculated. includes Excel rounding

6.7. Total Peak Hour Trip Generation Forecast

6.7.1. The resultant total trip generation for the interim and full occupation scenarios is summarised below.

Interim Scenario (2032)

6.7.2. **Table 6.6** and **Table 6.7** below set out the forecast trip generation for LVGV across all modes in the interim scenario in the AM and PM peak hours.

Table 6.6: Interim LVGV Forecast Trip Generation – AM Peak Hour (0800-0900)

Mode	Internal			External			Combined		
	In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way
Walk	36	130	166	12	11	23	48	141	189
Cycle	1	4	5	53	31	84	54	36	90
Public Transport	1	4	5	271	128	398	272	132	404
Car Driver	14	49	63	549	696	1,244	562	745	1,307
Car Passenger	7	26	33	311	252	563	318	277	595
Total	59	213	272	1,195	1,118	2,313	1,254	1,331	2,585

Source: Consultant calculated. includes Excel rounding



Table 6.7: Interim LVGV Forecast Trip Generation – PM Peak Hour (1700-1800)

Mode	Internal			External			Combined		
	In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way
Walk	55	27	82	8	7	15	63	34	97
Cycle	2	1	3	17	15	33	19	16	35
Public Transport	2	1	3	54	54	108	56	54	111
Car Driver	21	10	31	554	431	986	575	442	1,017
Car Passenger	11	5	16	186	170	356	197	175	372
Total	90	45	135	820	677	1,497	910	722	1,632

Source: Consultant calculated. includes Excel rounding

Full Occupation Scenario (2040)

- 6.7.3. **Table 6.8** and **Table 6.9** below set out the forecast trip generation for LVGV across all modes in the full occupation scenario in the AM and PM peak hours.

Table 6.8: Full Occupation LVGV Forecast Trip Generation – AM Peak Hour (0800-0900)

Mode	Internal			External			Combined		
	In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way
Walk	310	1,119	1,428	35	21	56	344	1,140	1,484
Cycle	10	37	47	131	54	185	141	91	232
Public Transport	10	37	47	627	205	833	637	242	880
Car Driver	117	422	539	1,733	1,363	3,096	1,849	1,785	3,634
Car Passenger	61	220	281	936	496	1,432	997	716	1,713
Total	508	1,834	2,342	3,461	2,140	5,602	3,969	3,974	7,943

Source: Consultant calculated. includes Excel rounding

Table 6.9: Full Occupation LVGV Forecast Trip Generation – PM Peak Hour (1700-1800)

Mode	Internal			External			Combined		
	In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way
Walk	367	182	549	23	23	46	390	205	595
Cycle	12	6	18	48	48	97	60	54	115
Public Transport	12	6	18	154	155	309	166	161	327
Car Driver	138	69	207	1,554	1,467	3,020	1,692	1,535	3,227
Car Passenger	72	36	108	533	596	1,129	605	632	1,237
Total	602	298	900	2,312	2,289	4,601	2,914	2,587	5,501

Source: Consultant calculated. includes Excel rounding

- 6.7.4. At full occupation, there is a material increase in all person trips when compared to the 2032 interim scenario. Notably, approximately 27% of AM peak trips and 23% of PM peak trips are forecast to remain internal to the development. This demonstrates the effectiveness of the mix and quantum of non residential uses being provided at LGV which provide an excellent basis to help maximise the number of trips that will be contained within the development.

6.8. Resultant Mode Shares

- 6.8.1. Based on the total trip generation, the forecast total mode shares for LVGV are shown in **Table 6.10** below.



Table 6.10: LVGV Forecast Peak Hour Mode Shares

Mode	Interim Scenario (2032)		Full Occupation Scenario (2040)	
	AM Peak Hour (0800-0900)	PM Peak Hour (1700-1800)	AM Peak Hour (0800-0900)	PM Peak Hour (1700-1800)
Walk	7%	6%	19%	11%
Cycle	3%	2%	3%	2%
Public Transport	16%	7%	11%	6%
Car Driver	51%	62%	46%	59%
Car Passenger	23%	23%	22%	22%
Total	100%	100%	100%	100%

Source: Consultant calculated. includes Excel rounding.

- 6.8.2. Several notable changes in mode share characteristics are observed when comparing the interim and full occupation scenarios.

Walk Mode Share

- 6.8.3. There is a marked difference in the mode share for walking at full occupation compared to the interim scenario. This reflects the delivery of on-site schools, retail, leisure and community facilities, all within walking distance of residential areas, supported by high-quality pedestrian infrastructure.

Public Transport Mode Share

- 6.8.4. Whilst the total number of public transport trips increase in the full occupation scenario, the mode share proportion is actually lower than the interim situation. This can be attributed primarily to the comparatively high proportion of education trips which comprise the total forecast trip volumes in the interim scenario. At full occupation, travel patterns associated with the other ancillary uses are more prominent due to the significant employment, retail leisure and community trips also taking place within LVGV. Education trips do remain substantial within the full occupation scenario, albeit no longer dominating the mode share weighting.

Car Driver Mode Share

- 6.8.5. There is a reduction in car driver mode share of 5% forecast in the AM Peak Hour at full occupation when compared to the interim scenario. The decrease between the two scenarios in the PM peak hour is less pronounced, being only 3%. Again, whilst the absolute number of car trips increases as the site becomes fully occupied, the proportion of trip containment becomes more prominent, which reduces the overall car driver mode share as a consequence.



7.0 Active Travel Strategy

7.1. Introduction

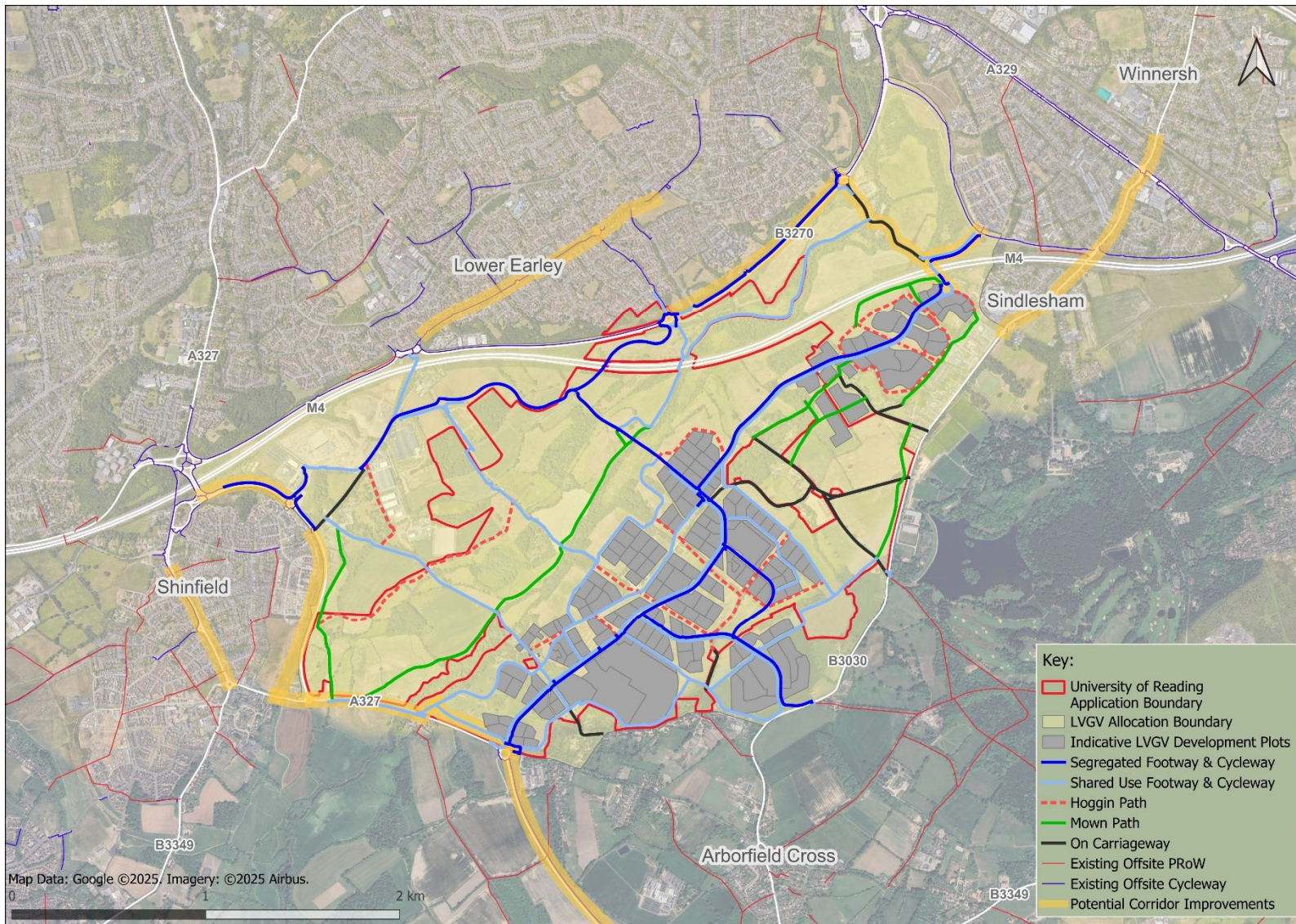
- 7.1.1. This section sets out the active travel strategy associated with LGV and the wider LVGV allocation.
- 7.1.2. The strategy has been designed to promote, enable and incentivise sustainable travel behaviours for residents, employees and visitors, ensuring that LGV is a connected, accessible and inclusive community.
- 7.1.3. The primary objectives of the transport strategy are to:
- Promote genuine travel choice and accessibility to, from and within the development for all users.
 - Minimise the need to travel, particularly reducing single-occupant car journeys.
 - Facilitate active travel so that short and linked trips are made conveniently by walking, cycling.
 - Provide safe and direct access to nearby education, leisure, retail and community amenities.
 - Support healthy lifestyles and create vibrant, socially connected local communities.

7.2. Active Travel Strategy

- 7.2.1. Walking and cycling are the primary means of undertaking short journeys and hence accommodating such trips is an essential component of the movement strategy for LGVG which seeks to maximise sustainable forms of travel. Government guidance on accessibility planning advises that residential developments should be accessible to a range of land uses including education, employment, health and retail facilities. The provision of residential developments in close proximity to such land uses helps to maximise the number of shorter distance trips and therefore capitalises on the potential for these journeys to be undertaken by non-car modes of travel.
- 7.2.2. Walking and cycling are the most cost-effective and healthy ways to travel over short distances. Both are generally considered acceptable for journeys up to 2 km (walking) and 5 km (cycling), although it is widely recognised that longer distances, particularly with the growing use of e-bikes, are increasingly achievable.
- 7.2.3. Active travel provision plays a vital role in providing healthier access to local areas whilst significantly contributing to a more sustainable environment for LVGV. Active travel reflects the most important means of travel on a local level and in linking with other modes, such as public transport, including bus and rail, offering the best opportunity for displacing short car trips.
- 7.2.4. Accordingly, the Illustrative Masterplan for LGV has been developed in a manner that maximises active travel opportunities for future residents and all other users by incorporating extensive walk and cycle facilities along key routes within the layout. Notably, the high level of connectivity being promoted within LGV is entirely compatible with that being advanced throughout other areas of LVGV. Taken together, the provision therefore seeks to provide direct and convenient connections into the existing and future active travel networks beyond the allocation site in order to maximise sustainable travel to local facilities and beyond.
- 7.2.5. **Figure 7.1** presents an overview of the on-site and off-site active travel strategies which seek to provide safe, attractive and direct infrastructure to support walking and cycling as the primary means of local travel.



Figure 7.1: Proposed Active Travel Strategy



7.3. On-Site Active Travel Provision

- 7.3.1. The objective for LGV is to provide high quality pedestrian and cycle links throughout the development to ensure a very high level of connectivity is achieved within all areas.
- 7.3.2. A range of provision will be promoted to reflect the differing character areas within the development; the anticipated level of usage and also the nature of the trips that are being catered for. In this respect, the following categories of provision has been incorporated within the Illustrative Masterplan:
- Segregated and shared footway / cycleway provision along the primary street network.
 - Hard surfaced shared use footway / cycleways along key off-carriageway routes catering for the main desire lines to the key land uses and coinciding with WBC's planned Greenway routes.
 - Hoggin surfaced shared use footway / cycleway links through other areas of the site.
 - Mown Path pedestrian links through the peripheral areas to deliver walking routes through the green spaces.

As can be seen from **Figure 7.1**, a comprehensive network of active travel routes is being provided within the Illustrative Masterplan for LGV. These will provide direct and convenient routes for pedestrians and cyclists, many of which are aligned away from vehicular traffic but benefit from natural surveillance from adjacent housing and mixed uses. Local wayfinding will be provided, indicating typical walking and cycling times to key destinations within the development and the wider LVGV allocation.

- 7.3.3. Route design will follow relevant guidance and best practice at the time of reserved matters applications. Geometric standards will be tailored to forecast demands, with surfacing and lighting appropriate to location and function within the network.
- 7.3.4. Of note is that the Illustrative Masterplan has been developed on a basis that respects the existing alignment of the public rights of way that route through the site. The philosophy is therefore to enhance the existing networks which will be complimented by the new routes being created.

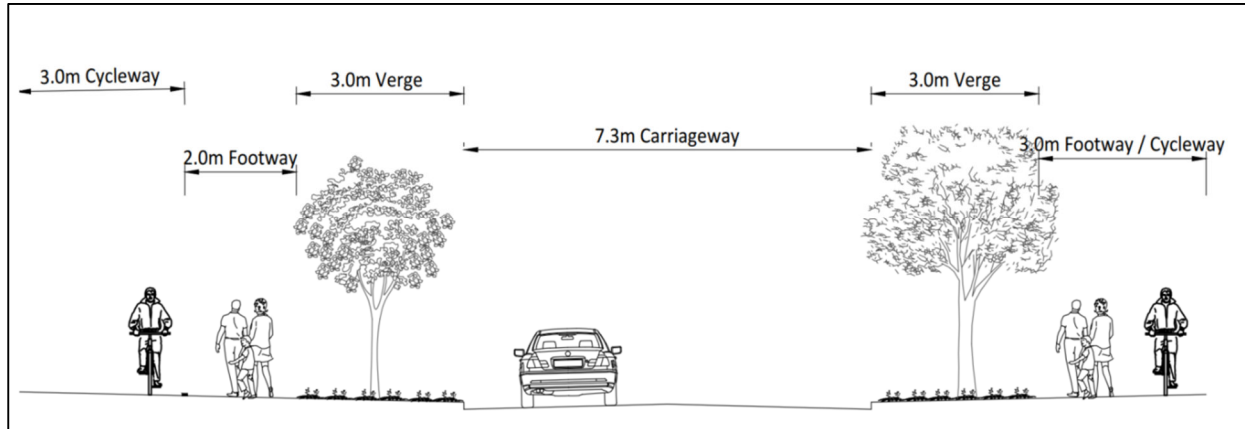


Provision along Primary Streets

- 7.3.5. A Primary Street corridor will run through LVGV, connecting the site's access points and enabling onward travel beyond the development. High-quality, continuous footway and cycleway provision along this corridor will provide a strong spine of connectivity for active travel.
- 7.3.6. The River Loddon and M4 motorway form the primary severance points for travel, with the former impacting internal travel between LVGV and TVSP, and the latter more of an impediment to onward travel for destinations to the north. The proposed development addresses this severance through new bridge crossings over both the River Loddon and the M4 motorway, ensuring permeability and resilience for active travel modes.

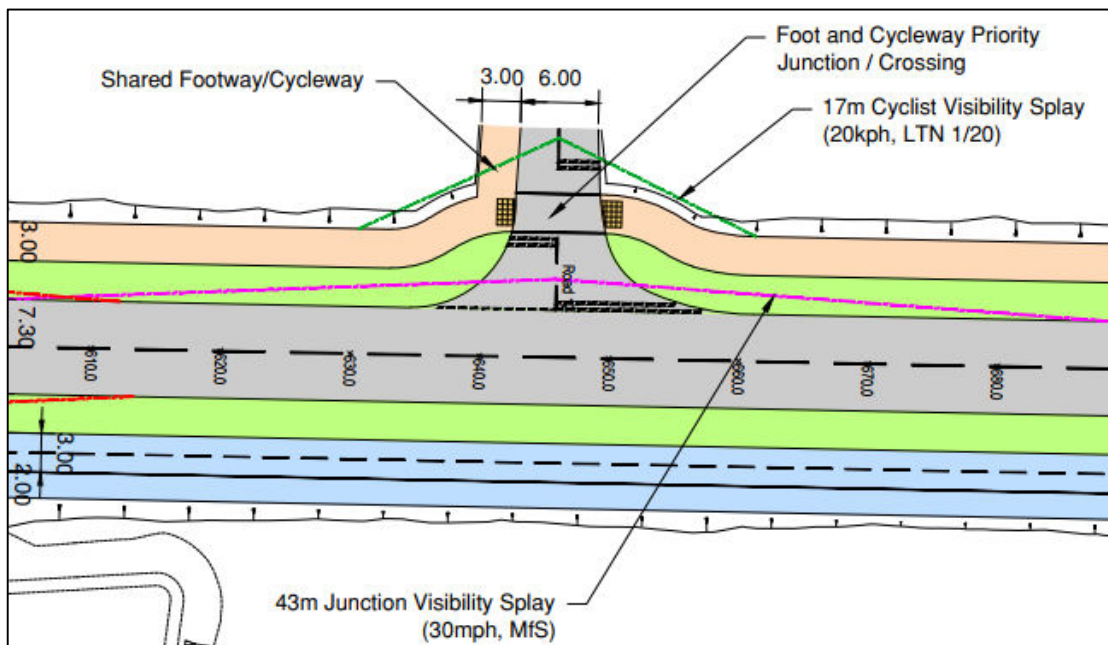
7.3.7. **Figure 7.2** below shows an indicative cross section of the Primary Street corridor.

Figure 7.2: Indicative Primary Street Cross Section



- 7.3.8. On each side of the carriageway, 3m verges provide good separation of active travel routes from traffic, exceeding the minimum offset requirements set out in the DfT Cycle Infrastructure Guidance : LTN 1/20.
- 7.3.9. The Primary Street will incorporate a 5 m wide segregated footway/cycleway, compliant with LTN 1/20 and capable of accommodating up to 1,000 cyclists per hour. In addition, a 3 m shared-use facility on the opposite side of the corridor can accommodate a further 300 cyclists per hour. The high standard of provision can therefore readily accommodate the levels of flows throughout all areas of LVGV, including at key locations such as the District and Local Centres and in the vicinity of the primary and secondary schools.
- 7.3.10. The typical configuration shown may however vary across the development in response to the different character areas and urban form. For example, increased widths are being promoted provided in some parts of the main local centre and in the vicinity of the schools, whereas links across some of the greenspaces may not necessarily include a shared use facility on the other side of the road, particularly if a parallel off-road route is being promoted nearby. Such detailed matters will be established within the Design and Code and in full detail as reserved matters planning applications are progressed.
- 7.3.11. A variety of crossing points are promoted along the Primary Street to ensure a high degree of connectivity is achieved along and across the corridor. Parallel crossings are proposed at locations where the key Active Travel routes cross the corridor. Signal controlled Toucan crossings are proposed in areas where pedestrian and cycle activity will be higher such as in the vicinity of the primary and secondary schools and the District Centre. Such provision is illustrated in **Figure 7.3** below which is extracted from the design drawings of the Primary Street corridor within LGV.

- ### Figure 7.4: Priority Crossings of Minor Approaches



Off Road Provision

7.3.14. The second level of hierarchy being provided is 3m wide shared use paths. These are generally being proposed along key routes within the greenspace areas being provided within the masterplan. This category of link will be employed to deliver sections which form part of WBC's planned Greenway Routes and Long Distance River Path which typically route through areas that are away from the proposed street network.

7.3.15. For the most part, the Long Distance River Path is being catered for along the eastern side of the Loddon. Due to topography, the floodplain is less extensive on the eastern side of the river and hence routing the Path as shown will ensure that is continuously accessible, even in periods of high and prolonged rainfall. To the west of the river, in the southern part of the site, a mown path will run adjacent to the river.



7.3.16. North of the Primary Street, the route will continue as a surfaced shared-use path adjacent to the river. While the section under the M4 motorway may be unpassable during times of heavy rainfall, alternative all-weather routes will be available via the Primary Street bridge and the Cutbush Lane East bridge, ensuring continuity of travel.

7.3.17. Further east-west connections will be provided across the EcoValley component of LVGV. This includes a southern route being delivered early in the delivery programme which utilises the existing bridge crossing of the Loddon along the Footpath 4 corridor. This surfaced route links to the Cutbush Lane corridor which provides an attractive connection across the M4 motorway in the vicinity of Thames Valley Science Park.

7.3.18. A new pedestrian and cycle bridge is also being delivered across the River Loddon within the central areas of LGV. This provides a second route across EcoValley before connecting into the Thames Valley Science Park.

Other Active Travel Routes

7.3.19. The Illustrative Masterplan also allow for a network of off-road unbound surface routes that are being promoted at the periphery of the development parcels and also for routes through the greenspaces that may be more recreational in nature. These routes, which would typically be provided as hoggins surfaces atop a granular sub base, would be 3m in width to allow both pedestrians and cyclists to use the facilities.

7.3.20. Other recreational walk routes are also promoted which are generally formed of 2m wide mown paths that typically follow the existing Public Rights of Way to the east and west of the Loddon. Such provision is also being provide are part of the walking routes within the areas of SANG that are also accompanying the LGV development.

7.3.21. The remaining route type comprises use of the existing tracks, byways and lanes which are being retained within the site. These are provided with varying surface types and typically comprise lanes which are very lightly trafficked and typically don't accommodate through movements. Accordingly, these existing assets will play a complimentary role in terms of catering for pedestrian and cycle movements across the development.

7.4. Travel Plan

- 7.4.1. A Framework Travel Plan (FTP) has been prepared to accompany the planning application submission. The document sets out an initial framework of initiatives and measures aimed at promoting, incentivising, and enabling sustainable travel behaviours by future residents of the proposed development.
- 7.4.2. Effective Travel Plans are recognised as key tools in delivering environmental improvements at a local level. They can help reduce single-occupancy car use in peak periods, ease traffic congestion, improve local air quality, lower noise impacts, and contribute to healthier, more liveable communities.
- 7.4.3. It is widely acknowledged that Travel Plans initially prepared for supporting a planning application ahead of development build-out and occupation. In this respect, the Framework Travel Plan is intended as a starting point, establishing the principles of sustainable travel measures that will be effectively managed and refined over time to positively influence travel choices LGV and help to minimise travel by private car.
- 7.4.4. The Framework Travel Plan is intended as a starting point, to be refined over time in response to authority feedback and evolving good practice in travel planning. A full Travel Plan is expected to be prepared and submitted in support of reserved matters application, supported by baseline travel data.
- 7.4.5. In addition, should significant employment uses be brought forward as part of the phasing of the wider development, a separate Workplace Travel Plan may be required to address the specific needs of those occupiers.

7.5. Mobility Hubs

- 7.5.1. The emphasis on locating facilities and amenities conveniently extends to the siting of transport facilities. Several Mobility Hubs are therefore proposed across the development, positioned to maximise accessibility and visibility. For context, further information relating to Mobility Hubs is attached within **Appendix D**.
- 7.5.2. Mobility Hubs will be strategically located near retail, community and employment uses, and will be designed to integrate micromobility (cycles, e-bikes and, subject to policy, e-scooters) with other travel modes. Facilities will vary depending on hub size and catchment, but would typically include:

- Bus Stops, including shelters, seating and real time passenger information.
- Wayfinding and local travel information
- EV Car Club vehicle in dedicated parking zones.
- Secure, sheltered cycle parking to support onward journeys by bus or car club.
- Parcel pick up lockers.
- Rental bikes or e-bikes.





- 7.5.3. The provision of Mobility Hubs will enhance sustainable travel opportunities within LGV and to surrounding areas. By co-locating facilities and providing clear, legible connections, the hubs can make active and shared modes more attractive than private car use for many journeys, supporting long-term behavioural change.

7.6. Cycle Parking

- 7.6.1. Cycle parking for all uses at LGV will be provided fully in accordance with Wokingham Borough Council's parking standards. The precise level and type of parking will be determined through subsequent reserved matters applications when the mix of dwellings and other land uses is more defined. However, based on current guidance, the following cycle parking provision for new dwellings is typically:

- 1 bedroom dwelling : 1 cycle space
- 2 bedroom dwelling : 2 cycle spaces
- 3+ bedroom dwelling : 3 cycle spaces

- 7.6.2. Where dwellings are provided with a garage, the cycle parking can be provided within the garage providing that it is sufficient sized to accommodate the storage requirements.

- 7.6.3. For other dwellings, covered stores will be provided within the curtilage of the properties such as garden areas which will be accessed separately so that residents will not need to bring their bicycles through the house. Secure shared parking stores will be provided for apartment areas which will be well designed and conveniently located near to the entrances to the apartment blocks.

- 7.6.4. Cycle parking for the other land uses will ensure that staff and visitors for all the non-residential uses will benefit from well-designed secure and sheltered cycle parking that is conveniently located. This provision will be supplemented by the ancillary cycle parking being provided at the Mobility Hubs located within the District Centre and Local Centre areas of LGV.

7.7. Off-Site Active Travel Strategy

- 7.7.1. Whilst the on-site active travel strategy is critical for maximising the internalisation of trips within LGV, a residual number of trips will inevitably extend off-site. Improved connectivity beyond the development is therefore important to make sure that as many of the trips to destinations beyond the site are undertaken by foot or by cycle.

- 7.7.2. The overall off-site strategy broadly shown in **Figure 7.1** has been developed through WBC's Local Plan process, and has subsequently been augmented by findings from the NMU Audit at **Appendix B** and discussions between the applicants and WBC.

- 7.7.3. The proposals build upon the enhanced pedestrian and cycle provision that is being promoted as part of the access arrangements. A number of improvement schemes have then been identified and developed which would enable connectivity to be enhanced further afield. The Infrastructure Delivery Plan (IDP) this is being prepared for the LGVG contains significant allowances across a number of pedestrian and cycle infrastructure headings to facilitate the delivery of the improvements, either directly by the developer as part of highway works or through financial contribution.

- 7.7.4. Key elements for the strategy aimed at catering for movements along corridor beyond the development are summarised below.

Routes to Shinfield and Arborfield from the South

- 7.7.5. A new fourth arm onto the A327/Observer Way roundabout will provide direct access to LGV. Combined with the existing 3 m shared-use path on the eastern side of Observer Way, this will ensure good connectivity southwards to Arborfield.



7.7.6. To address the limited connectivity along Arborfield Road for active travel, it is intended to implement a corridor improvement scheme within land that is either adopted highway or under the control of the UoR. This will include the main elements:

- Provision of a 3m wide shared footway / cycleway link within the southern frontage of LGV, linking to Arborfield Road at the existing access to Hall Farm which will be stopped up to vehicular traffic.
- A Toucan crossing of Arborfield Road, east of the bridge over the Loddon.
- From the crossing point, a 3m wide shared use footway / cycleway along the southern side of Arborfield Road heading west towards Shinfield.
- An uncontrolled crossing point of Arborfield Road with central refuge to provide connectivity between the network of permissive paths being provided within LGV to the west of the Loddon and also to Langley Mead SANG to the south.

7.7.7. Details of the proposals along the Arborfield Road corridor to deliver enhanced pedestrian and cycle connectivity to Shinfield are presented on Drawing No. A392-1006/P4, attached within **Appendix E**.

Routes to Shinfield and Reading from the West

7.7.8. The access works for LVGV at the TVSP access roundabout include widening of the existing footway / cycleway which flanks the eastern side of the Shinfield Eastern Relief Road, north of the junction with South Avenue. Toucan crossings will be provided across South Avenue and also across the Shinfield Eastern Relief Road to the south in order to facilitate active travel movements along Cutbush Lane.

7.7.9. Pedestrians and cyclists can then utilise the 3m wide shared use link which is to be provided by the residential development being promoted to the south of Cutbush Lane or alternatively continue westwards along Cutbush Lane West to access the Hollow Lane corridor and then onwards to facilities in Shinfield.

7.7.10. North of the Shinfield Gyratory, pedestrian refuges will be provided within the central hatching areas along the A327 Shinfield Road corridor to assist within crossing connectivity and to reduce severance.

Routes to Lower Earley and Earley from the North

7.7.11. Connections to the Lower Earley north-west of LVGV can be gained in more than one location. As described above, internal routes will connect to Cutbush Lane East and the existing overbridge which provides a traffic free active travel route over the M4 motorway. From this location, the Cutbush Lane corridor provides a direct, convenient route for active travel from west to east, accessing Maiden Place local centre.

7.7.12. A connection will be established by the proposed new fourth arm onto the Lower Earley Way / Meldreth Way Roundabout. This junction will include comprehensive signal controlled and uncontrolled crossing facilities, enabling safe and convenient crossing of Lower Earley Way.

7.7.13. To aid those who wish to use active travel modes to travel to Reading, particularly cyclists, a route from Meldreth Way could be used, which combines existing infrastructure with new provision and comprehensive wayfinding. This would include routing along Carshalton Way and then a crossing of Rushey Way into a quiet section of Beech Lane which heads west for c.250m.

7.7.14. From here, a direct route would continue along Beech Lane, but for cyclists preferring a quieter route, the dedicated pedestrian/cycle paths and quiet roads to the west could provide an alternative route until rejoining Beech Lane just north of Redhatch Drive.



- 7.7.15. North of Wilderness Road, the University of Reading is amenable to creating permissive routes through the Whiteknights Campus, providing traffic free active travel routes towards Reading town centre. A new crossing on Wilderness Road will assist in connecting from Beech Lane to Whiteknights.
- 7.7.16. Pedestrian and cycle enhancements along the Cutbush Lane corridor which forms part of the cycle network that routes north-east from the Beeston Way roundabouts before continuing as Gipsy Lane can also be implemented. Enhancements along this route could comprise improved lighting as well as improvements to treatments of the side roads and crossing points as advocated within Wokingham Borough Council's Local Walking and Cycling Infrastructure Plan (LCWIP).
- 7.7.17. The northern section of Mill Lane that routes south from Lower Early Way to just east of the M4 motorway bridge will be closed to through traffic as part of the proposals to implement the new Hatch Farm Way link road. This route will become an attractive and direct route for pedestrians between Sindlesham and the northern part of LVGV to Lower Earley, as well as for pedestrians and cyclists passing through that area.

Routes to Winnersh from the North-East

- 7.7.18. A key improvement in this area will be a new highway link routing eastwards from Mill Lane to deliver a connection onto the recently constructed Hatch Farm Way corridor. The highway works will be accompanied by new footway and cycleway provision which will enable a continuous link to be provided between LVGV and the existing shared use facilities along Hatch Farm Way.
- 7.7.19. As identified above, the new highway link will allow the northern section of Mill Lane to be downgraded so that it only caters for local access traffic. The elimination of through traffic along this section will allow this corridor to act as an attractive route for walk and cycle journeys heading northwards before connecting onto Lower Earley Way at the Rushey Way roundabout.
- 7.7.20. Works associated with the creation of the access roundabout onto Mill Lane to serve the north-eastern area of LVGV also incorporate pedestrian improvements to the east towards the Mole Road corridor. The proposed signal control scheme at the Nirvana Spa junction will deliver significantly improved pedestrian crossing provision which will facilitate onward travel towards the Bearwood primary school.
- 7.7.21. The corridor from the Nirvana Spa roundabout to Winnersh Crossroads via King Street Lane provides limited highway land on which to provide significant improvements to active travel infrastructure. Nonetheless, opportunities do exist to deliver enhancements as advocated within Wokingham Borough Council's Local Walking and Cycling Infrastructure Plan (LCWIP).
- 7.7.22. Details of the proposals to deliver enhanced pedestrian and cycle connectivity in this area are presented on Drawing No. A392-1009/P4, attached within **Appendix E**. As can be seen, the proposals include the following elements:
- Provision of a new uncontrolled crossing point of Mill Lane to connect with the internal footway / cycleway links being provided within LVGV.
 - Improved crossing provision at Nirvana Spa junction to enhance connectivity to Winnersh Community Centre and Bearwood recreational ground as well as onward movements towards Bearwood primary school.
 - Improved crossing provision of Bearwood Road at New Road and also at the frontage of Bearwood primary school.
 - Existing crossing point on King Street Lane south of M4 underbridge upgraded to signal crossing.
 - Widening of footway along western side of King Street Lane to deliver shared use footway / cycleway north of junction with Hatch Farm Way.



- Introduction of traffic calmed sections along King Street Lane in conjunction with advisory cycle lanes.
- Introduce permanent 20mph speed limit along King Street Lane in vicinity of Winnersh rail station.

Connections to Routes East of Mole Road

- 7.7.23. There are limited local services and facilities that are likely to be accessed from the south-western frontage of LVGV along Mole Road. There is however an established and attractive Public Right of Way network immediately to the east that connects towards the Barkham area, thereby offering good opportunity for accommodating trips arising from LVGV.
- 7.7.24. Accordingly, it is proposed to introduce new signal controlled crossing points on Mole Road. These will serve pedestrians, cyclists and equestrians. A crossing of Mole Road adjacent to the University of Reading's land frontage will provide a direct connection onto the Gravelpithill Lane corridor. The proposed crossing arrangement is depicted on **Drawing No. A392-1037/P1, attached within Appendix E**. A similar crossing connecting LVGV to the Ellis's Hill Public Right of Way corridor is being promoted as part of the access arrangements for the Gleeson Land development parcel.



8.0 Accessibility

8.1. Access to Local Facilities and Amenities

- 8.1.1. A key element in assessing the sustainability of the proposed development is how the masterplan provides convenient and safe access to key facilities by active travel modes. For LVGV, the schools, local centres, open spaces and community services have been deliberately located within walking and cycling distances aligned with national and local policy guidance. This ensures that residents can meet most of their daily needs without reliance on the private car, supporting the creation of a healthy, balanced and sustainable community.
- 8.1.2. This section considers the accessibility of education, retail, leisure, employment and public transport facilities once the development is occupied. The assessment uses walking and cycling routes provided within the Illustrative Masterplan, as well as connections to the surrounding networks, rather than relying solely on straight-line measures. Benchmarks such as an 80 m walk (approximately 10 minutes) for local services, aligned with the 20-minute neighbourhood concept, have been referenced where appropriate.
- 8.1.3. The analysis demonstrates how residential areas are positioned in relation to key facilities, ensuring that the majority of homes are located within reasonable and policy-compliant distances to shops, schools and services. The Illustrative Masterplan has been designed to embed active travel opportunities at its core, ensuring that sustainable choices are the most convenient.

8.2. Education Accessibility

- 8.2.1. **Figure 8.1** presents the existing walkability of the site in relation to local primary schools. Although it can be seen that there are many primary schools in the surrounding areas, given the size of the site it is unsurprising that the walk times to them are at the upper end of the scale represented on the Figure. This reinforces the importance of making education provision part of the plans for LVGV.
- 8.2.2. In comparison, **Figure 8.2** demonstrates the accessibility of residential parcels within LGV to primary schools once the development is completed. The two primary schools have been located to achieve the maximum number of dwellings which are accessible on foot. Much of the UoR development is within a maximum of a 10 minute walk of the primary schools, and there are very few areas beyond 1,200m or 15 minutes' walk.
- 8.2.3. **Figure 8.3** demonstrates that current accessibility to secondary schools on foot is poor. While older pupils typically walk further than primary-aged children, the site is still distant from existing secondary school provision.
- 8.2.4. The provision of a secondary school within LGV addresses this. As demonstrated in **Figure 8.4** the secondary school is well located to be accessed on foot in 20 minutes or less by a majority of the LVGV allocation. The new school will also benefit surrounding communities, such as Arborfield Cross, which will have a facility within 30 minutes' walk.
- 8.2.5. Cycling significantly increases accessibility as can be seen from **Figure 8.5** which shows the accessibility to the schools within LGV by bike. This demonstrates that the schools are within a short journey time by bike of the entirety of the allocation site and also much of the surrounding area.
- 8.2.6. In summary, the LGV proposals provide good accessibility to education by active modes, ensuring that pupils of all ages can travel safely and sustainably.

Figure 8.1: Existing Primary School Walking Accessibility

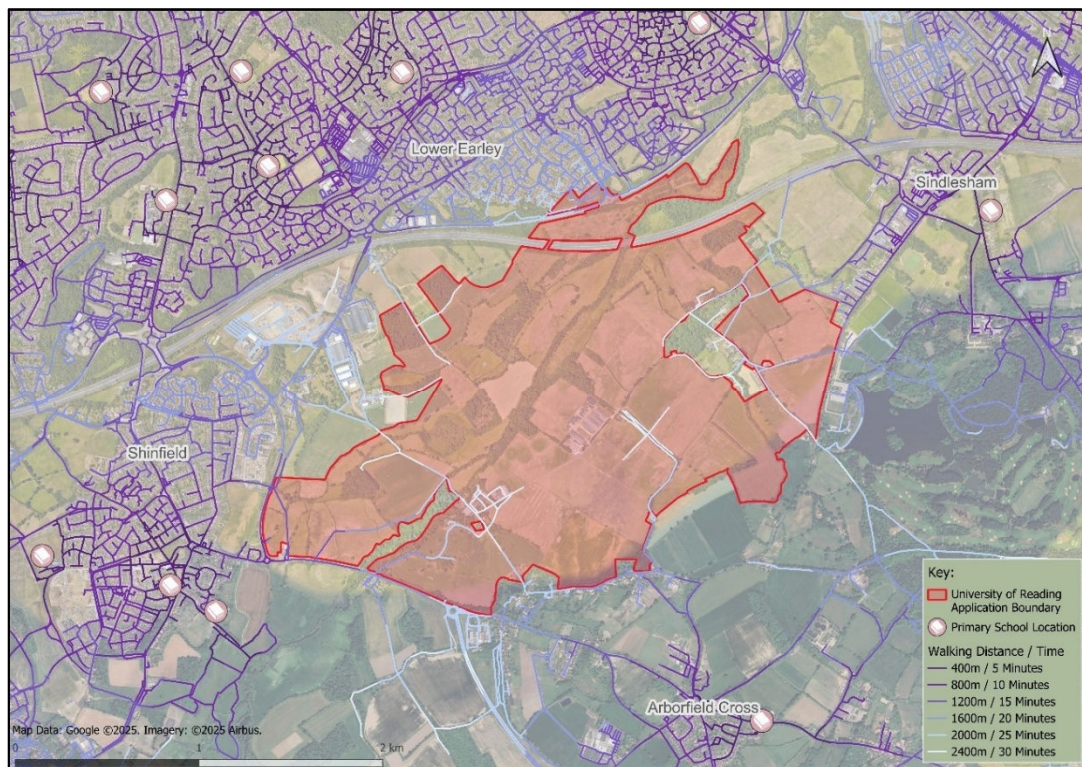


Figure 8.2: Future Primary School Walking Accessibility

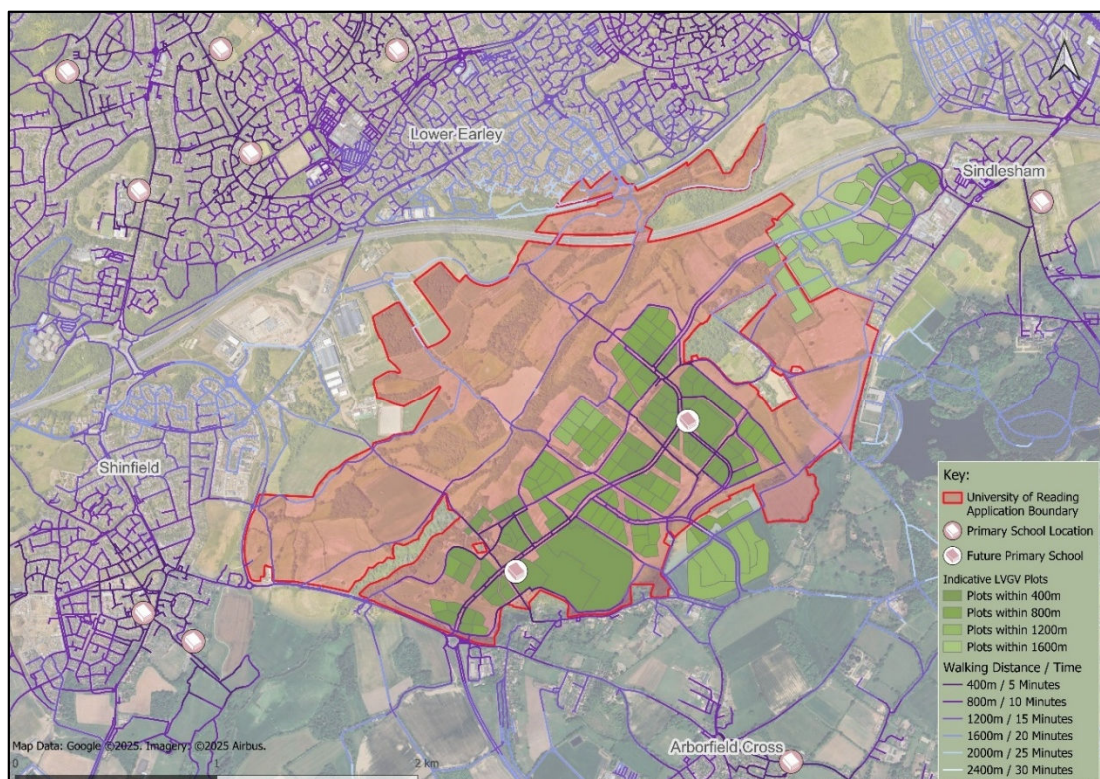


Figure 8.3: Existing Secondary School Walking Accessibility

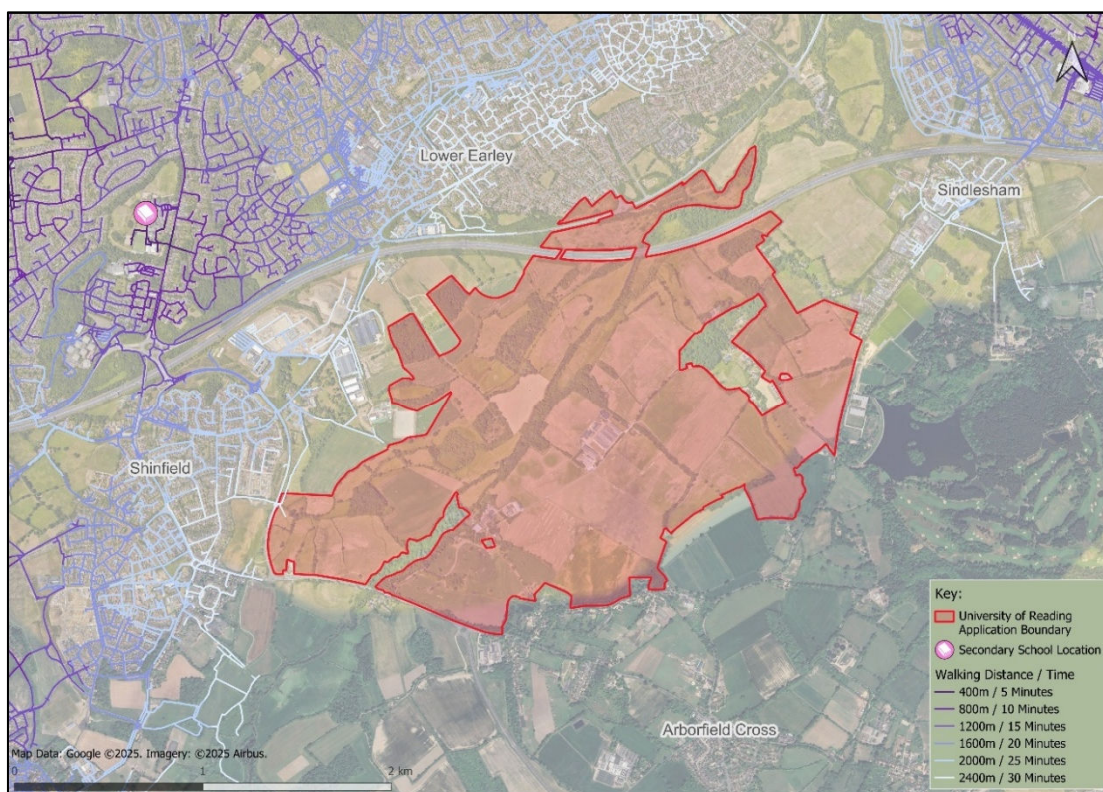


Figure 8.4: Future Secondary School Walking Accessibility

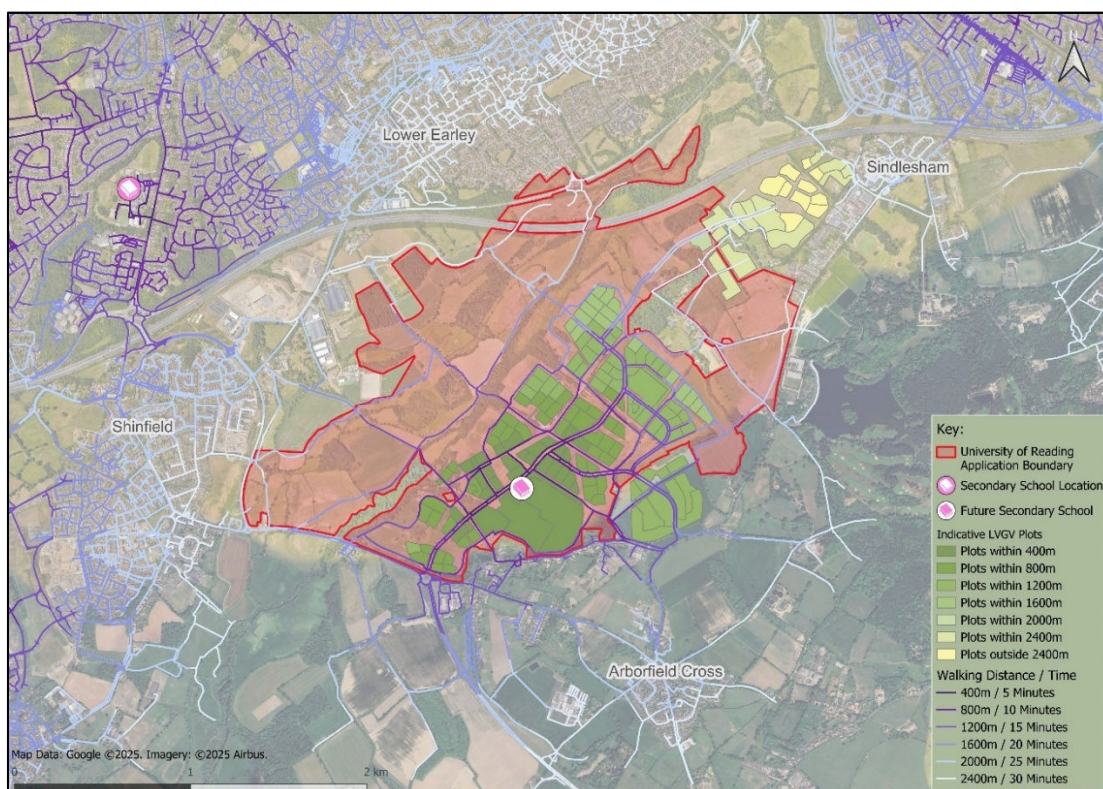
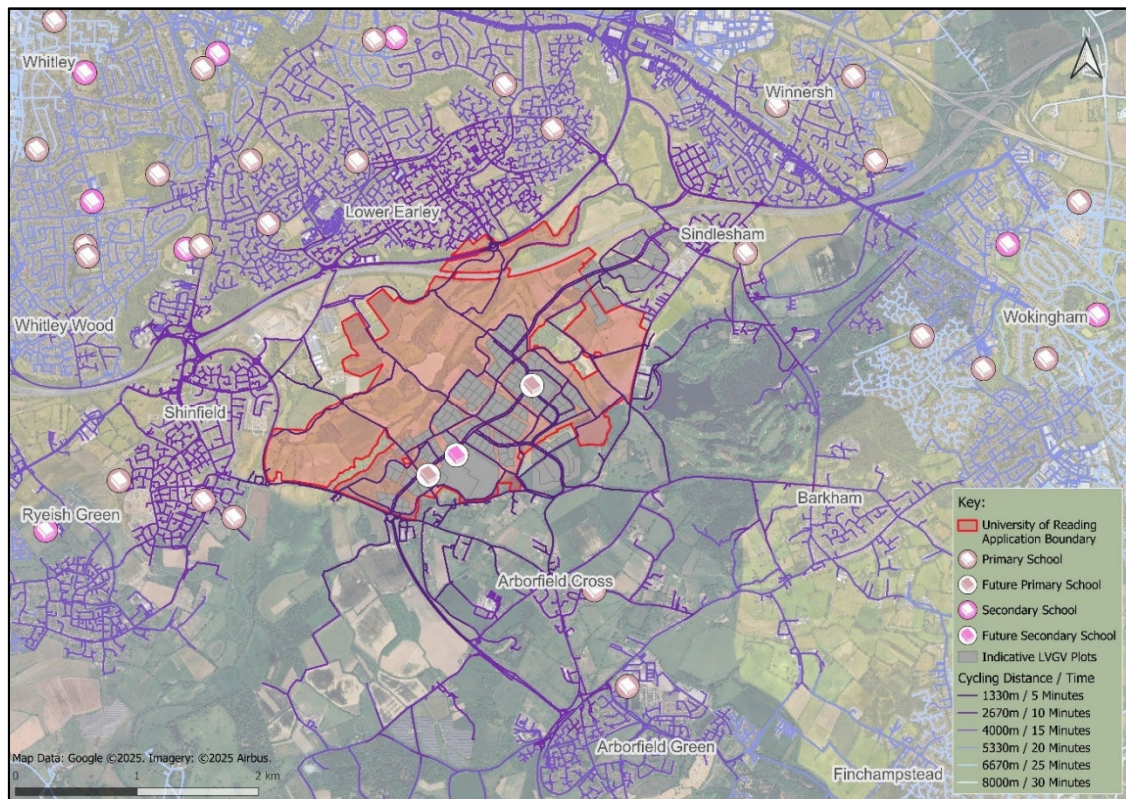


Figure 8.5: Future Education Cycling Accessibility



8.3. Employment and Retail / Community Accessibility

- 8.3.1. **Figure 8.6** shows the walkability of LVGV in relation to nearby employment hubs. While some employment areas such as Thames Valley Science Park (TVSP) are within 30 minutes on foot, the Figure does not reflect the many on-site jobs to be provided within retail, schools and community uses. For these, employees will be able to walk from home in just a few minutes.
- 8.3.2. Cycling opens up a wider range of opportunities for active travel to employment. As shown in **Figure 8.7**, local employment areas such as Winnersh Triangle and TVSP can be reached from some parts of LVGV within 10 minutes. Cycling also expands accessibility to further destinations including Green Park and Wokingham, which are reached in 25 minutes, and also Reading town centre.
- 8.3.3. Local and district centres typically have a foodstore or convenience retail anchor, but also accommodate different types of retail and amenities. For instance, the main district centre in Lower Earley includes a food superstore, a GP, pharmacy, restaurant and several other retail stores. In Shinfield the local centre includes food and convenience retail, GP, Pharmacy, Dentist, Pub and Community Centre.
- 8.3.4. Providing facilities at this scale helps to keep trips local. Where these are supported by high-quality infrastructure, as proposed at LVGV, there is a strong likelihood that they will be accessed on foot or by cycle.
- 8.3.5. This also supports behavioural change. For example, residents may choose to make regular top-up shopping trips locally on foot rather than driving weekly to a large supermarket. Integration with mobility hubs and bus stops enhances this, allowing linked trips such as shopping on the way home from work.

Figure 8.6: Future Employment Walking Accessibility

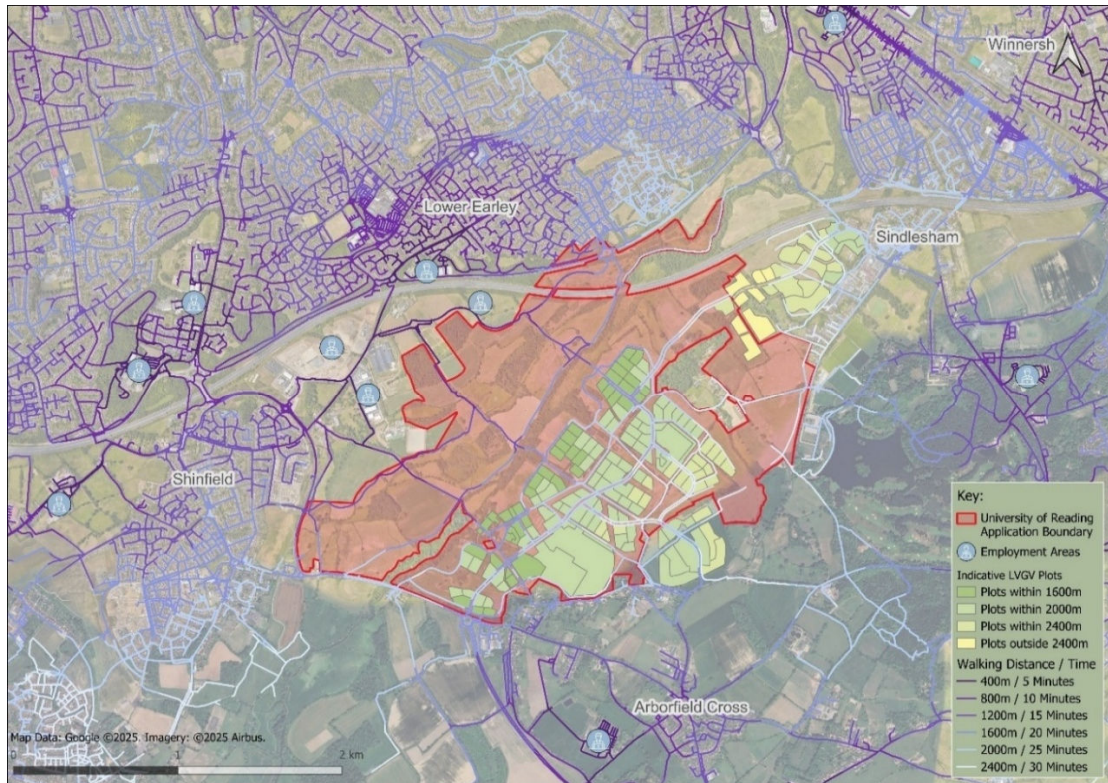


Figure 8.7: Future Employment Cycling Accessibility

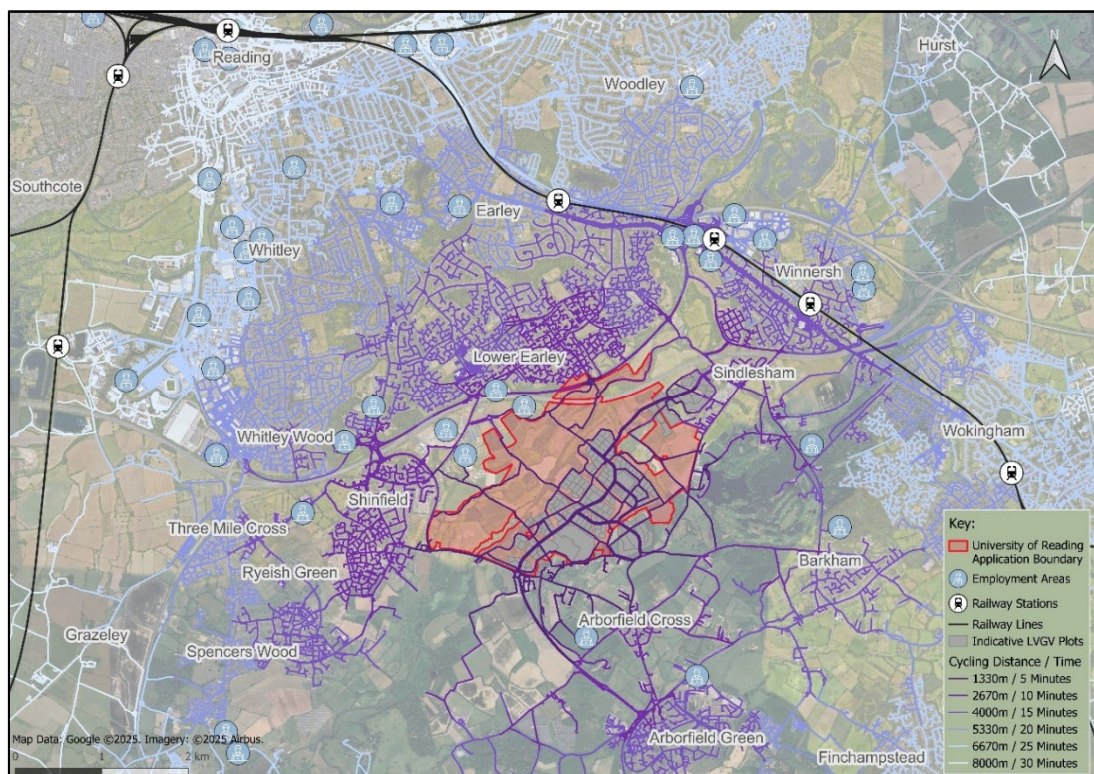


Figure 8.8: Existing Local and District Centres Walking Accessibility

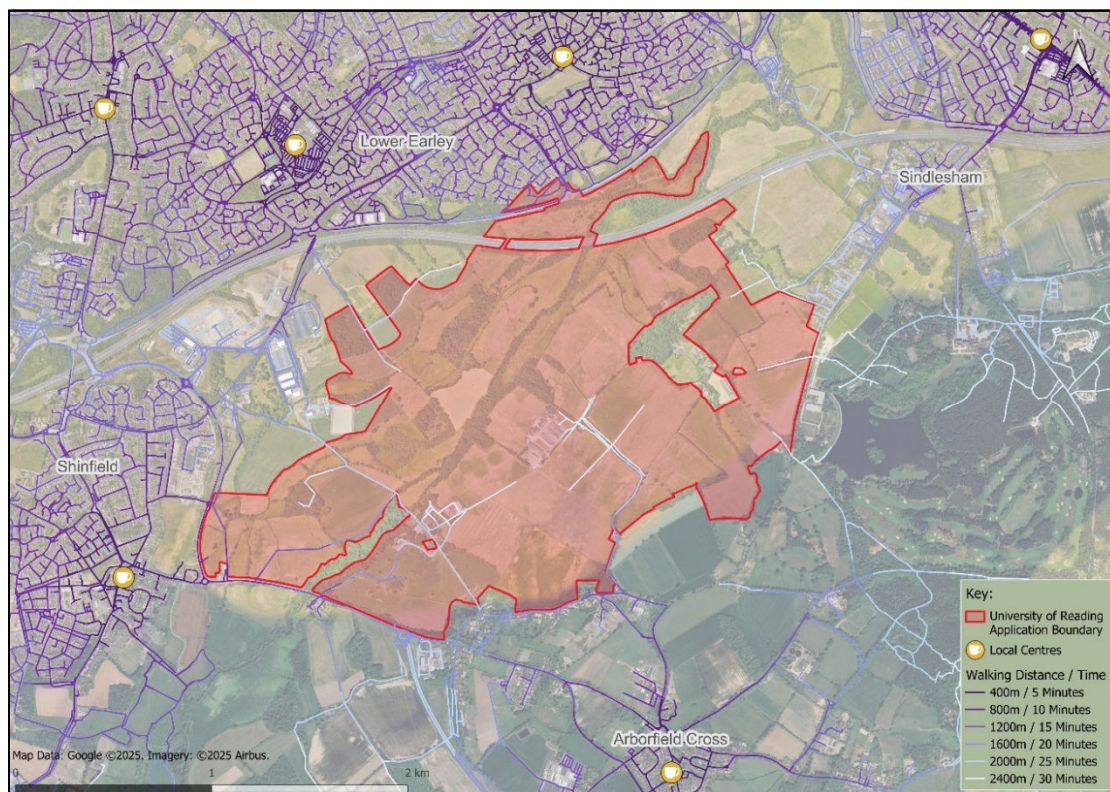
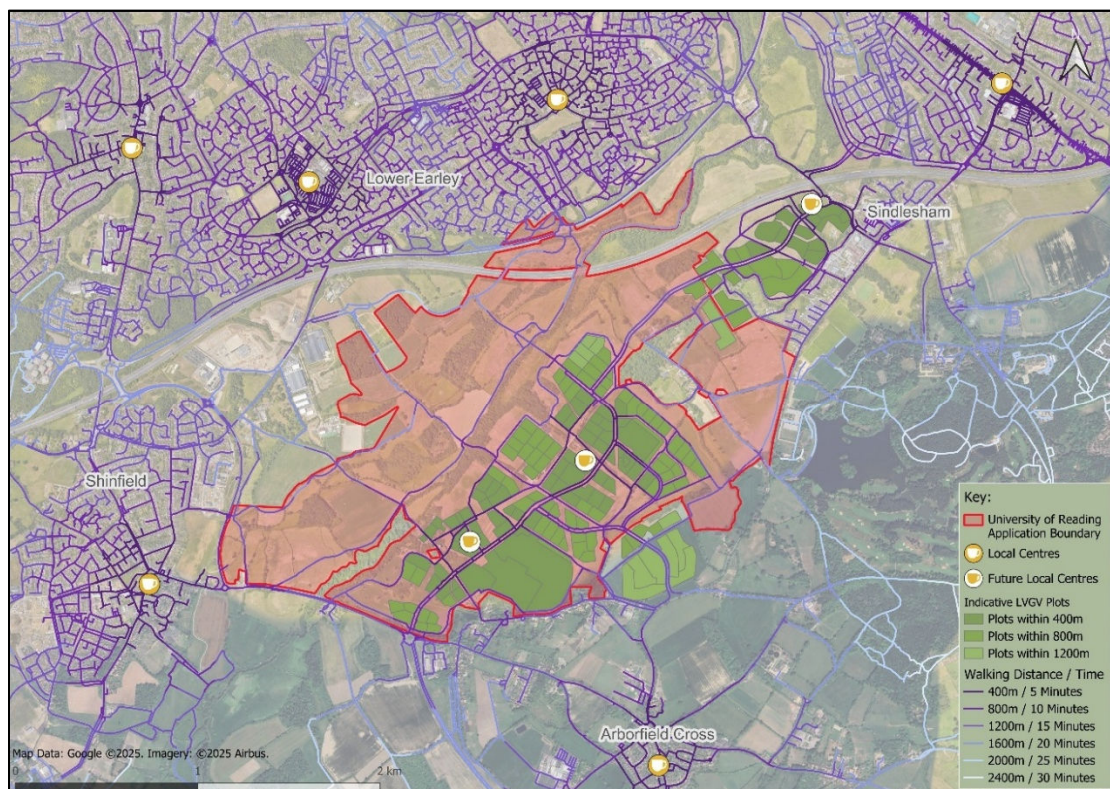


Figure 8.9: Future Local and District Centres Walking Accessibility





- 8.3.6. **Figure 8.8** displays the accessibility of the site to the existing local and district centres. While some can be reached within 30 minutes' walk from the site's edges, the allocation as a whole would not currently function as a 20-minute neighbourhood.
- 8.3.7. **Figure 8.9** then demonstrates how this changes once the LGV District Centre, and the LVGV two Local Centres are in place. All residents will be within 15 minutes' walk of convenience facilities, with many within 10 minutes.
- 8.3.8. High-quality active travel links to adjoining settlements also mean that residents can access facilities beyond LVGV, and those in neighbouring areas can choose to use new services within LVGV.

8.4. Sport and Leisure

- 8.4.1. The provision of sport and leisure facilities is recognised as a natural component of a healthy new community. Developments that integrate such facilities within their fabric support opportunities for regular exercise, recreation, and social interaction, all of which contribute positively to physical and mental wellbeing. Locating sports pitches, play areas, and leisure spaces within the heart of the development ensures that they are a visible and valued part of everyday life, encouraging residents of all ages to incorporate healthy activities into their daily routines.
- 8.4.2. In parallel, the ability to access these facilities on foot or by cycle forms a natural and sustainable means of travel. By placing sport and leisure provision within walkable and cyclable distances of homes, and by connecting them through direct and attractive routes, residents are supported to choose active travel as the default. This not only reduces reliance on the private car, but also reinforces the health and wellbeing objectives of the development by ensuring that the journey to the facility itself is an opportunity for daily activity.
- 8.4.3. **Figure 8.10** presents the current accessibility on foot to local play areas, green spaces and playing fields demonstrating good accessibility for the areas surrounding the site currently. With LVGV in place, **Figure 8.11** then demonstrates that access to such amenity space is integral to the proposals, with the whole of the allocation being within 10 minutes' walk of recreation space, and a significant proportion being within 5 minutes' walk.
- 8.4.4. In terms of Sports/Leisure Centres, Nirvana Spa in Sindlesham is accessible on foot to the northern part of the site and there is some limited accessibility to other facilities. This is shown in **Figure 8.12**. By providing a Sports/Leisure centre within the LGV proposals, future residents will have convenient access on foot to their local facility, as shown in **Figure 8.13**.

Figure 8.10: Existing Leisure and Play Areas Walking Accessibility

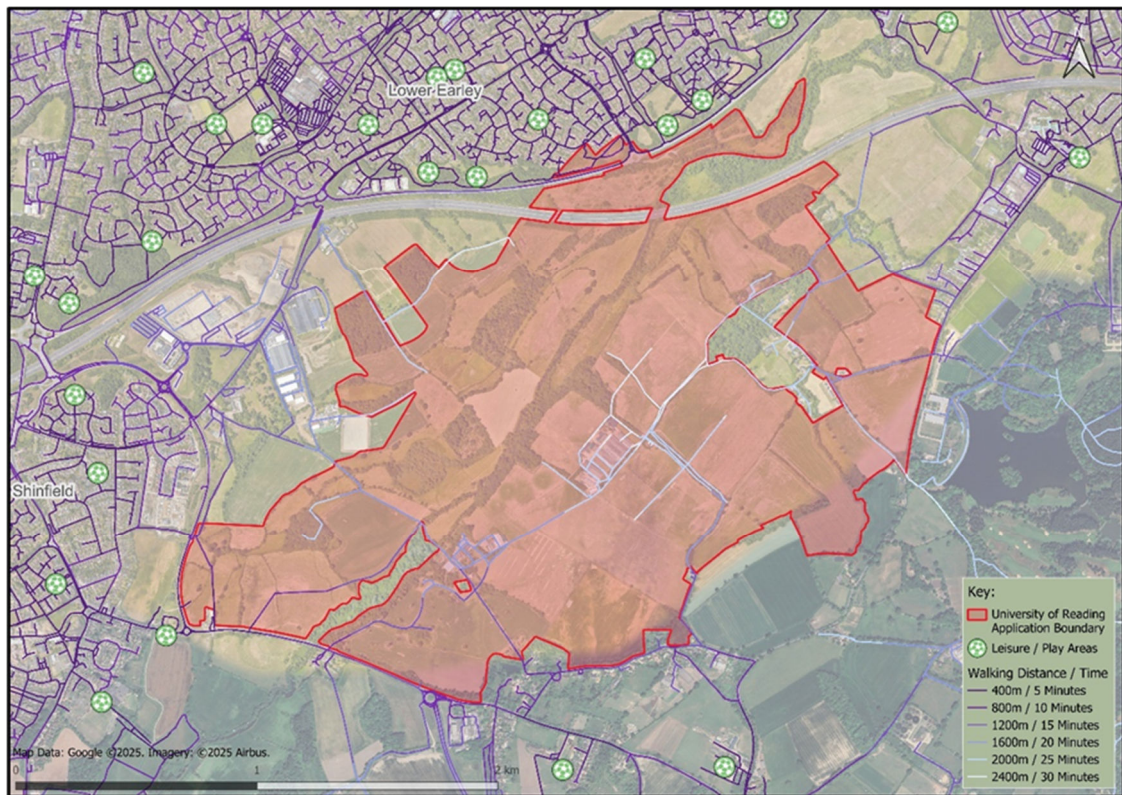


Figure 8.11: Future Leisure and Play Areas Walking Accessibility

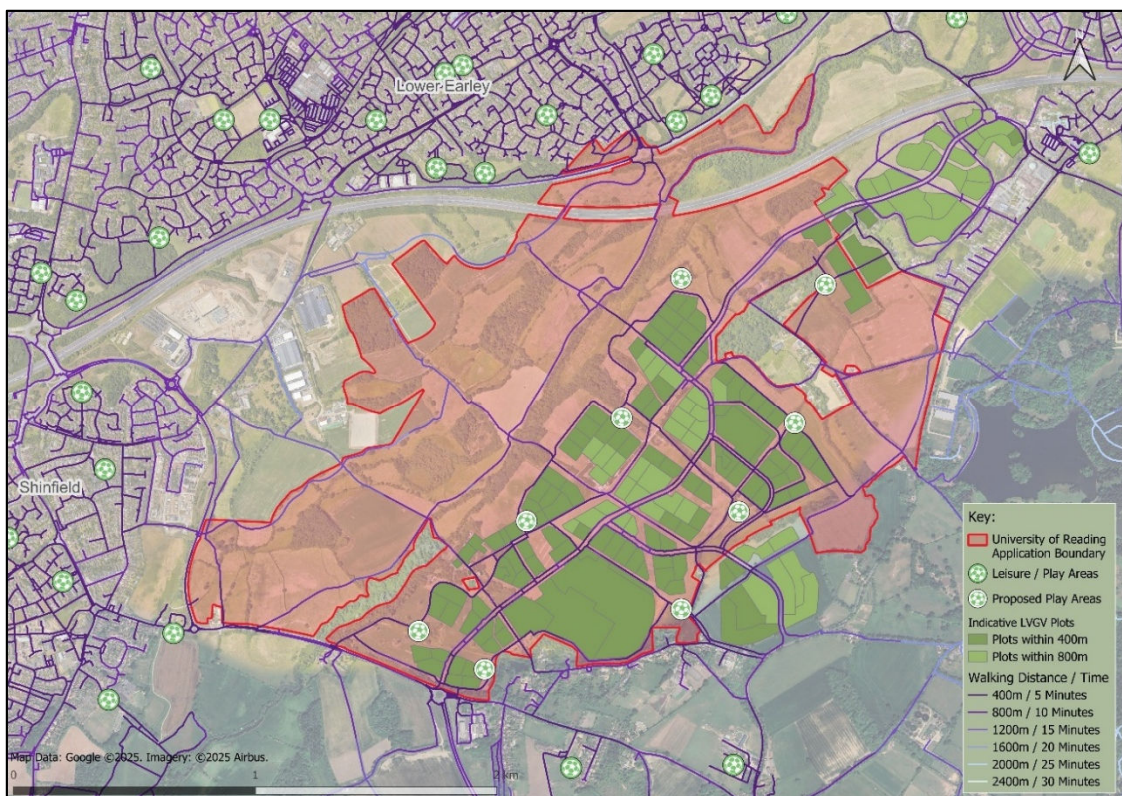


Figure 8.12: Existing Sports / Leisure Centre Walking Accessibility

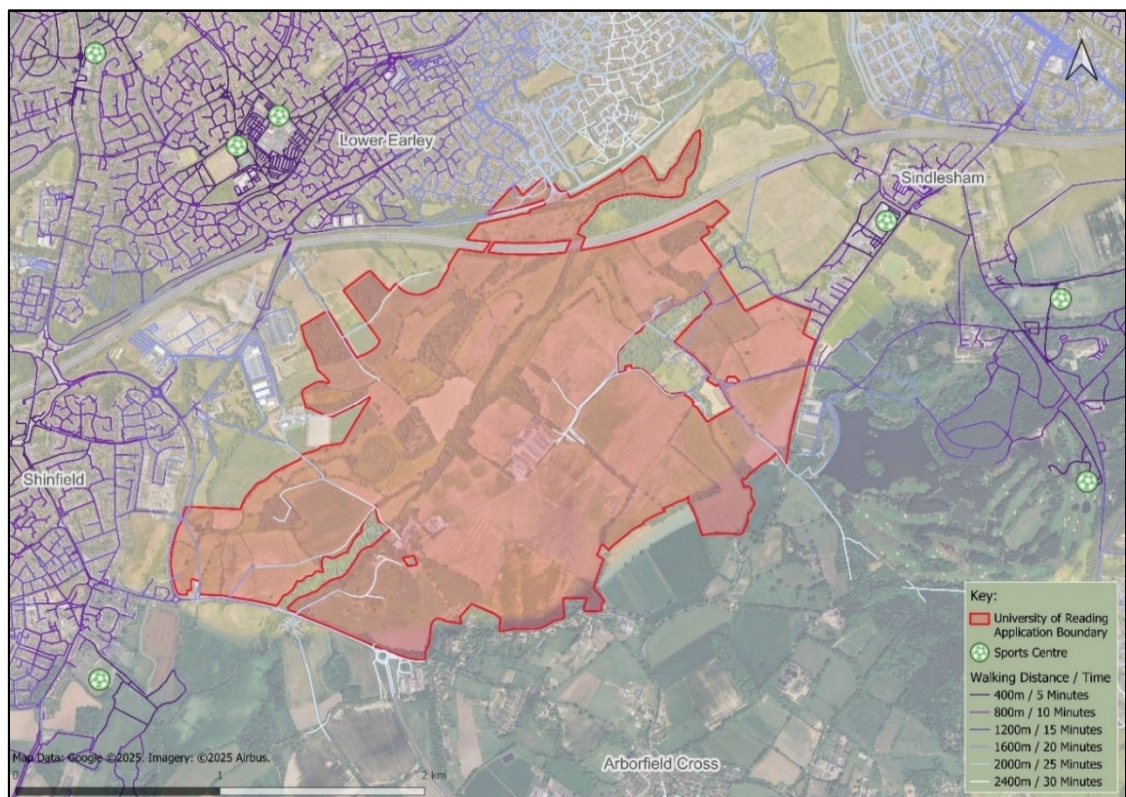
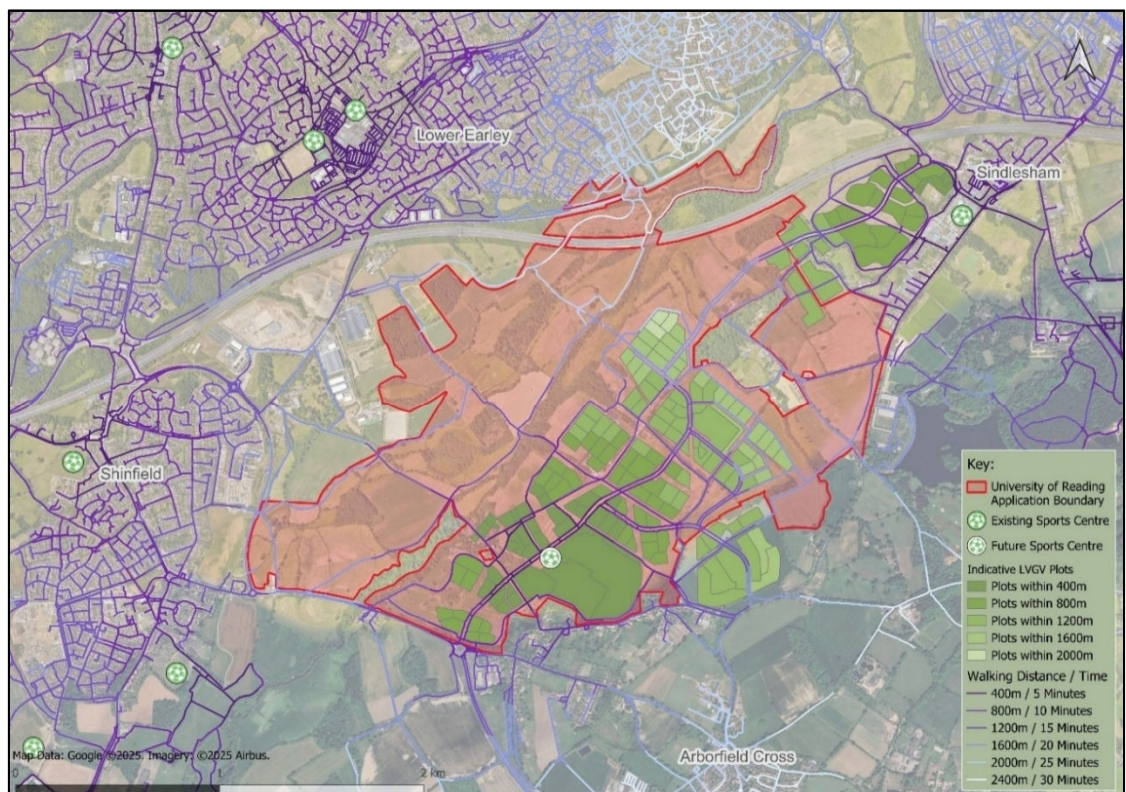


Figure 8.13: Future Sports / Leisure Centre Walking Accessibility





8.5. Summary

- 8.5.1. This section of the Transport Assessment demonstrates that the Illustrative Masterplan for LGV has been developed to deliver the principles of a 20-minute neighbourhood, with key facilities such as schools, shops, community services, and open spaces located within convenient walking and cycling distances of homes. The inclusion of new primary and secondary schools, together with district and local centres, ensures that residents will be able to meet their daily needs within a short walk or cycle. This reduces reliance on the private car and supports higher levels of self-containment of trips within the development.
- 8.5.2. The assessment also highlights that the Illustrative Masterplan embeds high-quality walking and cycling connections both within the site and to the wider network, extending access to employment, leisure, and services beyond LVGV. By ensuring that everyday destinations can be reached within 10–20 minutes on foot or by cycle, the proposals place active travel at the heart of the development, aligning strongly with local and national policy objectives for healthy, well-connected communities.



9.0 Public Transport Strategy

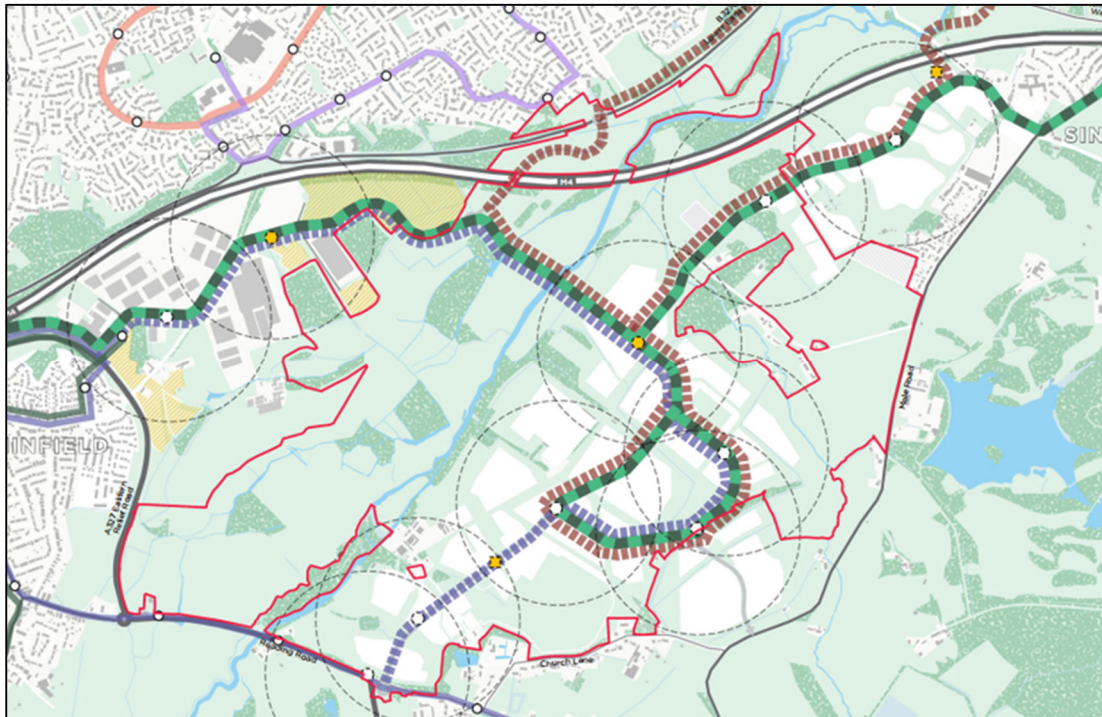
9.1. Context

- 9.1.1. Travel by public transport modes represents the preferred sustainable travel choice for longer journeys which lie beyond a reasonable walk and cycle distance. This importance is recognised within the development and placemaking principles which form Draft Policy SS13 of Local Plan Update which seeks the integration of high-quality public transport routes to key destinations beyond the site such as Reading and Wokingham railway stations.
- 9.1.2. Accordingly, a public transport strategy for the proposed development has been developed to demonstrate that future residents and other users of LVGV will benefit from a high level of accessibility to bus services.
- 9.1.3. The key element of the emerging public transport strategy for LVGV is the introduction of new high quality bus services from the outset of any development, operating between LVGV and key destinations such as Reading, Wokingham and Winnersh. This will cater for trips by public transport to the significant employment, retail and leisure destinations within Reading and Wokingham town centres. Moreover, delivering good bus service connections between LVGV and the rail stations at Winnersh, Reading and Wokingham will also facilitate a range of opportunities for onward travel along the national rail network.
- 9.1.4. The strategy has been formulated on the basis of providing new services in a phased manner in order to deliver a 30 minute frequency which can increase to 20 minutes as the build-out of LVGV progresses.

9.2. Facilitating Travel by Bus

- 9.2.1. The philosophy that has been adopted is to ensure that all areas of residential development are located within 400m of bus stops for the new services.
- 9.2.2. **Figure 9.1** depicts the location of the bus stops within LVGV which will be provided to a high specification akin to Wokingham Borough Council's 'Gold Standard'. Shelters will be of a high quality with Real Time Information provided at all stops.

Figure 9.1: Bus Stop Provision within LVGV



- 9.2.3. As can be seen, The Illustrative Masterplan and primary street network have been progressed in a manner that ensures all the residential parcels are located within 400m of a bus stop. Moreover, the key ancillary uses such as the district centre, local centres and primary / secondary school provision are also located in close proximity to the bus route corridors, thereby ensuring that a high level of accessibility to the new bus services is achieved within LVGV.
- 9.2.4. Notably, the primary street network is provided at a high standard which allows unrestricted movement for buses in both directions and safeguards alternative bus routings throughout LVGV, thereby building in flexibility in terms of how the services are introduced and adapted over time.
- 9.2.5. It is proposed to implement a bus-only section along the internal street which routes to the south-east of the District Centre area of LVGV. The bus only link would be enforced through physical measures at either side of the greenspace to prevent general traffic using the link, thereby providing an attractive corridor that is restricted to pedestrian, cycle and bus movements only. This will help to ensure that buses benefit from priority measures aimed at minimising travel times as they route along the internal network.
- 9.2.6. Furthermore, the key junctions along the primary streets within the central areas of LVGV are being provided as signal control. This enables the signal timings of the junctions to be governed in a manner that positively benefits the passage of buses through these areas.

9.3. Phasing of Development

- 9.3.1. The public transport strategy has been formulated based on the intended phased delivery of the development and associated highway infrastructure. In this respect, it is intended that the residential parcels will come forward in tranches from three areas of the site, namely:
- North-Eastern area served of Mill Lane
 - Eastern area served off Mole Road
 - Southern area served off Arborfield Road



- 9.3.2. In conjunction with the initial build out of development from the three areas, work will soon commence on the construction of the primary street network through the site. This includes the internal connections between the north-eastern area at Mill Lane through to the southern areas being served off Arborfield Road and Mole Road as well as the westerly connection over the river Loddon to Thames Valley Science Park.
- 9.3.3. An indicative build-out of the residential elements of LVGV, which is based on development progressing inwards from these three areas, is presented in **Table 9.1** below.

Table 9.1 : Indicative Phased Build Out of LVGV Dwellings

Phase	Year	North Eastern Area (Mill Lane)	Eastern Area (Mole Road)	Southern Area (Arborfield Rd)	Cumulative Dwellings	Cumulative Dwellings (Mid Year)
Phase 1	Year 1	25	25	25	75	38
	Year 2	50	50	50	225	150
	Year 3	75	75	75	450	338
	Year 4	100	100	100	750	600
	Year 5	100	75	150	1,075	913
Phase 2	Year 6	100	50	200	1,425	1,250
	Year 7	100	50	200	1,775	1,600
	Year 8	100	5	200	2,080	1,930
	Year 9	50	-	200	2,330	2,205
	Year 10	50	-	200	2,580	2,455
	Year 11	-	-	200	2,780	2,680
Phase 3	Year 12	-	-	200	2,980	2,880
	Year 13	-	-	200	3,180	3,080
	Year 14	-	-	200	3,380	3,280
	Year 15	-	-	200	3,580	3,480
	Year 16	-	-	200	3,780	3,680
	Year 17	-	-	100	3,880	3,830
	Year 18	-	-	50	3,930	3,930
	End State	750	430	2,750	3,930	3,930

- 9.3.4. It is anticipated that the first residential occupations can be achieved during 2028 (year 1). Construction of the interconnecting primary street networks would be underway in 2028/2029 so that the network of primary streets is established before year 6. Further information relating to the sequencing of the highway infrastructure which has a direct influence on the phased implementation of bus services is set out in **Section 17.0** of this Transport Assessment.
- 9.3.5. The precise phasing will of course be subject to change and refinement as the development proposals are advanced and implemented. However, the trajectory provided in **Table 9.1** provides a suitable and logical basis from which the principal components of the public transport strategy have been established.



9.4. Phase 1 Bus Services (Commencing Year 1)

- 9.4.1. The initial build out in the southern area of LVGV will be located within a 400m walk distance of the Arborfield Road corridor which forms the southern frontage of the site. It is proposed to implement new bus stops in the immediate vicinity of the access roundabout which comprises a fourth arm onto the Arborfield Road / Observer Way roundabout. Notably, the access proposals also include the provision of a Toucan crossing of Arborfield Road at this location to ensure a high level of pedestrian connectivity across the corridor to and from the bus stops.
- 9.4.2. Residents in the southern area will therefore benefit from the existing Route 3 services which will deliver a 15 min frequency for journeys to Arborfield, Shinfield and Reading as well as a 60 min frequency to and from Wokingham.
- 9.4.3. There are currently no bus services operating in close proximity to the parcels off Mole Road and Mill Lane and hence it is proposed to introduce a new service from the outset to cater for development in these areas. As can be seen from Drawing No. A392-1011/P4 attached within **Appendix F**, the new 30 min frequency service would route between the two development parcels via Mole Road and then provide a connection near to Winnersh rail station before continuing along the A329 Reading Road corridor to Wokingham town centre.
- 9.4.4. Provision for buses to turn near the entrance to each of the parcels during the initial build out stages will ensure that the Phase 1 service operates well within a 400m walk distance of all new dwellings. Moreover, cycle parking will be provided at the bus stops which will further enhance the accessibility of the services.
- 9.4.5. The introduction of the Phase 1 service would route new bus services along King Street Lane in Sindlesham. This corridor is currently only served by a weekly service and hence the new 30 minute bus service would enhance public transport accessibility for existing residents in this area. Moreover, the development proposals would include the provision of improved waiting facilities at the existing stopping points along King Street Lane to further benefit the existing residents in this area.

9.5. Phase 2 Bus Services (Commencing Year 6)

- 9.5.1. As the development progresses beyond 900 dwellings, the network of internal streets being constructed during the first phase will be in place to facilitate internal connections between the parcels and also westwards over the river Loddon through the Thames Valley Science Park. This will then allow the implementation of a new service that routes through the heart of the LVGV development.
- 9.5.2. As depicted on Drawing No. A392-1012/P4, attached within **Appendix F**, it is proposed to introduce a new 30 minute frequency service operating between Wokingham and Reading via Winnersh rail station. Buses would route from Reading using the A33 corridor and then along the B3270 before entering LVGV via the Thames Valley Science Park off the Shinfield Eastern Relief Road. The service would then route through the central area of LVGV before undertaking a small loop in the southern area to ensure good coverage throughout. Buses would then exit the site at the north east onto Mill Lane. From this point the service would route onto the A329 Reading Road corridor near to Winnersh Rail station before continuing into Wokingham.
- 9.5.3. Residents of LVGV would therefore benefit from a service operating at a 30 minute frequency to Reading, Winnersh and Wokingham.

9.6. Phase 3 Bus Services (Commencing Year 12)

- 9.6.1. The viability analysis that has been undertaken indicates that there is scope to introduce a further 2 vehicles along the route, thereby offering the opportunity for the service frequency to be increased to 20 minutes during the 3rd phase of development.



- 9.6.2. However, the new highway link over the M4 motorway is likely to become available for use before the 3rd phase which will offer new opportunities for routing services northwards towards Reading. This new access infrastructure will therefore offer scope to potentially extend services that currently operate along the A3290 corridor between Reading and Winnersh Triangle Park & Ride so that they also penetrate into LGV.
- 9.6.3. Similarly, as Thames Valley Science Park becomes fully built out the increased patronage from the new employees is likely to afford the opportunity to reconfigure the Leopard 3 services along the Arborfield Road corridor. For example, this could take the form of improving the frequency along the corridor, with additional buses routing to the Thames Valley Science Park through LGV.
- 9.6.4. Drawing No. A392-1013/P4, attached within **Appendix F** shows how there is potential for additional services to permeate through the site from the northern and southern frontages during Phase 3 of the build out as described above.
- 9.6.5. It is however important to note that precise routing of additional bus services that could be delivered as LVGV approaches full build-out is not a matter that can be fully determined at this stage given that the strategy needs to be cognisant of the configuration of other bus services operating in the area which are likely to change over the coming years. A flexible approach is therefore proposed in which provision is made for the introduction of 2 additional buses during Phase 3 of the strategy. These additional vehicles can be utilised to enhance the frequency of the core service to 20 minutes or alternatively used to implement further service enhancements such as those described above, as is deemed appropriate through a stakeholder monitoring process which would be instigated throughout all phases of the strategy.
- 9.6.6. This flexible approach will ensure that the overall end-state provision is tailored to maximise public transport accessibility for the new residents of LVGV and indeed the surrounding areas.

9.7. Viability Appraisal

- 9.7.1. Whilst it is important to promote new bus services that are attractive to the future residents and employees at LVGV, it is also essential that the proposals are financially viable and therefore sustainable in the longer term.
- 9.7.2. The public transport strategy has therefore been informed by a viability appraisal of the proposals in order to help identify the level of financial pump priming that is likely to be required to deliver the services during the build out of LVGV. The financial requirements of the proposed new bus services have first been established before setting out the revenue that is likely to be generated by the patronage arising from the new residents and employees and other users within LVGV.

Bus Operating Costs

- Vehicle Requirement

- 9.7.3. The likely travel times for the new bus services have been identified by consulting current timetable information to ascertain actual timings that are achieved along the adjacent corridors (and hence include allowances for alighting and embarking at bus stops). This indicates that an average speed of 25mph is achieved through the recently implemented Arborfield Garrison SDL, albeit speeds along other areas of the network are slower and depend on the directional of travel during peak and off peak periods.
- 9.7.4. The travel times for the new service that is being introduced within Phase 1 are shown in **Table 9.2** below. Timings for the element of the route which utilises the A329 Reading Road corridor have been established from the Lion 4 service. As can be seen, it is evident that a 30 minute frequency can be achieved with two vehicles.



Table 9.2 : Travel Times for Phase 1 Bus Service

Route	AM Peak Hour	Off Peak	PM Peak Hour
To Wokingham	29 mins	27 mins	30 mins
From Wokingham	30 mins	27 mins	29 mins

- 9.7.5. The journey times for the new service being introduced during Phase 2 and continuing through Phase 3 have been identified in a similar manner as depicted in **Table 9.3** below. Again, use has been made of the timings for the Lion 4 service to establish travel times along the A329 corridor whereas timings along the A33 corridor are based on the Route 600 timetable.

Table 9.3 : Travel Times for Phase 2 Bus Service (includes routings within LVGV)

Route	AM Peak Hour	Off Peak	PM Peak Hour
To Reading	62 mins	57 mins	65 mins
From Reading	54 mins	49 mins	55 mins

- 9.7.6. The results of the above journey time analysis indicate that 4 vehicles would be needed in order to deliver a 30 min frequency in each direction throughout the day.

- Vehicle Operating Costs

- 9.7.7. Based on advice received from Wokingham Borough Council an annual operating cost of £275,000 per vehicle has been allowed for to provide high quality buses to operate along the new routes. This is considered to represent a high cost parameter for new bus services and therefore ensures a very robust appraisal of viability.

Forecast Revenues

- 9.7.8. Revenues that would be generated from the future new residents and other users of LVGV have been calculated based on the patronage levels that are likely to be achieved. In order to ensure a robust appraisal however, no allowance has been taken of any uplift in mode share from existing levels. Similarly, revenue attributable to patronage generated from existing residents living beyond LGV which would benefit from the increase bus provision along the surrounding corridors has also been excluded.

- 9.7.9. The parameters that have been used to derive the revenue for the proposed service are set out below.

- LVGV Trip Generation

- 9.7.10. The trip generation for all uses at LVGV is set out in **Section 6.0** of this Transport Assessment. Consideration has also been given to the effect of the sensitivity scenario testing set out in **Section 10.0**. However, whilst the application of enhanced parameters to reflect increase mode shares and trip containment do have a have positive effect in terms of reducing car travel, the net effect in terms of external bus patronage is fairly balanced. Hence the viability appraisal is based on the trip generation associated with the Core Scenario parameters.

- 9.7.11. To inform the viability analysis, the peak hour trip generation of external trips has been converted to daily trips based on typical profiles for each of the land uses.

- 9.7.12. The resultant external trips identified as being assigned to public transport represent travel by bus and rail. The patronage has therefore been adjusted downwards to reflect the elements which is bus related, albeit an allowance has been made to recognise that a number of trips to rail stations would utilise bus services as part of a linked trip.



- Fare Revenue

- 9.7.13. Bus services in the area currently operate with a £3.00 cap on one-way ticket fares. Account has however been taken of the effect of concessionary fares such as free bus passes for pensioners. Based on discussions with Wokingham Borough Council, allowing for the proportion of concessionary fares that typically apply effectively reduces the £3.00 fare to an average of £1.90. This is the fare value that has been applied to all external trips arising from LVGV with the following two exceptions.
- 9.7.14. A higher concessionary allowance has been applied to the education trips which mainly comprise pupils travelling to and from the secondary school being provide within LVGV. In recognition that bus operators can often apply more generous concessions for school children, the fare has been reduced to £1.50 (50%) for the education related trips.
- 9.7.15. Conversely, no reductions for concessionary fares have been applied to the employment trips which predominantly relate to the expansion of the employment uses within Thames Valley Science Park.

Viability Assessment

- 9.7.16. The above parameters have been used in order to identify the viability of the proposed bus service throughout the build out of LVGV. The viability analysis is undertaken on a year by year basis to allow for the increasing patronage and phased implementation of new services as the phased build out progresses.
- 9.7.17. The revenue from the residential element of LVGV has been apportioned based on the projected build out trajectory shown in **Table 9.1**. Revenue from the employment related trips associated with the Thames Valley Science Park expansion have been apportioned on the basis that the additional development would be implemented linearly over a 10 year period. Of note however is that revenue from Thames Valley Science Park is only accounted for during Phases 2 and 3 which is when the bus service is able to route over westwards over the river Loddon and continue through the Thames Valley Science Park.
- 9.7.18. The results of the viability assessment indicate that the proposed bus services would require pump prime financing throughout Phase 1 and for the majority of Phase 2. The service is however forecast to return profits during the latter years of Phase 2.
- 9.7.19. The allowance for the introduction of an additional 2 buses during Phase 3 (which offers flexibility and could be used to increase frequencies or introduce additional services from the northern or southern frontages) would then require further subsidy. However, the analysis shows that commercial viability is achieved before full build out of LVGV which is an important consideration as it indicates that the public transport strategy is self-sustaining in the longer term.
- 9.7.20. The total subsidy required over the full period of build out amounts to approximately £5.0 million. This is the equivalent of approximately £1,200 per dwelling which is significantly higher than the amount that is typically sought by Wokingham Borough Council through S106 obligation. This is indicative of the higher level of public transport provision that is being promoted at LVGV than is typically the case.
- 9.7.21. The £5M subsidy requirement has been allowed for within the Infrastructure Delivery Plan (IDP) which is being prepared for LVGV. Of note is that additional bus related items are also being allowed for within the IDP such as contributions towards the delivery of public transport priority measures which are planned along corridors to the north into Reading.



9.8. Monitoring

- 9.8.1. The overall financial requirement is based on current forecasts of build out trajectory and trip generation profiles and therefore could change as the services are introduced. For example, if the actual mode share is higher than anticipated then a lower level of subsidy would be required. Similarly, it is important to note that the occupation rates should only be regarded as indicative and may vary depending on a number of factors, including market conditions. In this respect, a slower build out would also act to increase the amount of pump priming that is needed.
- 9.8.2. It is important that the strategy is implemented in a sensible and reasonable manner that ensures the available resources are utilised efficiently and appropriately. For these reasons it is recognised that the strategy will need to be kept under review to ensure that the phased introduction of the services can be delivered in a flexible manner that responds to the actual build out of the various development parcels and also the level of patronage that is achieved.
- 9.8.3. As has been noted earlier, a flexible approach is advocated for the final phase of the strategy where provision has been made for the introduction of 2 additional buses which can be made available to implement further service enhancements. Actively monitoring the implementation of the strategy will therefore ensure that these assets are employed in a manner that best responds to the prevailing needs at the time. This will ensure that the overall end-state provision is tailored to maximise public transport accessibility for the new residents at LGV and indeed the surrounding areas.

9.9. Possible Alternative Configurations

- 9.9.1. The proposed strategy has been informed from discussions and meetings with officers at Wokingham Borough Council, Reading Borough Council and representatives of Reading Buses. During the process account has been taken of 'lessons learned' from the challenges and opportunities pertaining to the introduction of new services in the area over recent years.
- 9.9.2. During this process, a range of alternative routing and phasing scenarios have been evaluated and, in this respect, it is evident that there are a number of possible alternative service configurations that could be adopted to achieve the desired service frequencies based on the number of vehicles that can be sustained as identified through the viability appraisal.
- 9.9.3. Notably, the strategy that has been identified centres around the introduction of new bus routes rather than relying on the re-routing of any existing services that operate in the area. The advantage of this approach is that it ensures that there will be a resultant increase in the overall level of bus accessibility in the area and also avoids any potential negative implications of detracting from the level of service which can sometimes be the case where existing services are re-routed.
- 9.9.4. Making use of current bus services, either through diversions or extensions or existing routes, can however sometimes offer efficiencies. Accordingly, discussions continue to be held with Wokingham Borough Council and representatives of Reading Buses to establish where there are opportunities to refine and improve the strategy, particular in respect of building upon existing services.
- 9.9.5. For example, there is potential to utilise the bus services operating within the Lower Early area, such as the Route 21 service, as a means of delivering public transport provision through LVGV. Extending this service southwards through LVGV could offer an alternative option of delivering bus connectivity to key destinations with Reading. Services between LVGV and Wokingham could then be catered for by diverting the Leopard 3 services through the southern area of LVGV. In turn, buses routing within the north-eastern area of LVGV could be delivered via a slight variation to the connection to Winnersh Triangle Park & Ride hub which already forms part of the public transport strategy.



- 9.9.6. Discussions will continue to be held with Wokingham Borough Council and Reading Buses as the planning application progresses in order to explore and expand upon possible variants of the strategy. This will ensure that the proposals are tailored in the most appropriate manner that can be implemented in a flexible and responsive approach to ensure the continued delivery of high quality services that are self sustaining in the longer term.



10.0 Scenario Testing

10.1. Introduction

10.1.1. This section reviews the internalisation and multimodal trip generation methodology set out in **Section 6.0** in the context of the proposed active travel and public transport focused strategies presented in **Section 7.0** and **Section 9.0**. It examines how the forecasts may change under a more aspirational scenarios where higher levels of internalisation and sustainable mode share are achieved which better reflects the design intent of the proposed development.

10.1.2. This approach is compared with the trip generation methodology used to inform the traffic modelling analysis which places greater reliance on established forecasting methods and observed travel patterns. By considering both approaches, the assessment provides a more comprehensive evidence base that recognises both conventional practice and the opportunities that could accrue from the positive elements that are envisioned for LGV as established within the planning policy for the allocation site and reflected within the Illustrative Masterplan.

10.2. Methodology

10.2.1. The alternative scenarios set out below have been prepared using same methodology as set out in the trip generation Technical Note at **Appendix C**. The only variables adjusted are the levels of trip internalisation and travel mode shares that could be achieved at LGV.

10.2.2. The tested scenarios are based on the full occupation of the development. This represents the most robust basis for assessment as it is within this scenario where the overall number of trips are higher.

10.3. Sensitivity Scenarios

10.3.1. Two alternative sensitivity scenarios have been considered to test the potential influence of higher levels of sustainable travel and internalisation.

- **Sensitivity Scenario 1 (SS1):** Assumes higher mode shares for sustainable modes (walking, cycling and public transport), both for internal and external trips.
- **Sensitivity Scenario 2 (SS2):** Builds on SS1 by also applying higher levels of trip internalisation, reflecting the cohesive relationship between residential and non-residential land uses within LGV and the high-quality active travel links between them.

10.4. Sensitivity Scenario 1 Parameters

10.4.1. **Table 10.1** below shows the mode share parameters used in the Core assessment scenario as established within **Section 6.0** of this Transport Assessment. It then depicts a more ambitious set of mode share targets (SS1), which are considered to be achievable given the scale of active travel and public transport interventions being promoted.



Table 10.1: SS1 Scenario Mode Share Parameters

	Residential Internal		Residential External		Education External		Other External	
	Core Scenario	SS1	Core Scenario	SS1	Core Scenario	SS1	Core Scenario	SS1
Walk	61%	65%	1%	2%	1%	2%	1%	2%
Cycle	2%	5%	2%	4%	7%	8%	2%	3%
Public Transport	2%	2%	6%	8%	40%	42%	6%	8%
Car Driver	23%	18%	70%	65%	26%	24%	61.9%	58%
Car Passenger	12%	10%	21%	21%	26%	24%	29.1%	29%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Source: Consultant derived. includes Excel rounding

Residential Mode Shares – Internal Trips

10.4.2. It is expected that a reduced mode share for car trips could be achieved owing to the quality and amount of active travel infrastructure which is proposed to be delivered. Although the car passenger share reduces slightly, this reflects the expectation that some short internal car-sharing trips will instead be displaced by walking or cycling.

10.4.3. Public transport mode share for internal trips has not been uplifted, as shorter journeys within LVGV are more likely to be undertaken on foot or by cycle.

Residential Mode Shares – External Trips

10.4.4. Pedestrian and cyclist mode shares have been uplifted by a smaller amount than for internal trips. The connections to the surrounding area offer an opportunity to realise a higher proportion of these trips by foot and cycle, albeit the longer distances involved mean that mode shifts are unlikely to be as significant as for internal journeys.

10.4.5. An increase in public transport use for external trips is considered reasonable, as bus and rail will be an important travel mode for people to travel to and from key places like London, Reading and other local towns.

10.4.6. The increases to the above modes are consequently reflected as a reduction in car mode share, whilst car passenger are assumed to remain unchanged, reflecting typical occupancy patterns over longer distances.

Education Mode Shares – External Trips

10.4.7. The external education trips represent people travelling from the surrounding areas to the proposed new primary and secondary schools being provided at LVGV. Relatively modest reductions in car mode share percentages have been allowed for within the SS1 scenario. These trips would instead be represented on active travel and public transport modes.

Other Journey Purposes Mode Shares – External Trips

10.4.8. The other external trips represent people travelling from the adjacent areas to make use of the retail, leisure and community facilities being provided within LVGV. Again, a modest reduction in car driver mode share has been allowed for, with corresponding increases across the active travel modes and public transport modes.



10.5. Sensitivity Scenario 2 Parameters

- 10.5.1. The SS2 applies the same mode share shifts allowed for in the SS1 scenario. However, it builds upon the assessment by also allowing for less conservative assumptions relating to trip internalisation that informed the Core Scenario presented in **Section 6.0** of this Transport Assessment; thereby better reflecting the integrated mixed-use nature of services and facilities within LVGV.
- 10.5.2. As noted throughout this assessment, LVGV has been masterplanned to locate facilities and amenities within close proximity to residents and to be well connected by active travel modes. Whilst there will be certain facilities and trip purposes which cannot be delivered on site, it will be possible for a large number of daily requirements to be addressed without needing to go off-site. It is therefore considered appropriate to test higher levels of trip internalisation that may well occur.
- 10.5.3. **Table 10.2** below presents the SS2 internalisation percentages compared to the robust factors used within the Core Scenario.

Table 10.2: SS2 Scenario Residential Internalisation Parameters

Journey Purpose	Core Scenario	SS2
Commute	10%	12%
Education (Primary)	85%	95%
Education (Secondary)	85%	95%
Shopping, Leisure & Community	40%	50%

- 10.5.4. As can be seen, allowance is made for a modest increase in the proportion of employment trips that could be contained within LVGV. As identified within **Section 6.0**, the increase in hybrid working over the past 3 years means that this factor alone could account for a reduction in external commuting trips of at least 4% (assuming 2.5 days a week at home). This indicates that a 12% factor is realistically achievable given the significant quantum and range of job that will be created within LVGV and the proposed expansion of Thames Valley Science Park.
- 10.5.5. The low levels of internalisation used within the Core scenario allow for 15% of parents at LVGV electing for their children to be educated at existing schools further afield. The SS2 scenario reasonably allows for a higher proportion of the new residents to elect for their children to be educated within new primary and secondary schools being provided within the development.
- 10.5.6. Finally, the significant offering of retail / community / leisure provision at LGV can reasonably be expected to cater for the majority of trips that arise from the LGV residents. The conservative allowance of 40% that was used for the Core Scenario has therefore been increased to 50% for the purposes of the SS2 assessment.

10.6. Sensitivity Scenario Trip Generation Comparisons

- 10.6.1. Based on the parameters outlined above, **Table 10.3** presents a comparison of the two-way external and total cumulative vehicle trips generated by LVGV in the AM and PM peak hours for the Core Scenario, SS1 and SS2.

Table 10.3: Sensitivity Scenarios - Resultant Peak Hour Vehicle Trip Generation

	AM Peak Hour Two-Way Vehicles			PM Peak Hour Two-Way Vehicles		
	Core Scenario	SS1 Scenario	SS2 Scenario	Core Scenario	SS1 Scenario	SS2 Scenario
External Trips	3,096	2,884	2,589	3,020	2,814	2,583
Total Trips	3,634	3,306	3,066	3,227	2,976	2,780



- 10.6.2. As **Table 10.3** shows for the SS1 scenario, with only some comparatively small changes in mode shifts to active travel and public transport, a fairly significant reduction (approximately 10%) can be achieved in the number of vehicle trips generated by LVGV.
- 10.6.3. Moreover, if the above mode shifts are combined with greater levels of trip internalisation (SS2), it could yield reductions in vehicle trips of approximately 15% when compared to that assessment within the Core scenario.
- 10.6.4. For completeness, **Table 10.4** below sets out the resultant mode share comparisons for all trips based on the three scenarios that have been appraised.

Table 10.4: Sensitivity Scenarios - Resultant Peak Hour Mode Shares

	AM Peak Hour Mode Shares			PM Peak Hour Mode Shares		
	Core	SS1	SS2	Core	SS1	SS2
Walk	19%	21%	24%	11%	12%	15%
Cycle	3%	5%	5%	2%	4%	4%
Public Transport	11%	12%	11%	6%	8%	7%
Car Driver	46%	42%	40%	59%	54%	52%
Car Pass	22%	21%	20%	22%	22%	21%
Total	100%	100%	100%	100%	100%	100%

Source: Consultant calculated. Includes Excel Rounding.

- 10.6.5. As can be seen, both the SS1 and SS2 scenarios show a clear uplift in active travel mode shares, particularly walking, reflecting the strength of the proposed infrastructure and the co-location of land uses within LVGV. Cycling also benefits, albeit to a smaller but still meaningful extent.
- 10.6.6. Public transport mode share also increases for the SS1 scenario, although in the SS2 test the effect is moderated as more trips are contained within LVGV and therefore do not rely on external public transport movements.
- 10.6.7. The allowances made for increased non car mode shares and trip internalisation within the SS1 and SS2 scenarios are considered to be modest and readily achievable. This helps to demonstrate that the trip generation analysis used to inform the traffic modelling of LVGV represents a robust approach in terms of identifying traffic impacts that could arise from the proposed development.

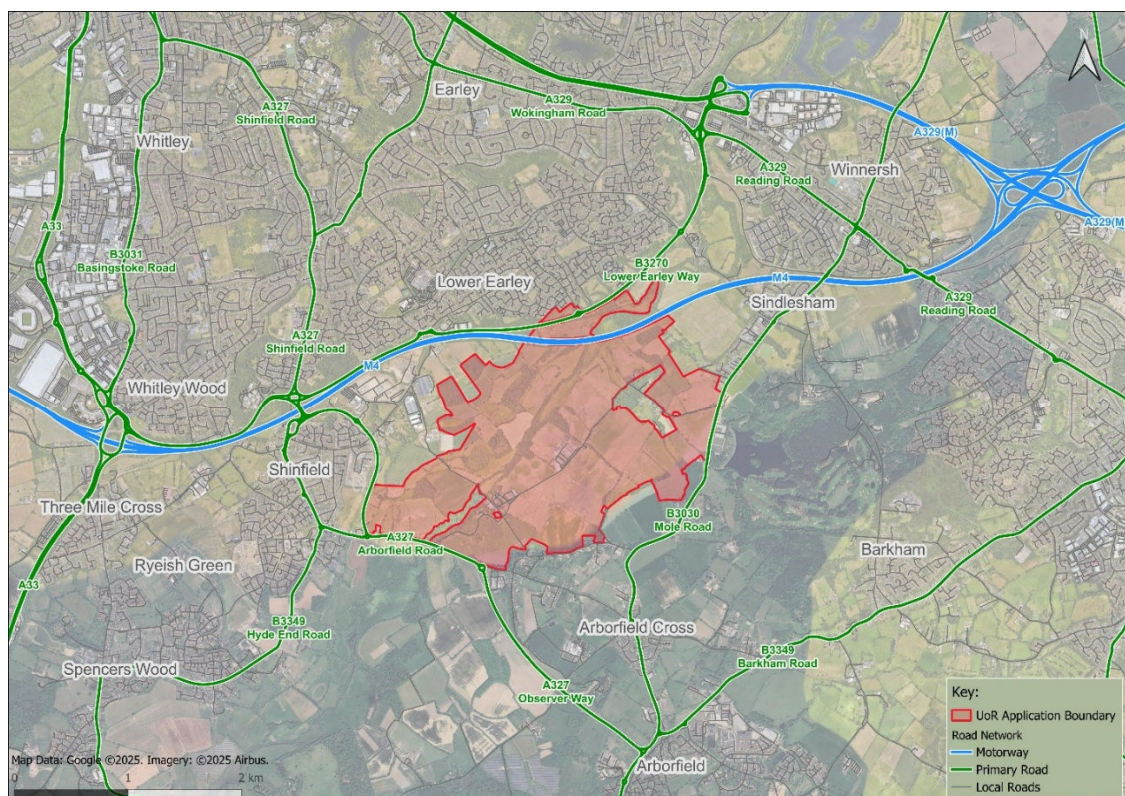
11.0 The Highway Network

11.1. Introduction

11.1.1. This section summarises the local highway network serving the site, prior to subsequent sections of this Transport Assessment which then consider the residual effects of the traffic movements generated by the proposed development including an appraisal of impacts along the surrounding network to be appraised.

11.1.2. **Figure 11.1** illustrates the site and surrounding main highway links.

Figure 11.1: Local Highway Network



11.2. Local Highway Network



Western Connections

11.2.1. To the west of the LVGV allocation lies the Shinfield Eastern Relief Road (SERR), a purpose-built 7.3-metre carriageway, with capacity to accommodate two-way general traffic movements alongside provision in places for pedestrians and cyclists. This corridor forms part of a wider package of infrastructure associated with the expansion of Shinfield and Arborfield in recent years, serving to reduce through-traffic on Hollow Lane within Shinfield village itself. The SERR also provides a high-capacity connection to the Black Boy gyratory via a bridge over the M4, carrying three traffic lanes in each direction.

- 11.2.2. From Shinfield village, Hyde End Road provides additional local connectivity between Shinfield and Spencers Wood, linking communities south of the M4 with the wider corridor network.

Southern Connections

- 11.2.3. The A327 Arborfield Road corridor, located immediately to the south of the site, is a principal east-west route in the local area. To the west, it provides direct connections to Shinfield and Reading, while to the east it continues through Arborfield. The corridor accommodates both regional and local traffic demands, serving residential communities as well as educational and employment destinations along its length.



- 11.2.4. To the south-east of the site, A327 Observer Way channels traffic away from Arborfield Cross and nearby settlements, benefitting environmental and road safety conditions within the village core.

- 11.2.5. Observer Way also facilitates connections south towards Eversley, Yateley, and Farnborough, while also supporting movements to Wokingham and Reading.

Northern Connections

- 11.2.6. To the north of the M4, the B3270 forms an east-west movement corridor. This provides a direct connection between M4 Junction 11 and the Black Boy gyratory, as well as onward links to Hatch Farm Way and the A329 corridor.



- 11.2.7. Hatch Farm Way provides a routing option for east-west travel, bypassing Winnersh. The road links Lower Earley Way with the A329 Reading Road. Further to the east, Reading Road routes through Wokingham, ultimately connecting with the A329(M) and Bracknell.

- 11.2.8. Approximately 300m to the north of the Lower Earley Way's junction with Hatch Farm Way is the Showcase Roundabout, a signalised hamburger junction. The western arm of the junction provides a connection through Earley towards Reading, and the eastern arm through Winnersh. To the north, Winnersh Triangle Business Park is served, from where access to the A329(M) is gained.

- 11.2.9. Immediately north-east of LVGV, connectivity is provided by Mill Lane, which runs through Sindlesham and connects to a roundabout near Nirvana Spa, where it meets Mole Road (north and south arms) and New Road. Mill Lane presently provides a vehicular route between Lower Earley and Sindlesham, however its western section is constrained by two narrow bridges allowing only one vehicle to pass at a time.



Eastern Connections

- 11.2.10. Mole Road runs along the eastern frontage of the LVGV allocation, forming an important north-south corridor. To the south, Mole Road becomes Sindlesham Road before reaching Arborfield Cross, while to the north it becomes King Street Lane, passing through southern Winnersh before reaching the A329 Reading Road. From here access can be gained to Winnersh railway station, Winnersh Triangle Business Park, and the A329(M).
- 11.2.11. To the east of the site, the B3349 Barkham Road provides a further local connection between Arborfield and Barkham, continuing onwards to Wokingham. This route plays a role in linking nearby settlements to the wider road network.

Wider Network Context

- 11.2.12. The wider network surrounding the site includes several significant corridors as shown on **Figure 11.1**. The A33 to the west provides a principal radial route into Reading, with strong bus priority measures and supporting Park & Ride facilities at MereOak. To the north, the A329 Reading Road corridor links Winnersh with Wokingham and Bracknell, while the A329(M) provides east-west links to the Reading and the M3. To the south, the A30 and A331 can be accessed via the A327, facilitating travel towards Camberley, Farnborough, and Guildford.

11.3. Strategic Motorway Connections

- 11.3.1. The site benefits from good strategic connectivity owing to its proximity to the M4 motorway. Junction 11, located approximately 4 km to the west of the centre of the site, is a signal controlled interchange with connections to London, Heathrow, and South Wales. It also integrates directly with the A33 corridor, offering direct access into central Reading and links to the MereOak Park & Ride facilities.
- 11.3.2. To the east, Junction 10 is situated around 5 km from centre of the site. This grade-separated free-flow interchange provides access to the A329(M), a dual carriageway link to Bracknell, Maidenhead, and the M25. Junction 10 serves a strategic role in linking the Thames Valley corridor with the wider South East. The availability of two motorway junctions in close proximity offers resilience, dispersal of demand, and route choice for both passenger and freight traffic.

11.4. Highway Network Summary

- 11.4.1. The highway network in the vicinity of the site is extensive and provides a strong framework of accessibility for both local and regional travel demands. Together, the road infrastructure shown demonstrates that the site sits within a well-connected network.

11.5. Personal Injury Collision Review

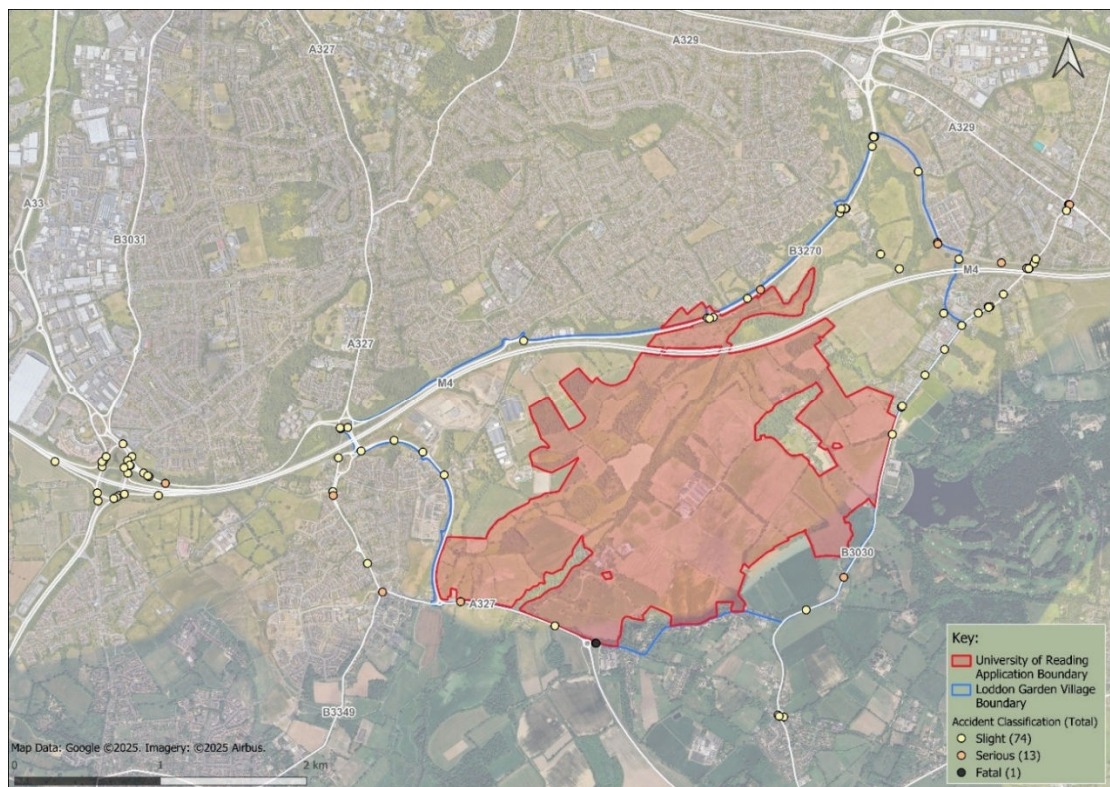
- 11.5.1. Personal Injury Collision data for several road corridors in the vicinity of the site was obtained from Wokingham Borough Council, covering the most recent five-year period available at the time (1st January 2020 – 31st December 2024). This data is included in **Appendix G**.

11.5.2. Collision records were retrieved for the following road corridors:

- A327 and Shinfield Eastern Relief Road (SERR)
- Hatch Farm Way
- Hollow Lane
- Lower Earley Way
- Mill Lane
- Mole Road
- King Street Lane
- M4 Junction 11

11.5.3. **Figure 11.2** shows the location and severity of the recorded collisions.

Figure 11.2: Personal Injury Collision Locations



11.5.4. **Table 11.1** below sets out a summary of the accidents separated by road corridor and severity.

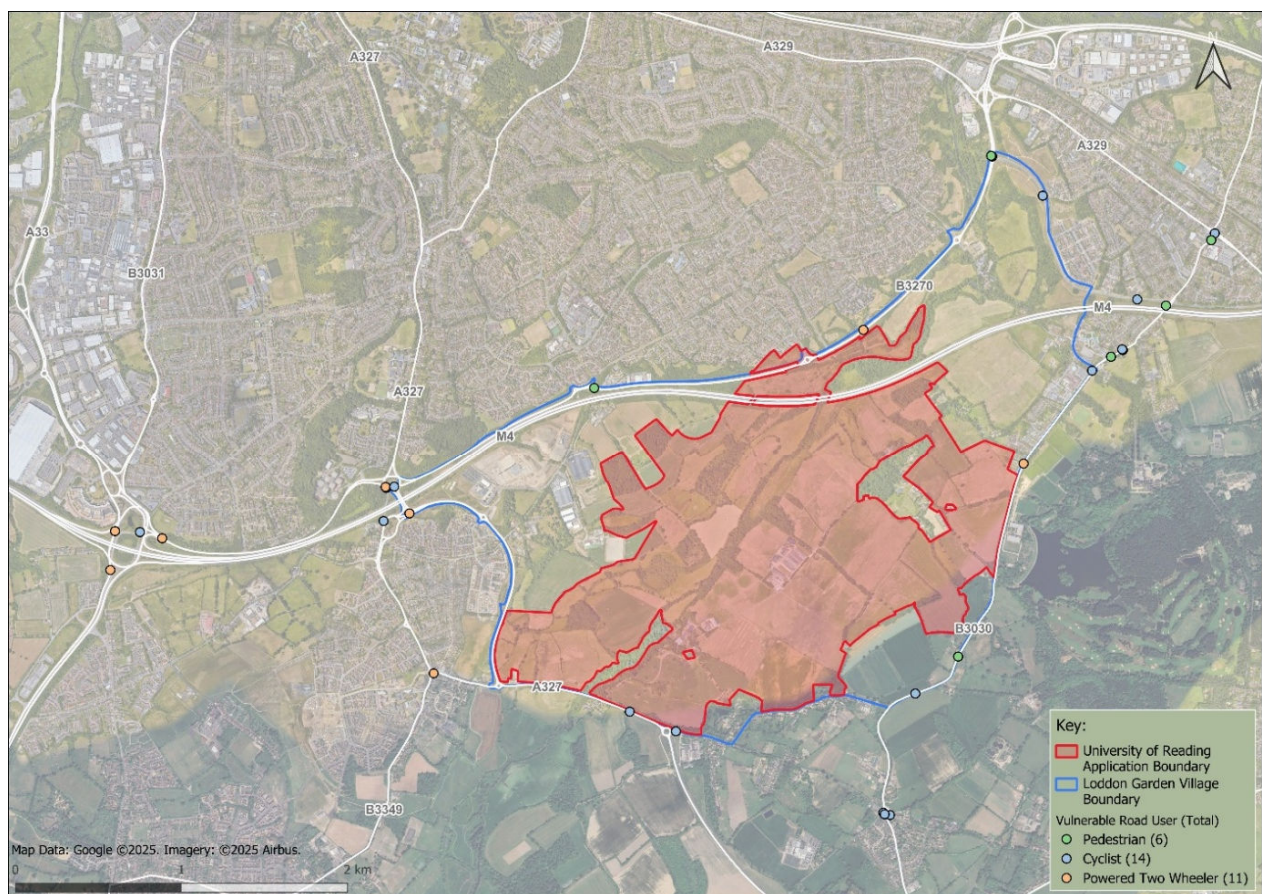
Table 11.1: Personal Injury Collision Summary

Road Corridor	Severity			Vulnerable Road User (VRU)		
	Slight	Serious	Fatal	Pedestrian	Cyclist	Powered Two-Wheeler
A327 & SERR	12	1	1	0	6	3
Hatch Farm Way	2	3	0	0	2	0
Hollow Lane	3	2	0	0	1	1
Lower Earley Way	13	1	0	2	0	2
Mill Lane	3	0	0	0	0	0
Mole Road & King Street Lane	20	4	0	4	4	2
M4 Junction 11	21	2	0	0	1	3
Total	74	13	1	6	14	11

Source: WBC Data

11.5.5. **Figure 11.3** highlights the location of Vulnerable Road User (VRU) collisions.

Figure 11.3: Vulnerable Road User Collision Locations





11.5.6. A total of 88 injury collisions were recorded within the study area over the five-year period. Of these, 31 involved a vulnerable road user : six pedestrians, 14 cyclists and 11 powered two-wheeler riders. **Table 11.2** below sets out a summary of the vulnerable road user accidents separated by severity.

Table 11.2: Vulnerable Road User Collision Summary

Vulnerable Road User	Severity		
	Slight	Serious	Fatal
Pedestrian	4	2	0
Cyclist	11	3	0
Powered Two-Wheeler	9	2	0
Total	24	7	0

11.5.7. A review of the accident data along the adjacent highway corridor is summarised below.

A327 & Shinfield Eastern Relief Road

11.5.8. Over the review period, 14 accidents were recorded, including one that resulted in a fatality. The report for the fatal collision recorded impairment by alcohol and drugs as a contributing factor.

11.5.9. No personal injury collisions were recorded along the Arborfield Road corridor at the location where the southern access for LVGV is proposed. However, the fatal accident that we recorded did occur eastbound along Reading Road after leaving the Observer Way roundabout.

11.5.10. Six of the accidents involved cyclists and three involved powered two-wheelers. All the vulnerable road user accidents were classified as resulting in slight injuries. No significant accident clusters were identified along this corridor.

Hatch Farm Way

11.5.11. Along this corridor, a total of five accidents were recorded, three of which were classified as serious. Two of the accidents involved cyclists, with one of them being classified as serious. One of these resulted from a cyclist failing to look properly and colliding with a parked vehicle, the second was the result of a cyclist entering the carriageway being struck by a speeding car.

11.5.12. No significant accident clusters were recorded along this corridor.

Hollow Lane

11.5.13. This corridor had a total of five accidents recorded, two of which were classified as serious. Two of the accidents that occurred involved a vulnerable road user, with one of the accidents being classified as serious.

Lower Earley Way

11.5.14. Along this corridor, a total of 14 accidents were recorded, including one serious accident involving a powered two-wheeler. Four accidents involved vulnerable road users; two pedestrians and two powered two-wheelers.

11.5.15. One accident cluster was identified at the Lower Earley Way / Mill Lane / Rushey Way roundabout. However, a further review of the individual accidents highlighted that they were due to driver error rather than the issues relating to road layout / geometry.

11.5.16. At the Meldreth Way roundabout where there will be a new arm to accommodate LVGV, three person injury collisions were recorded. Two of these were loss of control incidents that involved a single vehicle. The reports for these accidents recorded that these were most likely attributable to alcohol impairment.



Mill Lane

11.5.17. This corridor had a total of three accidents recorded, which were all classified as slight. There were no vulnerable road users involved in any of the accidents and no significant accident clusters were identified.

Mole Road & King Street Lane Corridor

11.5.18. Along this corridor, a total of 24 accidents were recorded. Ten accidents involved vulnerable road users, including four pedestrians and four cyclists.

11.5.19. An accident cluster was identified at the King Street Lane / Hatch Farm Way junction. Seven accidents were recorded at this location during the study period. The police records cited a failure to look properly as a causation factor in five of the seven accidents, but there was no overall inference of fault on the junction arrangement.

11.5.20. A second cluster of four accidents was recorded at Winnersh Crossroads. Two of the accidents involved drivers who disobeyed a red light and struck another vehicle. The other two involved different locations at the junction and driver failure to observe a vulnerable road user.

11.5.21. In the vicinity of the proposed LVGV access onto Mole Road, a single personal injury collision was recorded. This was an injury to a cyclists caused by being struck by an overtaking car.

M4 Junction 11

11.5.22. At this junction, a total of 23 collisions were recorded, with two of the accidents classified as serious. Vulnerable road user accidents recorded included one cyclist and three powered two-wheeler casualties. All the accidents involving vulnerable road users were classified as slight.

11.5.23. Three accidents clusters have been identified. The first is located where the westbound off-slip meets the circulatory carriageway. Four accidents were recorded here, two of which were lane change conflicts, one was a rear end shunt on the off-slip and the final was a car going through a red light.

11.5.24. The second cluster is where the eastbound off-slip meets the junction gyratory. Of the four PICs, three were related to lane changes. The other accident was a single motorcyclist who lost control in dry conditions and daylight.

11.5.25. The final cluster location was at the part of the junction gyratory close to the westbound on-slip and the B3270 exit. Two of the accidents involved going through a red traffic light (in different locations), the third was a collision between an HGV and car which was potentially in the HGV's blind spot. The other accident was caused by a car travelling the wrong way around the gyratory.

Highway Safety Summary

11.5.26. Whilst all accidents are regrettable, based on the above analysis it is not considered that there are any specific issues with highway safety in the area that would be significantly exacerbated by the traffic attributable to the development proposals.

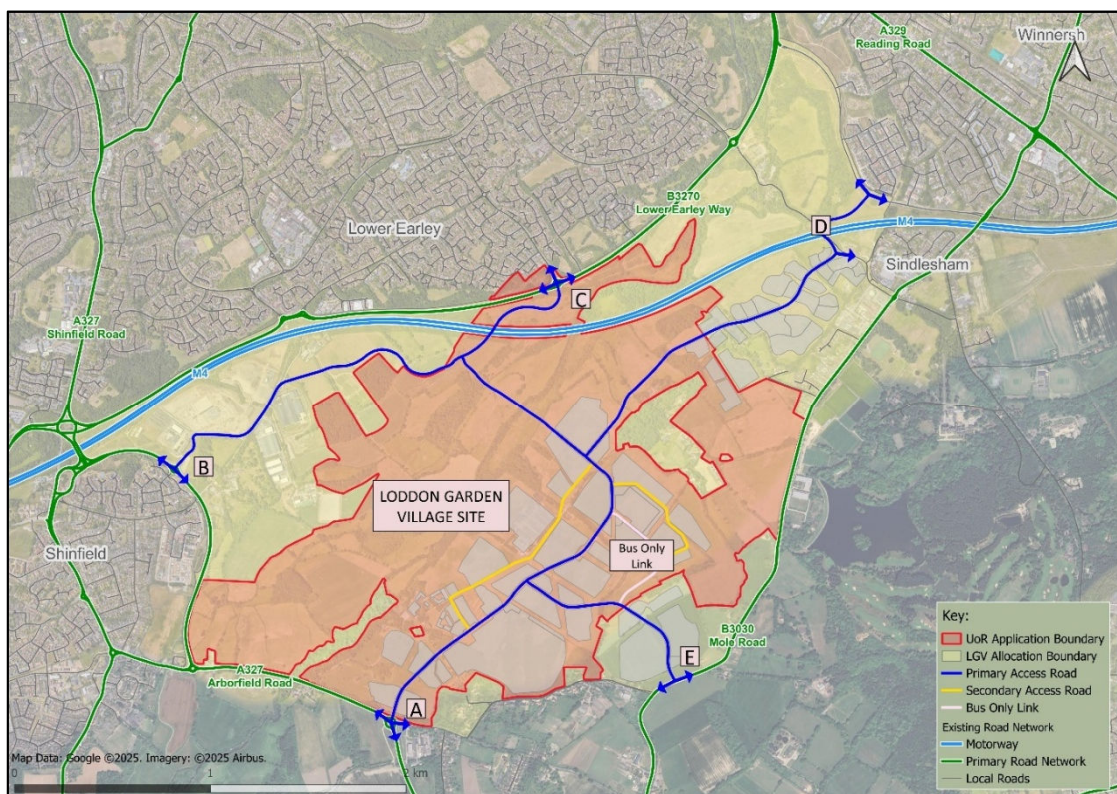
11.5.27. Of note however is that the package of highway mitigation measures that will accompany the LVGV proposals includes measures to improve pedestrian and cycle facilities, such as new and improved crossing provision along many of the adjacent corridors. Such provision will help to deliver a safer environment for vulnerable roads users undertaking journeys in the vicinity of the site.

12.0 Vehicular Access and On-Site Highway Proposals

12.1. Introduction

- 12.1.1. This section sets out the approach taken and rationale for vehicular accesses and on-site highway proposals. The strategy represents an evolution of the proposed access arrangements that have been the subject of collaboration between WBC and the landowners over a number of years.
- 12.1.2. While this planning application is primarily concerned with the accesses required for the UoR land, the broader strategy is included for completeness. In this respect, full cooperation exists between landowners to deliver connections between parcels, ensuring that delivery of the overall access strategy is not jeopardised. Indeed, the commitments and mechanisms for delivery of the internal highway infrastructure within the adjoining parcels is set out within the Infrastructure Delivery Plan (IDP) that has been prepared for the LVGV allocation site.
- 12.1.3. **Figure 12.1** illustrates the agreed access points and primary vehicular routes through LGV and the wider LVGV allocation. The proposed vehicle access arrangements seek to make good use of the recently constructed highway infrastructure in the area, which includes the Shinfield Eastern Relief Road, Arborfield Relief Road and Hatch Farm Way, by promoting direct access onto the adjacent road corridors.

Figure 12.1: Vehicular Access Strategy



12.2. Vehicular Access Locations

- 12.2.1. The five vehicular access locations shown in **Figure 12.1** are as follows.

- **A** - Provision of a fourth arm onto the A327 Arborfield Road / Observer Way roundabout.
- **B** - Improved Thames Valley Science Park / Shinfield Eastern Relief Road Roundabout.

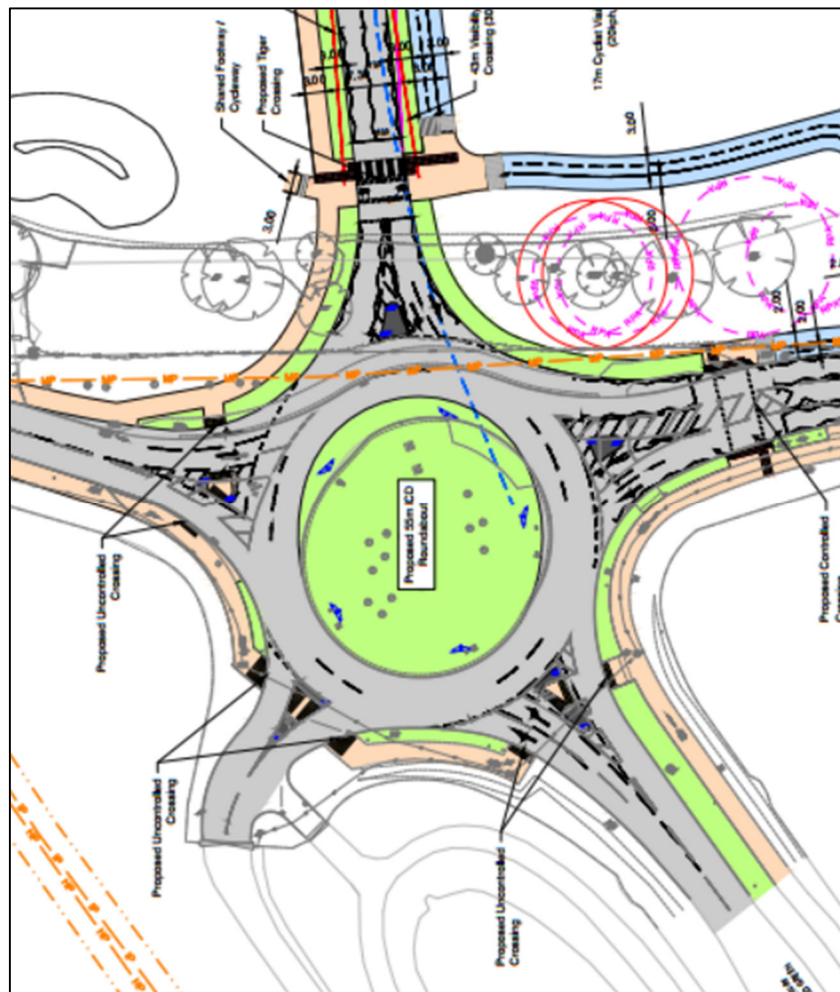
- **C** - New M4 motorway bridge crossing leading to reconfigured Lower Earley Way / Meldreth Way roundabout.
- **D** - New roundabout access onto Mill Lane at Sindlesham (Hatch Farm Land).
- **E** – New priority T-junction on to Mole Road (Gleeson).

12.2.2. As is evident from **Figure 12.1**, collectively, the access points allow development traffic to disperse effectively onto adjacent corridors, which reduces the effects of concentrating flows onto individual junctions or links. Moreover, the promotion of new highway infrastructure within the Proposed Development itself, such as the new river crossing of the Loddon and bridge over the M4 motorway corridor, will not only act to facilitate the broad dispersal of development traffic but also help to avoid extraneous routings that would otherwise occur along the road network. Indeed, the creation of a new north-south connection between the B3270 Lower Earley Way and the Arborfield Road corridors offers the opportunity for some background traffic to re-route through the development and thereby provide some relief to adjacent areas such as within and around Sindlesham and Shinfield.

12.3. Access A – A327/Observer Way Roundabout

12.3.1. The proposed layout of this access which will be formed onto Arborfield Road at the southern frontage of LVGV is depicted on **Figure 12.2** while full details are depicted on Drawing No. A392-OPA-0101/D attached as **Appendix H**.

Figure 12.2: Access A – Arborfield Road / Observer Way Roundabout



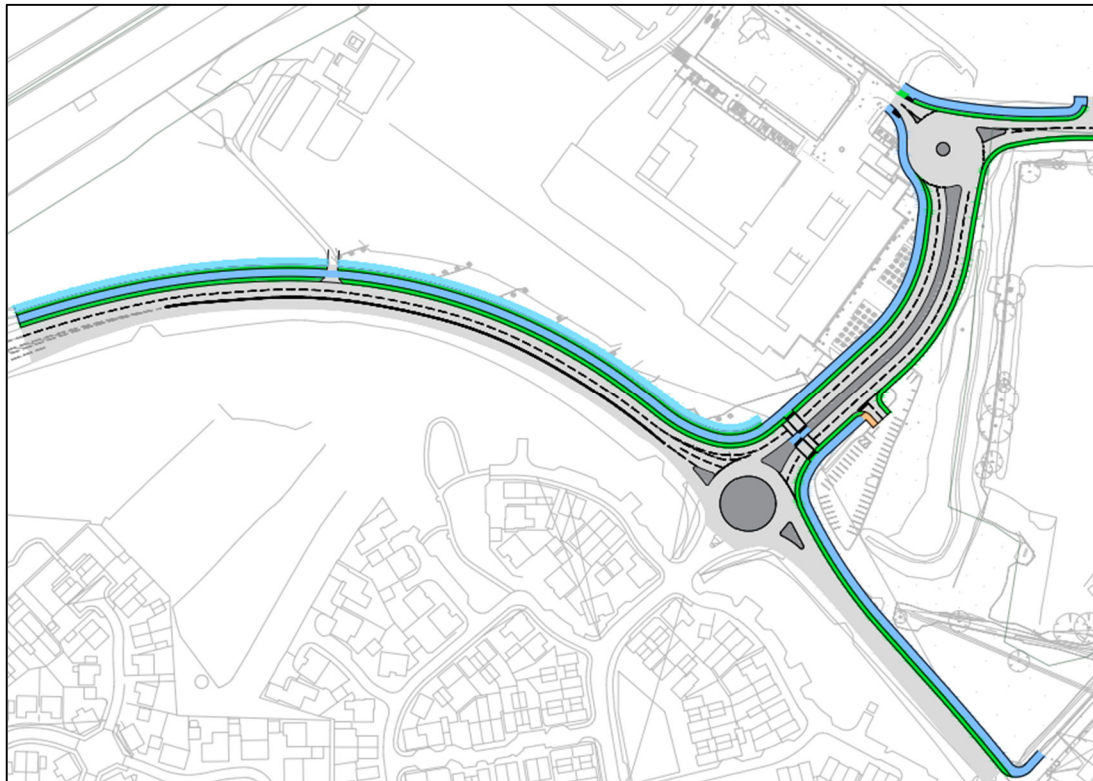


- 12.3.2. The scheme enlarges the roundabout to accommodate a new northern arm into the UoR development. Pedestrian and cycle facilities include a parallel crossing of the site access in line with LTN 1/20 and a Toucan crossing of Arborfield Road along the eastern arm, connecting to the existing shared footway / cycleway on Observer Way.
- 12.3.3. The junction proposals also make provision for pedestrian and cycle connections to a new pair of bus stops being provided along Arborfield Road to the west.
- 12.3.4. Swept path analysis of the proposed access design are presented within **Appendix I**, demonstrating that large vehicles can manoeuvre through the access in a safe and satisfactory manner.
- 12.3.5. A Stage 1 & 2 Road Safety Audit has been commissioned to independently appraise the proposed access layout. The Road Safety Audit raises no fundamental issues with the proposed arrangements and residual comments raised can be readily addressed as part of the standard detailed technical approval process.

12.4. Access B – Thames Valley Science Park / Shinfield Eastern Relief Road Access Roundabout

- 12.4.1. Access to LVGV from the west will be achieved via the primary street network being provided to the west of the river Loddon as part of the proposed connection to Lower Earley Way. A connection further to the west will however be provided as part of the expansion of the Thames Valley Science Park which will see the extension of the Primary Street that is being formed off Cutbush Lane (currently under construction).
- 12.4.2. The Thames Valley Science Park access roundabout onto The Shinfield Eastern Relief Road will however require upgrade to facilitate the expansion at Thames Valley Science Park and also to cater for the flows arising from LVGV.
- 12.4.3. A concept layout of the proposed access improvements is depicted on Drawing No. A392-080/P2 (**Appendix H**) and **Figure 12.3** below.

Figure 12.3: Access B – TVSP / Shinfield Eastern Relief Road Access Roundabout

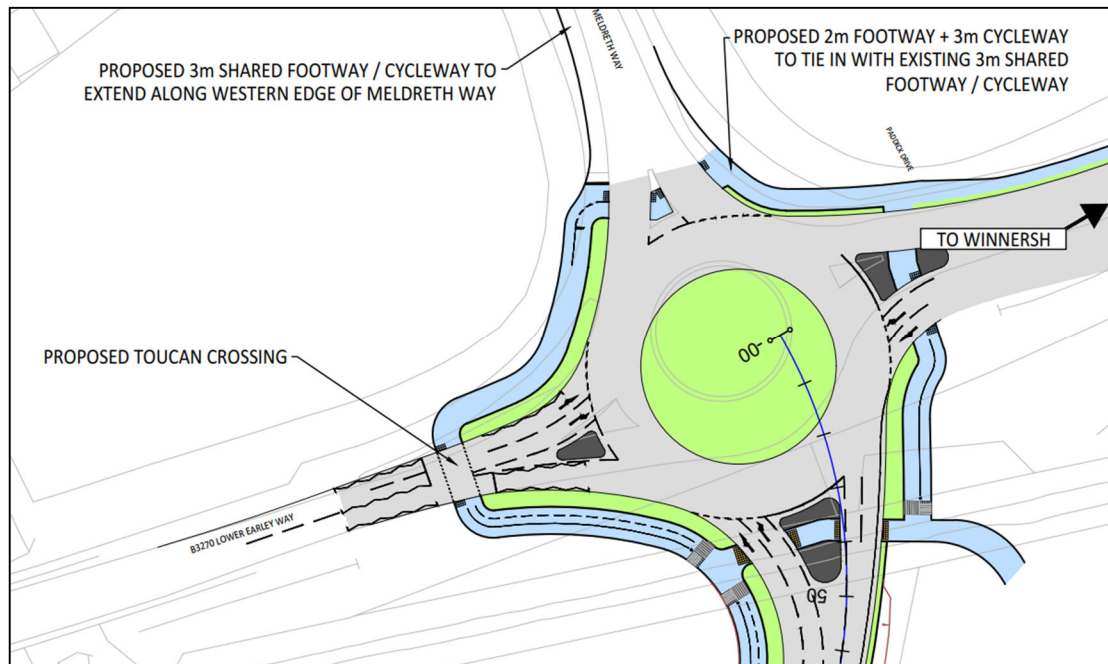


12.4.4. The proposals include delivering additional capacity at the roundabout by upgrading South Avenue so that two lanes are provided for ingress and egress movements. In addition, an additional southbound lane is promoted along the Shinfield Eastern Relief Road corridor which leads to a segregated left turn into TVSP. A Toucan crossing will also be provided along the Thames Valley Science Park approach in order to improve pedestrians and cycle connectivity for journeys along the Shinfield Eastern Relief Road corridor.

12.5. Access C – Lower Earley Way / Meldreth Way Access Roundabout

12.5.1. The proposed layout of this access at this location is depicted on Drawing No. A392-OPA-0109/C (**Appendix H**) and **Figure 12.4** below.

Figure 12.4: Lower Earley Way / Meldreth Way Access Roundabout



12.5.2. The proposals at this junction will provide an increase in the diameter of the roundabout to provide additional capacity and to accommodate a new southern arm which would provide access to LVGV via a new M4 overbridge. The proposals will provide significant beneficial infrastructure for pedestrians and cyclists, including a new Toucan crossing of Lower Earley Way. Moreover, in addition to the existing uncontrolled crossing of Meldreth Way, similar crossings will also be provided along the eastern and southern approaches to the roundabout.

12.5.3. Swept path analysis of the proposed access design are presented within **Appendix I**, demonstrating that large vehicles can manoeuvre through the access in a safe and satisfactory manner.

12.5.4. A Stage 1 & 2 Road Safety Audit has been commissioned to independently appraise the proposed access layout. The Road Safety Audit raises no fundamental issues with the proposed arrangements and residual comments raised can be readily addressed as part of the standard detailed technical approval process.

12.6. Access D – New Roundabout on Mill Lane

12.6.1. The access proposals for LVGV in this location comprise the promotion of a new roundabout which would be formed onto Mill Lane to provide an access into LVGV at the north-eastern gateway of the development. A fourth arm would be provided on the northern side of Mill Lane to deliver a reconfigured access to serve the existing development that is currently accessed in this location.

12.6.2. Details of the access arrangement will be provided as part of a separate planning application for this area of LVGV which is to be submitted by Hatch Farm Land. Notwithstanding, the anticipated concept layout for this access junction is shown on Drawing No. A392-079/P5 attached within **Appendix J**.

12.7. Access E – Priority T-Junction onto Mole Road.

12.7.1. The access proposals for LVGV in this location comprise the promotion of a new ghost island priority junction which would be formed onto Mole Road to provide an access into LVGV at the south-eastern frontage. The junction will also include provision for pedestrians and cyclists, as well as equestrians crossing Mole Road onto the Ellis's Hill Public Right of Way corridor.



12.7.2. Details of the access arrangement will be provided as part of a separate planning application for this area of LVGV which is to be submitted by Gleeson Land Ltd. Notwithstanding, the anticipated concept layout for this access junction is attached as Drawing No. ITB1731-GA-010/C within **Appendix J**.

12.8. Internal Street Network

12.8.1. The network within the proposed development will comprise a combination of Primary, Secondary and Tertiary streets to achieve a high level of connectivity through and between the various development parcels and land uses being promoted.

12.8.2. The configuration of the proposed street network is depicted on the Illustrative Masterplan and Movement Parameter Plan which are attached within **Appendix A**.

12.8.3. A main Primary Street network is being provided through LGV to enable travel between each of the access points, as well as facilitating onward journeys to the south- eastern and north-eastern areas of the wider LVGV allocation site. The Primary Street network serves an important role. Not only will it act to 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 deliver a high degree of connectivity for active travel modes.

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

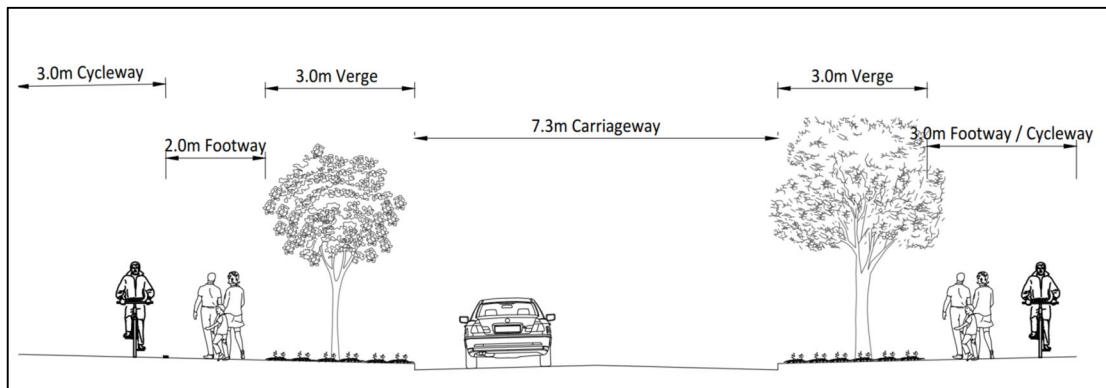
12.8.5. The precise configuration and treatment of the internal street network will need to respond to the changing character areas and urban forms that will prevail within differing areas of LGV. For example, the particular components of the streets that route through and alongside the District Centre will exhibit differing characteristics and treatments, particularly in respect of the accompanying pedestrian and cycle infrastructure and associated measures to manage vehicular speeds. Accordingly, it is important to note that the detailed design considerations for each of the difference character areas are matters that will be established through subsequent Design Code and Reserved Matters process as and when each parcel of LGV is brought forward.

Primary Streets

12.8.6. 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 as shown on Movement Parameter Plan which are attached within **Appendix A**.

12.8.7. The Primary Streets through the development will consist of a 7.3m carriageway flanked with verges which can accommodate street trees as depicted at **Figure 12.5** below. The carriageway width fully accords with the requirements of Wokingham Borough Council'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 Loddon Garden Village.

Figure 12.5 : Primary Street - Typical Cross Section



- 12.8.8. Signal controlled junctions are proposed at the locations to the north and south of the District Centre where the Primary Street network diverges to provide onward routes into the south-eastern and north-eastern areas of Loddon Garden Village. As well as enabling a high standard of pedestrian crossing facilities, the use of signal junctions enables the signal timings to be positively managed to ensure buses are afforded priority as they route through Loddon Garden Village.
- 12.8.9. The Primary Street through the development will be subject to a 30mph speed limit. The section that forms the bridge crossing over the M4 motorway has however been designed into accordance with a 40mph speed limit in recognition that it will form a transition to the Lower Early Way corridor which is currently subject to a 50mph speed limit.

Secondary Streets

- 12.8.10. The Primary Streets will connect to a network of secondary and tertiary streets, establishing a clear and legible hierarchy that supports convenient and efficient movement for all modes of travel.
- 12.8.11. Secondary Streets will then provide access to development parcels from the Primary Streets and will also accommodate some through traffic. Such routes will be provided with a carriageway width of at least 5.5m with 2m footways at either side.
- 12.8.12. Access points where the Secondary Streets join the Primary Street corridor from the adjacent residential parcels have been designed as priority junctions. The designs are sufficiently sized to cater for large vehicles such as refuse vehicles to turn to and from the secondary streets in a safe and satisfactory manner. The junction designs also allow for the cycleway to be set back at so that the active travel route is afforded priority over vehicles travelling along the secondary streets.

Tertiary Streets

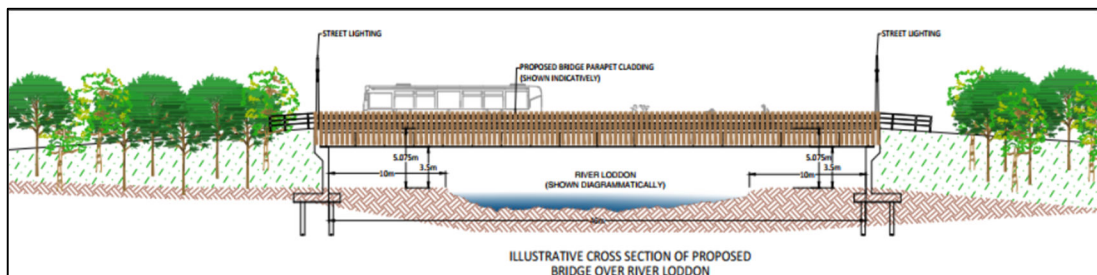
- 12.8.13. Tertiary Streets will connect into development parcels from the Primary and Secondary Streets but are not intended to function as through routes. They will typically comprise a minimum 5m carriageway with 2m footways on both sides.
- 12.8.14. Shared Surface Streets and Private Drives will also be provided within development parcels, designed to allow pedestrians and vehicles to share space due to the low traffic volumes and vehicle speeds expected. Shared Surface Streets will generally be at least 4.8m wide with 2m planted or paved margins on each side where development is proposed. Private Drives will typically be at least 4.1m wide.

12.9. River Loddon Road Bridge

- 12.9.1. The River Loddon routes north / south through the site. Accordingly, a new road bridge crossing carrying the primary street is proposed which will provide a connection between the residential parcels to the east and the western employment uses within Thames Valley Science Park.

- 12.9.2. The Primary Street which crosses the Loddon will include segregated footway and cycleway provision on one side of the carriageway as depicted on Drawing No. A392-OPA-0121/B attached within **Appendix K**.
- 12.9.3. As can be seen from the typical section depicted on **Figure 12.6** below, as well as providing a high quality footway / cycleway connection over the river, the bridge design is sufficiently offset from banks and at an adequate height to allow active travel movements alongside the eastern and western banks of the river.

Figure 12.6: River Loddon Bridge Crossing

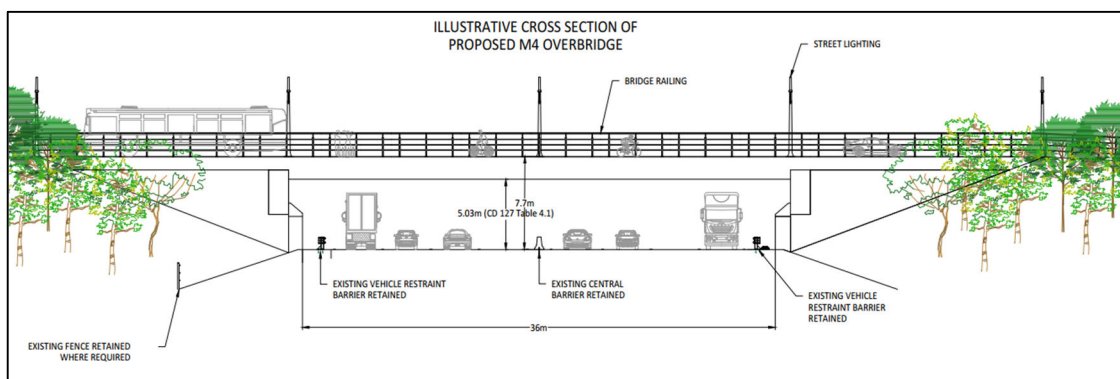


- 12.9.4. The design of the bridge and associated approaches has been established at a proposed ground level that is cognisant of the Loddon floodplain and will therefore deliver a usable route for all modes of travel all year round, even in periods of heavy and prolonged rainfall.
- 12.9.5. Delivery of the crossing is being programmed to be delivered at a relatively early stage in the build-out and occupation of LVGV, primarily in recognition of the key benefits that will be accrued which include:
- To provide an additional vehicular access linking to the new road connection westwards through Thames Valley Science Park and northwards towards the new M4 Motorway bridge crossing.
 - To provide a direct pedestrian and cycle connection to the same destinations:
 - To enable public transport services to route into LVGV from the Thames Valley Science Park and Lower Earley Way.

12.10. M4 Motorway Overbridge

- 12.10.1. A further key highway element is the proposed overbridge of the M4 motorway. This link will connect into the B3270 Lower Earley Way corridor at the Meldreth Way roundabout. An indicative cross section is depicted on **Figure 12.7** below whereas details of the design are depicted on Drawing No. A392-OPA-0120/B which is attached within **Appendix K**.

Figure 12.7: M4 Motorway Bridge Crossing





12.10.2. The carriageway over the bridge has been designed as a 7.3m width plus 2 x 1.0m hardstrips. Of note is that the design also incorporates additional carriageway width along the approaches to the roundabout junctions to the north and south to facilitate the future provision of bus priority lane along these sections. In addition to the single carriageway, the bridge will also provide a segregated route for pedestrians and cyclists, facilitating movement between the LGV and destinations to the north of the motorway.

12.10.3. The horizontal and vertical design of the approach roads to the bridge have been designed to reflect the proposed 40mph design speed. Again, 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.

12.10.4. The M4 Motorway crossing and connection to the Lower Earley Way corridor is programmed to be delivered soon after the route between LGV and Thames Valley Science Park is established, i.e. well within the first half of the build out of LVGV.

12.11. Car Parking

12.11.1. Loddon Garden Village will incorporate a range of parking areas serving both the new homes and non-residential uses. The development will incorporate adequate, safe and secure parking for vehicles and bicycles in a discreet and sensitive manner to achieve the following aims:

- Minimise the visual impact of parked cars on the streetscene.
- Provide residents and visitors alike with safe and convenient access to their vehicles.
- Ensure that the parked cars do not obstruct pedestrians and cyclists.
- Facilitate electric vehicle charging points at parking for all land uses and at mobility hubs.
- Provide high quality secure and sheltered parking for cycles throughout.

Residential Car Parking

12.11.2. The location of car parking can have a significant impact on the streetscape of a place. At Loddon Garden Village a careful balance will be achieved between providing safe and convenient parking, close to the dwellings they are intended to serve, alongside reducing the dominance of parked cars.

12.11.3. The approach to car parking is to avoid uniform solutions and instead incorporate parked cars in a number of different ways. This will help to disperse parked cars throughout the development and avoid monotony. The different parking types are likely to include:

- On-curtilage in the form of private driveways, garages and carports.
- Car parking courtyards to the side and rear of dwellings.
- On-street parking, primarily for visitors.
- Multi Storey car parking solutions for residential areas within District Centre.

12.11.4. When determining the precise level and type of parking at the detailed design stage, consideration will be given to the housing types proposed. A design led approach will be adopted which seeks to provide parking that is well integrated and compliments, rather than dominates, the street scene.



- 12.11.5. The objective is to provide an adequate level of parking and, importantly, to ensure that the spaces that are designed for parking are used for parking, and that places where parking will cause problems are not going to be used for that purpose. This approach will help to prevent the problems such as cars parked indiscriminately which obstruct pavements and restrict access along a street.
- 12.11.6. Most car owners like to be able to see their vehicles and / or to know that they are securely parked. On plot parking satisfies this strong desire. Acceptance of this means that a significant element of the parking will be provided within the curtilage of dwellings through the use of on-plot spaces.
- 12.11.7. For the purposes of preparing the Illustrative Masterplan, Wokingham Borough Council's current adopted parking standards have been applied which typically result in the following allocated provision for new dwellings:
- 1 bedroom dwelling : 1 space per dwelling
 - 2 bedroom dwelling : 1 to 2 spaces per dwelling
 - 3 bedroom dwelling : 2 spaces per dwelling
 - 4+ bedroom dwelling : 2 to 3 spaces per dwelling
- 12.11.8. Unallocated and visitor parking will also be provided, predominantly through the use of on-street parking bays and within well designed parking courtyards. Again, care will be taken to ensure that the on-street parking areas are designed so that they do not impinge on the operation of the street or footways.
- 12.11.9. It is important to note however that when considering parking requirements at future reserved matters stage, the provision should recognise LVGV's specific context, benefitting from good access to leisure, employment, and public transport facilities by sustainable modes. This contrasts with more rural areas of the Borough, where higher levels of car dependency are inevitable due to limited walking and cycling opportunities.
- 12.11.10. Parking provision at LVGV will therefore require a balanced approach: avoiding over-provision, which could encourage unnecessary car use, while also preventing under-provision, which risks inappropriate parking and associated safety or convenience issues for pedestrians and cyclists. Such considerations will be factored into the Design Code for LVGV which will assist in setting out how Wokingham Borough Council's parking standards should be interpreted and applied for LVGV.

Non-Residential Car Parking

- 12.11.11. Given the large number of non-residential uses proposed at Loddon Garden Village, the design of the car parking that serves these uses will be a key element in defining the character of the development. Again, Wokingham Borough Council's car parking requirements should be adhered to, taking the following design principles into consideration:
- Larger car parking areas, such as that serving the Leisure and Education areas, will be broken up by careful landscape design. This is likely to include trees, other planting and varied porous surface materials to avoid an expansive, monotonous surface.
 - Parking areas will be adequately lit in order to reduce opportunities for crime. The level of lighting however, should not be detrimental to the amenity of occupiers of nearby dwellings or to light-shy wildlife.
 - Pedestrian movement across the parking areas will not be determined or restricted by vehicular movement requirements. Direct footways will connect with nearby buildings.
 - All the parking areas serving the non-residential uses will include an appropriate number of accessible 'blue badge' parking bays located close to the building the parking area serves.

12.11.12. Wherever appropriate, and particularly with the District Centre area, opportunities to deliver shared parking solutions for a range of co-located uses will be exploited. Such an approach can lead to significant reductions in the overall parking demand by realising efficiencies due to different land uses having different parking needs at different times. The reduced demand translates to more efficient use of land which frees up space to provide high quality landscaping and public open space are part of the public realm.

12.12. Electric Vehicle Charging Provision

12.12.1. Under the Building Regulations 2010 (as amended), the provision of electric vehicle (EV) charging infrastructure is required for both residential and non-residential developments in England. These requirements are set out in Approved Document S: Infrastructure for the Charging of Electric Vehicles (2021 edition), which came into effect on 15 June 2022.

12.12.2. In accordance with Requirement S1: All new dwellings with associated parking must be equipped with at least one EV charge point per dwelling. The charge point must have a minimum rated output of 7 kW and comply with smart functionality requirements as defined by the regulations.

12.12.3. In accordance with Requirement S2: For new non-residential buildings with more than 10 parking spaces, at least one charge point must be installed, and cable routes must be provided for at least 20% of the total number of spaces.

12.12.4. The approach taken at LVGV will be to provide EV charging that exceeds the Building Regulation requirements and also surpasses Wokingham Borough Council's adopted standards which are applied to typical developments across the Borough.



12.12.5. In this respect, as in the case for vehicular parking, the Design Code being prepared for LVGV which will assist in setting out how standard EV Parking requirements should be exceeded at the throughout the proposed development. Securing this requirement within the Design Code will then inform future reserved matters planning applications as the development is implemented.

12.13. Delivery and Servicing Strategy

12.13.1. The planning application includes, in detail, several sections of the primary road through LGV. As the primary street networks forms new highway links between various existing points on the highway network, the streets have been designed to a standard that is capable of accommodating large vehicles and general traffic in a satisfactory manner.

12.13.2. The designs of the secondary and tertiary road network will be subject to reserved matters planning applications. This process will ensure that the streets are carefully designed to accommodate refuse, delivery and servicing vehicles, which will need to manoeuvre within the various parcels of development.



- 12.13.3. Mindful that the District Centre area will contain a mix of non residential uses, any reserved matters planning application for this area will be supported by a Delivery and Servicing Plan (DSP). This will ensure that vehicles servicing such facilities operate at times which are acceptable and in a manner that is conducive to maintaining residential amenity. The DSP will also demonstrate that appropriate servicing areas are provided and will include measures to ensure that delivery and servicing vehicles use appropriate routes to, from and within LVGV, minimising impacts on sensitive areas and maintaining safe and efficient operation of the highway network.



13.0 Off-Site Highways Proposals

13.1. Introduction

- 13.1.1. This section sets out the off-site highway proposals that will be promoted alongside the LVGV development in order to help accommodate and address the vehicular trip demand that will be generated by the proposals.
- 13.1.2. As a strategic new settlement, LVGV has been planned to minimise reliance on additional off-site highway infrastructure, with an emphasis on active travel and public transport for external journeys. Indeed, a monitor and manage approach will be undertaken throughout the buildout of the development with sustainable travel measures prioritised in order to assist active travel and public transport measures to bed in early and avoid over delivery of highway improvements that could otherwise induce additional car trips. Such an approach will also help to define optimum timescales for delivery as well as ensuring improvements are delivered in a proportionate manner that ensure the surrounding highway network continues to operate effectively.

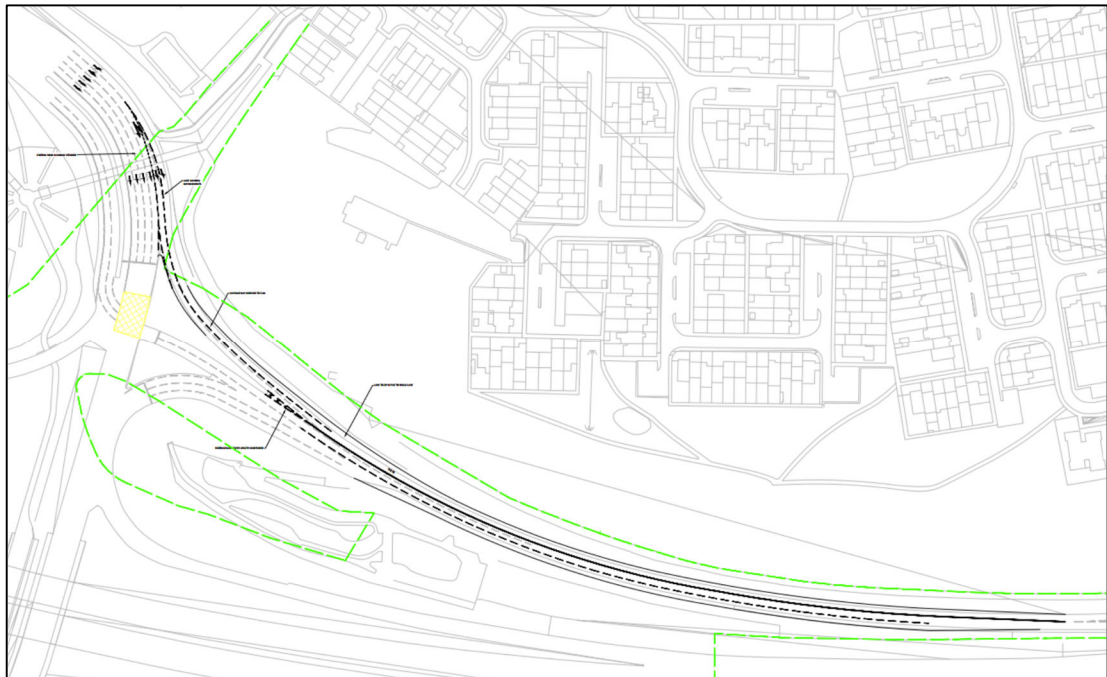
13.2. Background

- 13.2.1. As with the internal layout of the LVGV allocation, work was undertaken by WBC for the Reg.18 and Reg.19 stages of the Local Plan process which involved modelling of the proposed allocation site using the council's own strategic and microsimulation models.
- 13.2.2. These models were used to test the impact that the development would have on the highway network, accounting for the dispersal of development traffic on the various accesses and also the effects of how background traffic elsewhere on the network may seek to reroute through LVGV which has some beneficial effects on adjacent corridors.
- 13.2.3. Based on this earlier work, the suite of off-site highway improvement schemes that were included within the draft Local Plan have been carried over to this assessment. Of note however is that some schemes have been subject to additional refinement in comparison to the versions presented by WBC previously.
- 13.2.4. Details of these schemes, which support delivery of the whole of LVGV, are presented below. Notably, an Infrastructure Delivery Plan (IDP) for LVGV is being prepared which establishes how mechanisms for implementation of each of the mitigation measures.

13.3. M4 Junction 11

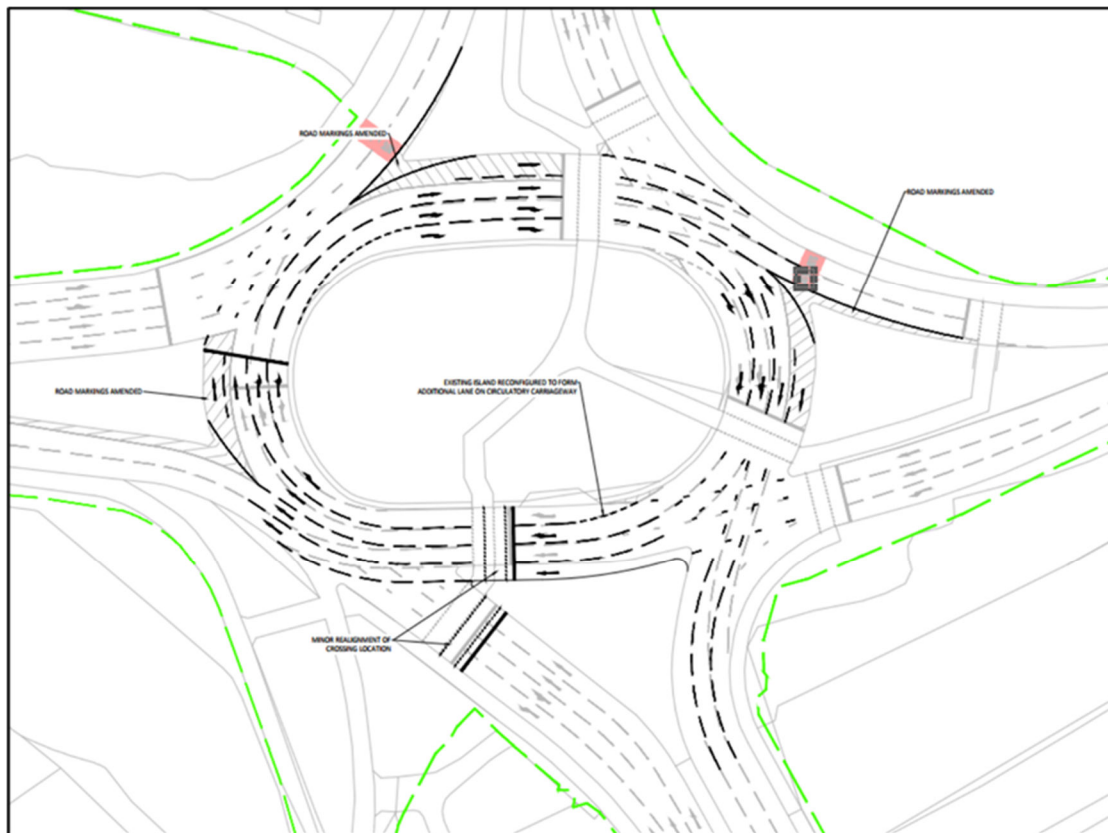
- 13.3.1. This improvement scheme is shown indicatively on Drawing No. A392-1044/P1 attached within **Appendix L** and also **Figure 13.1** below.

Figure 13.1: M4 Junction 11 Concept Improvement Scheme



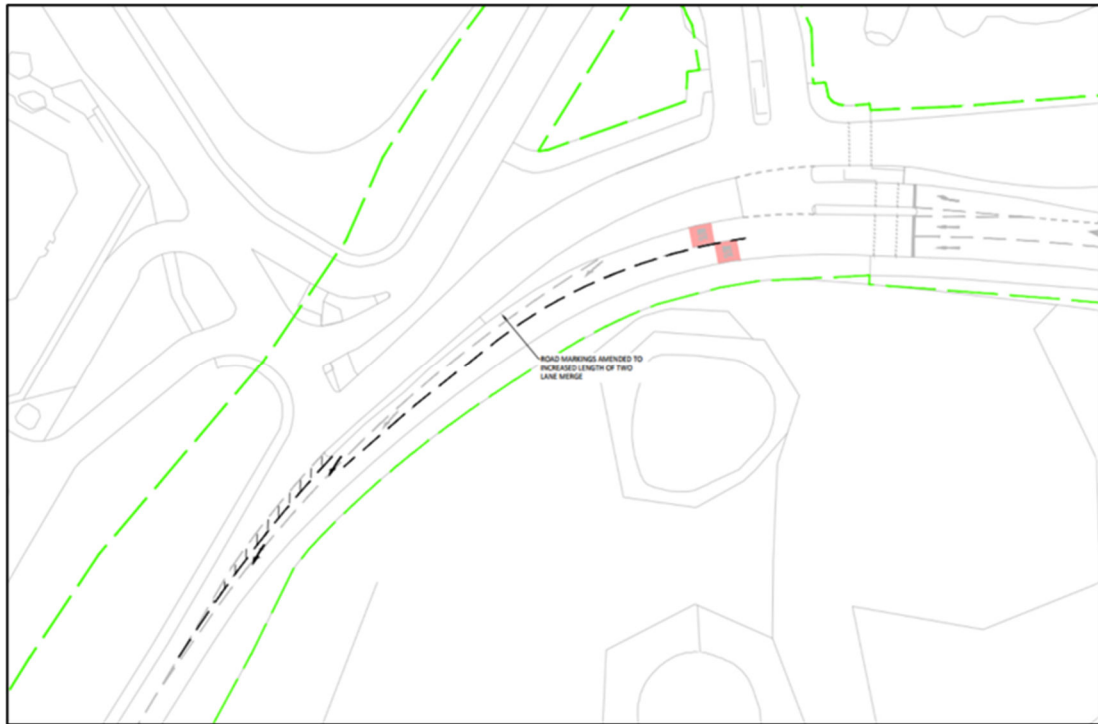
- 13.3.2. The proposals provide additional capacity along the westbound approach to M4 junction 11 to help address forecast issues where queues back into the single lane which reduces efficiency of lane usage and also created blocking back issues.
- 13.3.3. It is also proposed to provide an additional eastbound exit lane onto the B3270 from the gyratory. This helps to deliver more efficient lane use further upstream within the junction and notably allows revised lane markings along the M4 eastbound off-slip which helps to balance queuing along the approach and therefore reduce blocking back onto the M4 mainline.
- 13.3.4. The above works would also include optimisation of signal timings at M4 Junction 11 to respond to the changing pattern in flows and to maximise gains that will accrue from the highway works.
- 13.4. Shinfield Gyratory**
- 13.4.1. This improvement scheme is shown indicatively on **Drawing A392-1040/P1** attached within **Appendix L** and also on **Figure 13.2** and **Figure 13.3** below.
- 13.4.2. The scheme includes reverting hatched areas to running lanes, creating four lanes on parts of the circulatory carriageway where three currently exist. Physical works will be required on the southern section of the gyratory to accommodate the additional circulatory lane in this area.

Figure 13.2: Shinfield Gyratory Concept Improvement Scheme



- 13.4.3. Also of note is that the proposed improvements along the Shinfield Eastern Relief Road corridor include the creation of additional carriageway to cater for another right turn lane for traffic turning northbound onto the University Bridge which forms the southern approach to the Shinfield Gyratory. This creates additional capacity at the signal junction immediately to the south of the M4 motorway which in turn helps to reduce blocking back occurring along the motorway bridge.
- 13.4.4. Further benefits are also accrued by alleviating the downstream bottleneck on the B3270 to west of gyratory, where two lanes currently merge into one over a short distance. This causes queues extending back towards the gyratory, interfering with its operation. Relocating the merge point further west on the B3270 is anticipated to reduce this issue and improve overall traffic flow conditions through the junctions.

Figure 13.3: B3270 Westbound Concept Improvement Scheme



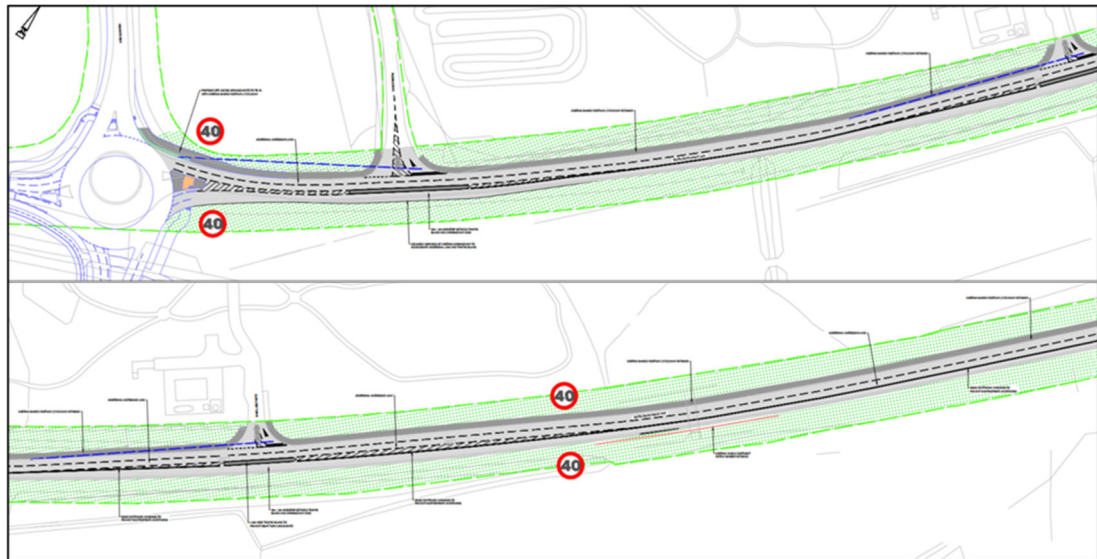
13.4.5. Benefits are also accrued by alleviating the downstream bottleneck on the B3270 to west of gyratory, where two lanes currently merge into one over a short distance. This causes queues extending back towards the gyratory, interfering with its operation. Relocating the merge point further west on the B3270 is anticipated to reduce this issue and improve overall traffic flow conditions through the junctions.

13.5. Lower Earley Way (Meldreth Way Roundabout to Rushey Way Roundabout)

13.5.1. Currently, Lower Earley Way operates as a single lane in each direction between Meldreth Way and Rushey Way. To accommodate the future year traffic flows, it is proposed to provide two eastbound lanes between these junctions, with the westbound remaining single-lane. Of note is that the widening works would be formed by utilising adopted highway land to the south of the corridor. The works would therefore not require use of the highway land to the north.

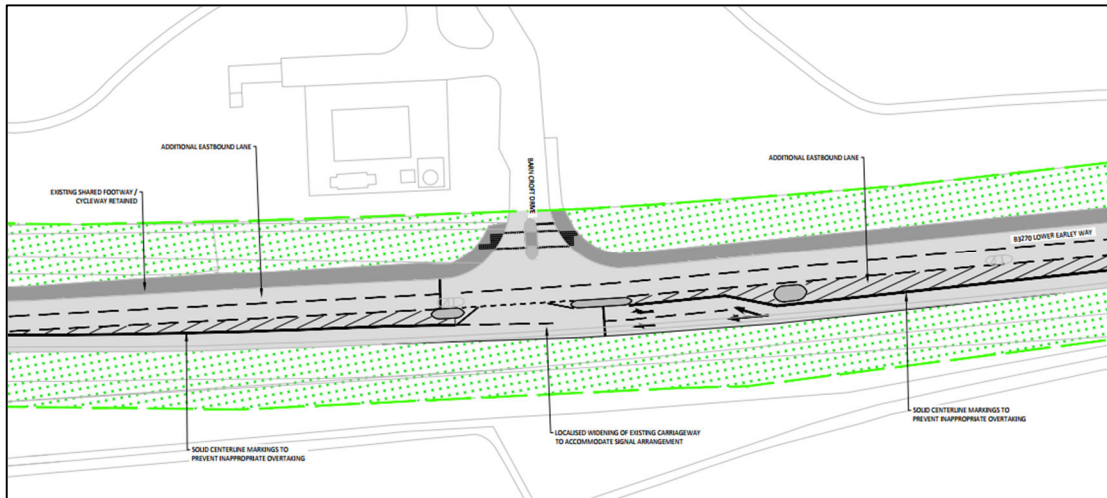
13.5.2. This proposed mitigation scheme is shown indicatively on Drawing No. A392-1034/P1 (**Appendix L**) and **Figure 13.4** below.

Figure 13.4 : Lower Earley Way Concept Improvement Scheme



- 13.5.3. Because of the forecast increase in traffic, and the potential safety implications of crossing two busy lanes of traffic, within its Reg.18 and Reg.19 Local Plan Updates, WBC allowed for the junctions of Paddick Drive and Barn Croft Drive to be reconfigured from the current all movement junctions to become left-in left-out only.
- 13.5.4. For consistency with the previous Local Plan work, the traffic modelling that has informed this Transport Assessment has been based on this proposed arrangement. However, it is considered that there is scope for alternative arrangements which can be delivered along this section that would provide the additional eastbound capacity along the corridor but without restricting turning movements to and from Paddick Drive and Barn Croft Drive.
- 13.5.5. For example, the proposed mitigation scheme could be adapted so that a wide central island is provide along Lower Earley Way at the Paddick Drive and Barn Croft Drive points of access. This would facilitate the right turning movements from Lower Earley Way as well as providing a safe central refuge area so that right turning vehicles emerging from the accesses can undertake the manoeuvre in two stages. Alternatively, if deemed to be desirable, the proposed improvement works along the Lower Earley Way corridor could incorporate signal control at the Paddick Drive and Barn Croft Drive points of access.
- 13.5.6. **Figure 13.5** below demonstrates how signal control could be introduced at the two access appoints. Importantly, as before, the widening works can be undertaken within highway land to the south of the corridor without requiring new carriageway construction on highway land to the north.

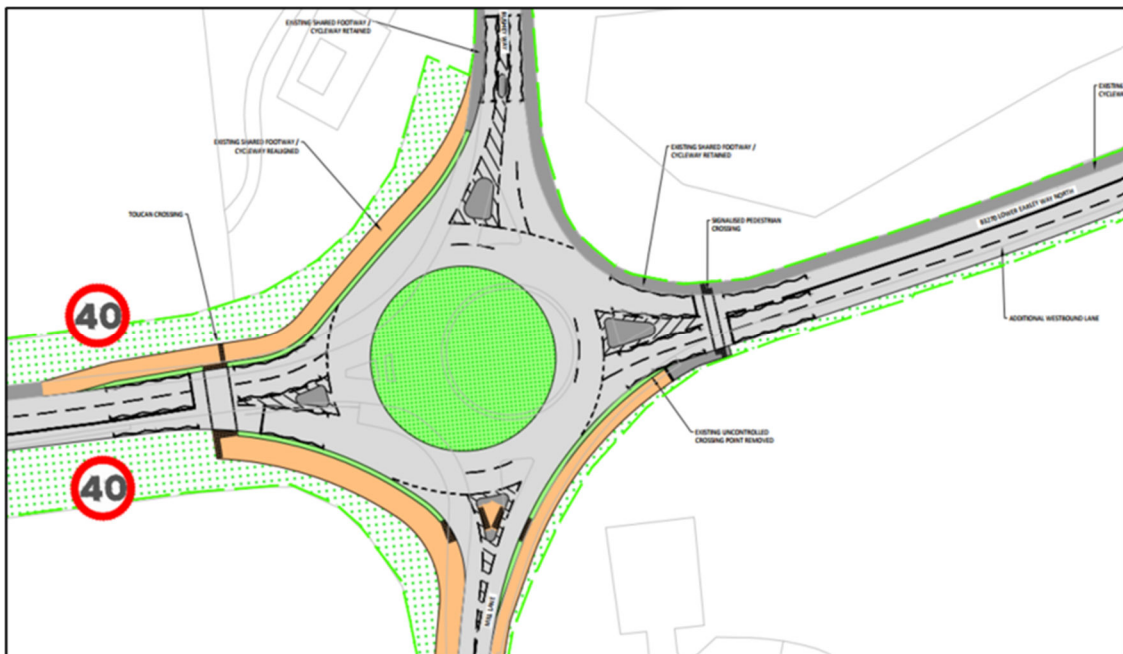
Figure 13.5 : Potential Alternative Treatment of Northern Accesses (Signal Control)



13.6. Lower Earley Way / Rushey Way / Mill Lane Roundabout

13.6.1. This scheme is shown indicatively on Drawing No. A392-1034/P1 (**Appendix L**) and on **Figure 13.6** below.

Figure 13.6: Lower Earley Way / Rushey Way Roundabout Concept Improvement Scheme



13.6.2. In recognition that traffic volumes along the Lower Earley Way corridor will increase, improvements are proposed to provide additional capacity at the Rushey Way / Mill Lane roundabout while also enhancing facilities for active travel.

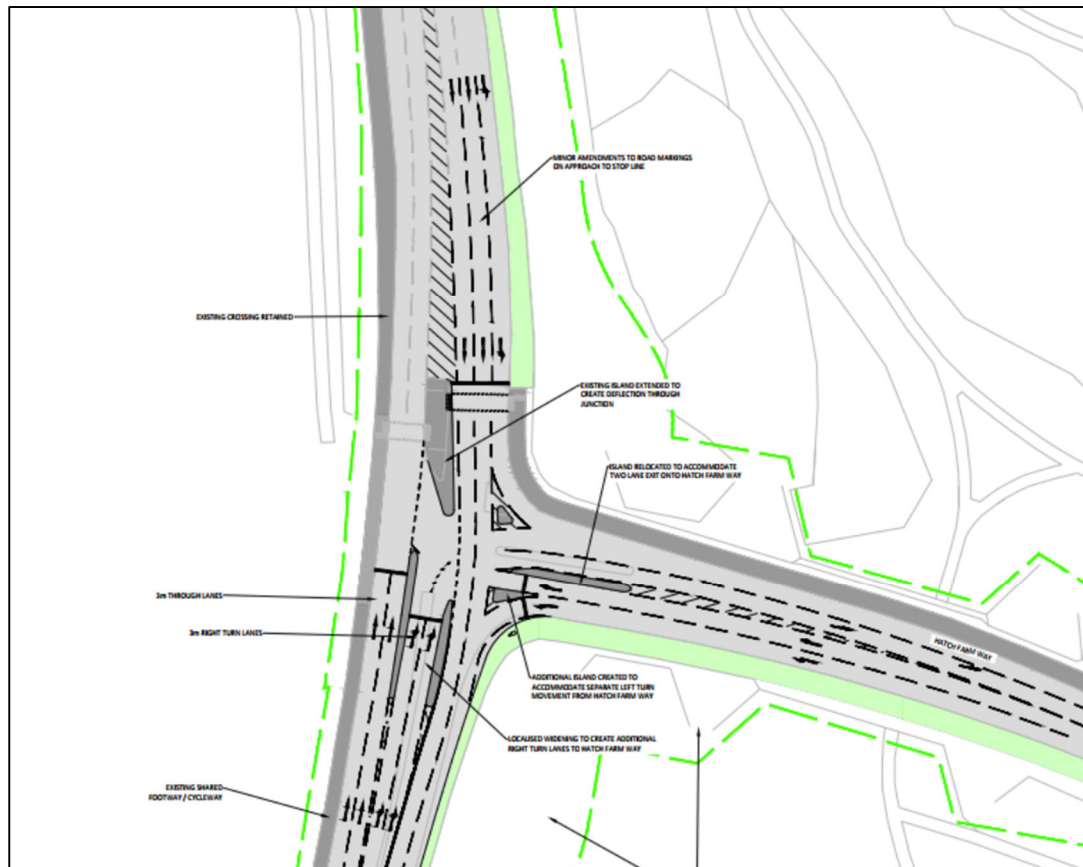
13.6.3. The roundabout will be enlarged, with two-lane approaches provided on both Lower Earley Way arms, extending back to the adjacent junctions. Vehicular use of the Mill Lane arm will reduce significantly given that the through traffic is to be prevented along the corridor (see below).

13.6.4. A Toucan crossing on the western arm of Lower Earley Way will facilitate access to Rushey Way, and a further crossing on the eastern arm will connect to the shared path towards Winnersh and Winnersh Triangle.

13.7. Lower Earley Way / Hatch Farm Way Junction

13.7.1. This junction improvement scheme is shown indicatively on Drawing No. A392-1038/P2 (**Appendix L**) and in **Figure 13.7** below.

Figure 13.7 : Lower Earley Way / Hatch Farm Way Concept Improvement Scheme



13.7.2. Key amongst the proposed alterations to the junction is the provision of two turning lanes from the Lower Earley Way southern arm to Hatch Farm Way. The latter will be provided with two exit lanes which will taper to the existing single lane on Hatch Farm Way. The Hatch Farm Way approach is also being enhanced which will facilitate a slightly different phasing / staging arrangement for the signal timings that allows the left and right turning vehicles from Hatch Farm run to operate in separate signal phases which allows more efficient use of green times at the signal junction.

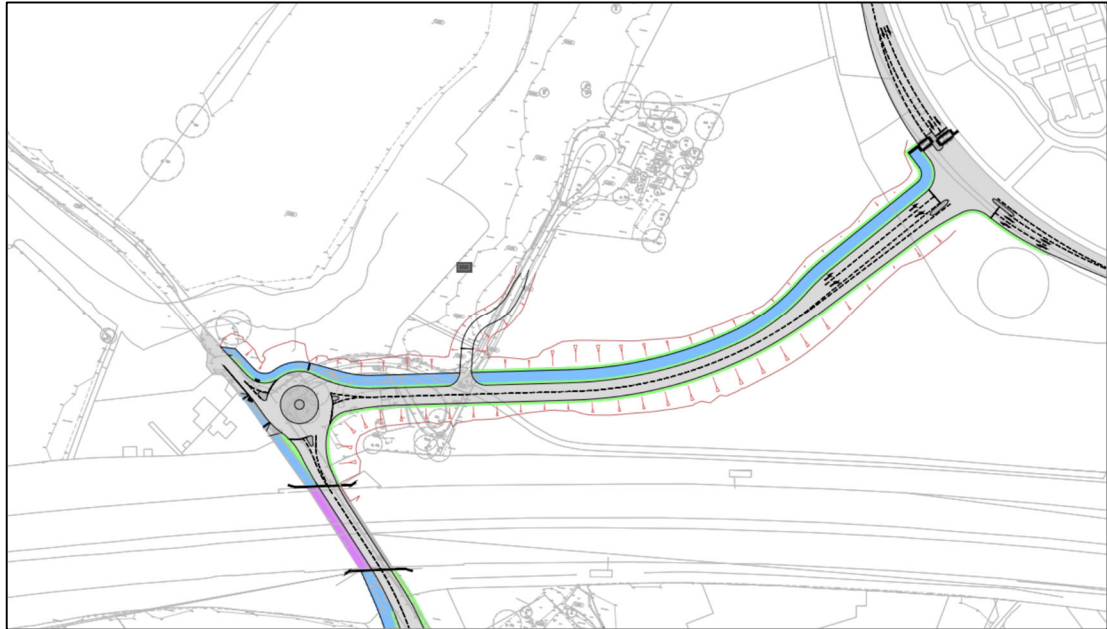
13.7.3. The proposal also allows for an additional southbound lane along Lower Earley Way immediately to the south of the junction. This will eliminate downstream bottlenecks which would otherwise be caused due to the road currently tapering immediately from two lanes down to one.

13.7.4. Moreover, it is proposed to continue the additional southbound lane further to the south so that the two lane provision continues all the way to the approach to the Rushey Way roundabout. Of note is that the additional lane is achieved at the river bridge structure to the south by using part of the verge on the eastern side to achieve the carriageway widening as depicted on Drawing No. A392-1039/P1 (**Appendix L**).

13.8. Hatch Farm Way Link

13.8.1. This improvement scheme is shown indicatively on Drawing No. A392-079/P5 (**Appendix L**) and on **Figure 13.8** below.

Figure 13.8: Hatch Farm Way Link Concept Scheme



- 13.8.2. This scheme forms an extension of the access strategy for LVGV, particularly for the Hatch Farm Land parcel in the north-eastern area of the allocation site. A new single carriageway road link will be created between Mill Lane and Hatch Farm Way which will provide a new routing for traffic to access the recently constructed relief road. The Hatch Farm Link will also benefit from a shared pedestrian/cycle path to assist with journeys between LVGV and destinations including Winnersh Triangle and the associated railway station.
- 13.8.3. The link will form a new roundabout junction with Mill Lane which will be widened to the south as part of the associated access roundabout works for LVGV. The new link road would then connect to the Hatch Farm Way corridor in the form of a signal junction.
- 13.8.4. The provision of the new link road will allow traffic to be conveyed more directly between LVGV and Hatch Farm Way's junction with Lower Earley Way, limiting the magnitude of impact at Hatch Farm Way's junction with King Street Lane.
- 13.8.5. Importantly, the implementation of this new link road will also facilitate the closure of the northern section of Mill Lane to through vehicular traffic, permitting access only. This will result in a significant reduction in traffic utilising the link and enable it to be promoted as an enhanced active travel route for walk and cycle trips.

13.9. Summary

- 13.9.1. The package of off-site highway improvements identified has been developed to complement the internal access strategy for LVGV. Together, these schemes provide targeted capacity enhancements at key locations to address known network constraints and improve conditions for active travel.
- 13.9.2. The proposals build upon work previously undertaken by WBC through the Local Plan process and are being promoted so that development at LVGV and other planned growth can be accommodated in a satisfactory manner.



13.9.3. Notably, the Infrastructure Delivery Plan (IDP) which is being prepared for LVGV includes commitments for the delivery of the aforementioned schemes, including establishing mechanisms for the timely implementation of each of the mitigation works.



14.0 Traffic Modelling Methodology

14.1. Introduction

- 14.1.1. This section describes the broad methodology which has been used in assessing the impact of the proposals on the local highway network using WBC's Wokingham Strategic Traffic Model (WSTM).
- 14.1.2. The methodology for these assessments has been deemed acceptable by WBC, and is set out in more detail in the modelling briefing note included in **Appendix M**.

14.2. Wokingham Strategic Traffic Model

- 14.2.1. The WSTM is a strategic model built in PTV VISUM which is maintained by WSP on behalf of WBC. It is principally used to forecast the transport impacts of development and infrastructure proposals, including housing allocations, employment growth, and major infrastructure interventions.
- 14.2.2. The model is capable of capturing key behavioural responses to congestion and policy measures, including changes in trip frequency, mode choice, routeing, and destination choice. This renders it a robust tool for assessing how proposed developments will interact with existing and future travel patterns, and for identifying where mitigation may be required.
- 14.2.3. The WSTM includes a standard set of trip rates stipulated by WBC which have historically been used in forecasting vehicular demand from development being added to the model. These rates have been applied to development in all parts of the borough, whether it be a rural area, or one better connected by active travel and public transport, such as those to the east of Reading.
- 14.2.4. The standard trip rates have been used in WBC's modelling to date to support the Local Plan update. During discussions on the preparation of this Transport Assessment however, WBC requested that the established rates not be used, and instead that a more bespoke set of trip generation analysis is used.
- 14.2.5. Accordingly, the vehicular trip generation characteristics for LGV that have been used within the WSTM reflect the vehicular trip generation that arises from the methodology set out in **Section 6.0** of this Transport Assessment. Importantly, to ensure a robust assessment, no account is taken of the potential reduced vehicular use that has been identified within the Sensitivity Scenario tests that are presented in **Section 10.0** of this Transport Assessment.

14.3. Modelled Scenarios

- 14.3.1. Whilst a number of different scenarios were undertaken within the WSTM model, the analysis provided within this Transport Assessment is based on the following model runs:
- Run A : 2040 'Forecast Base'. This scenario includes committed development in Wokingham, other Local Plan development and allowance for growth in neighbouring authorities up to the end of the Local Plan period.
 - Run C : 2040 'With Full Development' (Abley Letchford Parameters). This scenario uses Run A as the basis but with the addition of the vehicular trips arising from LVGV at full occupation as well as the on-site and off-site highway mitigation measures that will accompany LVGV.
 - Run D: 2032 'Forecast Base'. This scenario includes committed development in Wokingham, other Local Plan development, and allowance for growth in neighbouring authorities up to the interim year of 2032.
 - Run E: 2032 'With Development' (Abley Letchford Parameters). This scenario builds on Run D, but with an interim level of occupation across LVGV and interim package of highway mitigation. Notably, this run does not include the proposed M4 bridge crossing and connection into Lower Earley Way at the Meldreth roundabout.

- 14.3.2. For the avoidance of doubt, the trip generation associated with LVGV has been treated on a cumulative basis (i.e. traffic arising from all development parcels is accounted for, not just those included within the UoR planning application).

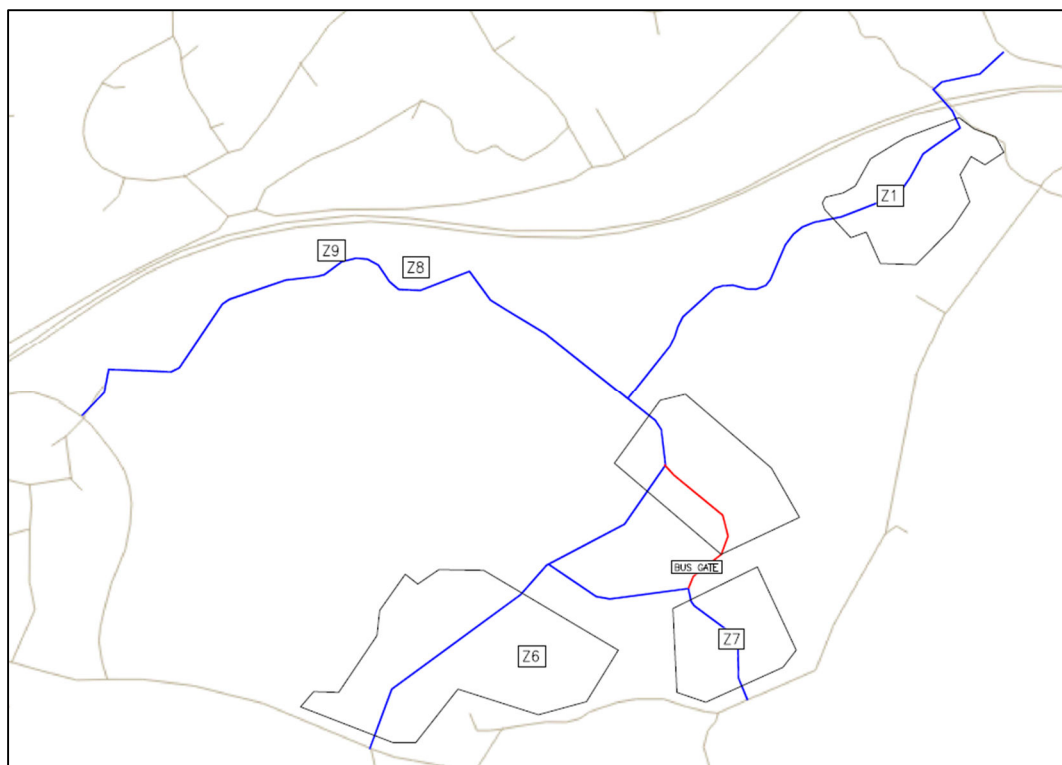
14.4. Modelling Methodology

- 14.4.1. As set out within the Technical Note included at **Appendix M**, Abley Letchford has provided various parameters to WBC and WSP in order to ensure that the modelling is a representative of the proposed LVGV development. Following feedback from WBC, some of these parameters were adjusted from original values specified by Abley Letchford.
- 14.4.2. Abley Letchford has reviewed the model outputs provided by WBC/WSP insofar as the data allows. Responsibility for the accuracy of model construction and operation rests with WBC and WSP, and results have been used on the basis that the model has been applied correctly.

Model Network

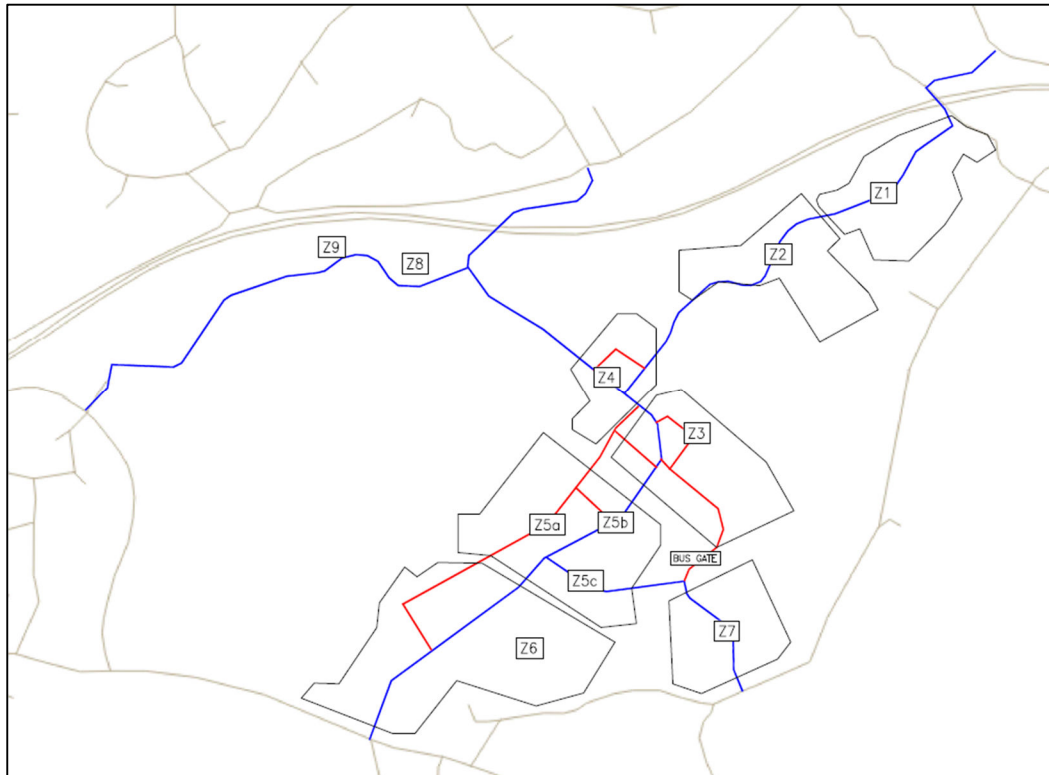
- 14.4.3. The WSTM model has been updated to reflect the configuration of the road network within LVGV for the 2032 and 2040 forecast years. This is set out in **Appendix M**, and comprises the LVGV accesses and key internal roads, as well as the off-site mitigation measures in the interim and end-state scenarios. Notably, the package of off-site highway improvements that has been tested are in line with the improvements previously included in the Regulation 19 stage Local Plan modelling exercise, albeit some of the concept designs have been advanced since that time.
- 14.4.4. When compared with the Regulation 19 stage modelling, the LVGV network now incorporates more detail, including key secondary roads and a greater number of development zones. This allows for a more refined representation of routing for both development and background traffic.
- 14.4.5. **Figure 14.1** shows the 2032 LVGV network. At this point, much of the primary street network is modelled, connecting the UoR development parcels with other areas of LVGV, including a connection over the River Loddon linking through to Thames Valley Science Park.

Figure 14.1: LVGV Modelled Road Network and Zones – 2032 Scenario



14.4.6. **Figure 14.2** shows the modelled road network at full occupation. As well as the incorporation of further development zones to reflect the full build out of LVGV at 2040, of particular note is that the proposed link over the M4 to Lower Earley Way is included as well as an expanded network of internal streets.

Figure 14.2: LVGV Modelled Road Network and Zones - 2040 Scenario



Modelled Vehicle Trips

14.4.7. The modelled vehicle trips used to reflect the vehicular trip generation of LVGV are derived using the methodology set out in **Section 6.0** of this Transport Assessment. The vehicle trips have been apportioned onto a series of model zones to better reflect the disposition and nature of the land uses being promoted. Full details of how the trips have been apportioned to each of the model zones is provided within the Modelling Instruction Technical Note attached as **Appendix M**.

Vehicle Trip Distribution

14.4.8. For consistency, vehicle trips associated with LVGV have been distributed using the same methodology as used by WBC within the Regulation 19 stage modelling exercise.

14.5. Model Outputs

14.5.1. A comprehensive set of outputs have been obtained from the WSTM model to inform the assessment which is undertaken within subsequent sections of this Transport Assessment. This includes link flows, junction turning flows and delay plots as well as select link analysis to identify traffic routings for trips arising from various areas within LVGV.

14.5.2. The key outputs relating to peak hour link flows, turning movements for the 2032 'Forecast Base' and 'With Development' scenarios are attached within **Appendix N**. The respective outputs for the 2040 'Forecast Base' and 'With Development' scenarios are attached as **Appendix O**.



15.0 Local Highway Network – 2040 Year Assessment

15.1. Introduction

15.1.1. This section presents a forecast impact of the vehicle trips generated by LVGV at key junctions on the local highway network when the development is fully occupied.

15.1.2. When undertaking capacity appraisals, junctions have been broadly classified as follows.

- **Internal Junctions.** These comprise the key junctions along the Primary Street network within LVGV.
- **LGV Access Junctions.** These are the access junctions which predominantly cater for the UoR development parcels at LGV; i.e. the northern access onto Meldreth Way roundabout, the southern access onto Observer Way roundabout and the western access onto the Shinfield Eastern Relief Road.
- **Other LVGV Access Junctions.** This category comprises the two other points of access for the LVGV site; namely the south eastern junction onto Mole Road and the north-Eastern junction onto Mill Lane.
- **Junctions along Immediate Highway Network.** This tranche represents junctions along highway corridors which form the periphery of the LVGV allocation site.
- **Junctions Further Afield.** Consideration has been given to the performance of other junctions in instances where the WSTM model outputs indicate that the level of performance would deteriorate to a significant degree as a result of the LVGV proposals.

15.1.3. The highway impact along the Strategic Road Network is considered separately within **Section 16.0** of this Transport Assessment.

15.2. Assessment Software

Priority and Roundabout Junctions

15.2.1. These junction types have been assessed using the industry standard Junctions 11 software. The Demand Data Type option was set to One Hour which concentrates demand within a smaller proportion of the peak hour period, rather than applying a flat profile across the hour. The results therefore represent a more robust assessment of junction capacity than other demand profile types.

15.2.2. When examining the outputs from the Junctions software, it can be interpreted that a junction is approaching capacity and will begin to display characteristics indicating that discernible delays being to occur when the Ratio of Flow to Capacity (RFC) of one or more of the arms exceeds 0.85.

15.2.3. In instances where a junction is predicted to operate over capacity (i.e. RFC values above 1.0), the resultant queue forecasts should be treated with some caution. The junction software models are based on empirical relationships and regression equations derived from observed conditions, and their validity is strongest within operating within the range of normal operating capacity.

15.2.4. Once the model is extrapolated beyond an RFC of 1.0, queue lengths and delays can increase exponentially, and the software's predictive accuracy diminishes. In these circumstances, small changes in input flows or assumptions can produce disproportionately large variations in the reported queues and delays, which may not reflect real-world driver behaviour, adaptive responses, or network redistribution. Therefore, whilst RFC values greater than 1.0 are a strong indicator that a junction is over theoretical capacity, the absolute numerical values of delay and queue length reported should be viewed as indicative of stress rather than precise forecasts.



- 15.2.5. The results of the detailed capacity assessments undertaken for priority and roundabout junctions using the Junctions11 software are included within **Appendix P**.

Signal Controlled Junctions

- 15.2.6. Assessments of signal controlled junctions have been conducted using the industry standard LinSig software. The LinSig modelling process offers estimations of queue lengths, the Degree of Saturation (DoS) and the Practical Reserve Capacity (PRC) of the junction. The DoS is a percentage derived from the demand to capacity ratio on each approach to the junction. A value of 100% signifies that demand and capacity are balanced, and not additional traffic can pass through the junction. The typical design capacity of a junction corresponds to a DoS of 90%.

- 15.2.7. The results of the detailed capacity assessments undertaken for signal controlled junctions using the LinSig software are included within **Appendix Q**.

WSTM Results

- 15.2.8. For junctions where a detailed standalone junction assessment has not been considered necessary, outputs provided from WSTM have been used. These outputs identify the highest Volume to Capacity (V/C) ratio recorded on any individual movement at each junction.

- 15.2.9. The V/C parameter works in broadly the same way as RFCs, in that junctions that have one or more turning movements with a V/C between 0.85 and 1.0 indicates that the junction is operating in a manner that is approaching capacity. Junction with a V/C over 1.0 indicates that that one or more of the turning movements are operating in excess of capacity.

15.3. Internal Junctions

- 15.3.1. It is evident from the WSTM outputs that the traffic flows at the principal junctions within the LVGV development can be accommodated satisfactorily.
- 15.3.2. A review of the WSTM outputs indicates that in all locations, the internal junctions would operate with a V/C value below 0.85 for the 2040 AM and PM peak hour scenarios. This is reinforced by other WSTM outputs which show that queuing delays along the approaches during peak periods would typically be less than 30 seconds.

15.4. LGV Access Junctions

A327 Arborfield Road / A327 Observer Way / LGV Access Roundabout

- 15.4.1. The proposed arrangement at this location which includes modification of this existing roundabout to provide access to the proposed development is shown in Drawing No. A392-OPA-0101/D (**Appendix H**). This arrangement has been assessed for the 2040 'With Development' scenario which allows for full occupation at LVGV. The results are summarised in **Table 15.1** below.

Table 15.1: Arborfield Rd / Observer Way Access Roundabout – 2040 'With Development'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	RFC	Queue	RFC
Arborfield Road (W)	2	0.65	5	0.82
LGV Access	1	0.46	1	0.35
Arborfield Road (E)	1	0.32	1	0.35
Observer Way	6	0.85	3	0.72

Source: Junctions 11 Output

- 15.4.2. The results of the assessment show that the junction is forecast to operate within capacity in both peak hours. The forecast levels of queuing are not significant, demonstrating that the proposed access roundabout can satisfactorily accommodate the traffic flows arising from LVGV.



Lower Earley Way / Meldreth Way / LGV Access Roundabout

- 15.4.3. The proposals at this location which comprise modification of this existing roundabout to facilitate access into the proposed development is shown in Drawing No. A392-OPA-0109/C (**Appendix H**). This arrangement has been assessed for the 2040 'With Development' scenario which allows for full occupation at LVGV. The results are summarised in **Table 15.2** below.

Table 15.2: Lower Earley Way / Meldreth Way Access Roundabout – 2040 'With Development'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	RFC	Queue	RFC
Meldreth Way	1	0.34	1	0.19
Lower Earley Way East	2	0.65	2	0.57
Lower Earley Way West	2	0.55	2	0.65
LGV Access	2	0.53	2	0.67

Source: Junctions 11 Output

- 15.4.4. The results of the assessment show that the proposed access roundabout is forecast to operate within capacity in both peak hours within minimal levels of queuing along all approaches.

Shinfield Eastern Relief Road / TVSP Access Roundabout

- 15.4.5. This junction at the Thames Valley Science Park ultimately forms the western point of access for LVGV. The proposed improvements at this location are depicted on Drawing No. A392-080/P2 (**Appendix H**) while the assessment results are shown in **Table 15.3** below.

Tale 15.3: Shinfield ERR / TVSP Access Roundabout - 2040'With Development'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	RFC	Queue	RFC
South Avenue (TVSP)	1	0.25	2	0.55
Shinfield Eastern Relief Road (S)	3	0.70	3	0.72
Hawthorn	1	0.23	1	0.25
Shinfield Eastern Relief Road (N)	1	0.46	2	0.59

Source: Junctions 11 Output

- 15.4.6. The results of the assessment show that the proposed improvements to the TVSP access roundabout would enable the junction to operate within capacity with minimal levels of queuing during the AM and PM peak hours.

15.5. Other LVGV Accesses

- 15.5.1. Although not forming part of this application, the capacity of other junctions forming part of the wider LVGV allocation has been assessed to demonstrate the overall resilience of the LVGV access strategy.

Mill Lane / LVGV Access Roundabout

- 15.5.2. The likely configuration of the access roundabout onto Mill Lane that will serve the Hatch Farm parcels in the north eastern area of the LVGV allocation site is shown on Drawing No. A392-079/P5 (**Appendix J**). This arrangement has been assessed for the 2040 'With Development' scenario with the results shown in **Table 15.4** below.



Table 15.4: Mill Lane / LVGV Access Roundabout – 2040 ‘With Development’

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue (PCU)	RFC	Queue (PCU)	RFC
Mill Lane West	1	0.36	1	0.37
Mill Lane East	1	0.45	1	0.45
LVGV Access (Hatch Farm Land)	1	0.33	1	0.27
Office Access	1	0.05	1	0.05

Source: Junctions 11 Output

- 15.5.3. The results of the assessment show that the intended access roundabout for the north-eastern areas of the LVGV is forecast to operate within capacity in both peak hours within minimal levels of queuing along all approaches.

Mole Road / LVGV Ghost Island Access Junction

- 15.5.4. The likely configuration of the ghost island priority junction onto Mole Road that will serve the Hatch Farm parcel in the south eastern area of the LVGV allocation site is shown on Drawing No. ITB17371-GA-010/C (**Appendix J**). This arrangement has been assessed for the 2040 ‘With Development’ flows with the results shown in **Table 15.5**.

Table 15.5: Mole Road / LVGV Access Junction – 2040 ‘With Development’

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	RFC	Queue (PCU)	RFC
LVGV Access (Gleeson Parcel)	1	0.48	1	0.26
Mole Road	1	0.20	1	0.42

Source: Junctions 11 Output

- 15.5.5. The results of the assessment show that the intended access roundabout for the north-eastern areas of the LVGV is forecast to operate within capacity in both peak hours within minimal levels of queuing along all approaches.

15.6. Junctions along Immediate Highway Network

Mill Lane / Hatch Farm Way Link Roundabout

- 15.6.1. As shown on Drawing No. A392-079/P5 (**Appendix L**), this roundabout is located on Mill Lane to the north-west of the LVGV access roundabout and forms part of the proposed new link to Hatch Farm Way. The proposed roundabout retains the connection to Mill Lane (east), albeit flows along this corridor would be minimal in recognition that through traffic is too be restricted along this section of road.
- 15.6.2. The proposed arrangement has been assessed for the 2040 ‘With Development’ scenario and the results are shown in **Table 15.6** below.

Table 15.6: Mill Lane / Hatch Farm Link Roundabout – 2040 ‘With Development’

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	RFC	Queue	RFC
New Hatch Farm Way Link Road	1	0.43	1	0.45
Mill Lane East	2	0.53	1	0.47
Mill Lane West	0	0.04	0	0.04

Source: Junctions 11 Output



- 15.6.3. The results of the assessment show that the proposed roundabout is forecast to operate well within capacity in both peak hours without queuing. This is as anticipated given the absence of any significant opposing movements that would occur at the roundabout as a result of through traffic being restricted along the Mill Lan (west) arm.

Hatch Farm Way Link / Hatch Farm Way Signal Junction

- 15.6.4. This new signal junction is the point at which the new Hatch Farm Way Link Road connects to the existing Hatch Farm Way corridor. The concept layout of the proposals is shown on Drawing No. A392-079/P5 (**Appendix L**). This arrangement has been assessed for the 2040 'With Development' scenario with the results shown in **Table 15.7**.

Table 15.7: Hatch Farm Way Link / Hatch Farm Way Signal Junction - 2040 'With Development'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue (PCU)	DoS	Queue (PCU)	DoS
Hatch Farm Way (North)	9	73.1%	9	75.6%
Hatch Farm Way (South)	15	88.7%	14	86.4%
Link Road	13	89.1%	11	84.0%

Source: LinSig Output

- 15.6.5. The signal junction incorporates pedestrian crossing provision across the Hatch Farm Way corridor. This analysis has been undertaken based on a 70 second cycle time and allowance has been made for the pedestrian crossing signals to be called every signal cycle.
- 15.6.6. As can be seen from the results in **Table 15.7**, whilst there is a degree of queuing predicted, all approaches are forecast to operate within capacity during both the AM and PM peak periods.

Lower Earley Way / Hatch Farm Way Signal Junction

- 15.6.7. When appraising the future operation of this junction, consideration has first been given to how the existing layout would perform in the 2040 'Forecast Base' scenario without any development at LVGV. The results of this assessment for this scenario are presented within **Table 15.8** below.

Table 15.8: Lower Earley Way / Hatch Farm Way Signals 2040 'Forecast Base'

Movement	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	DoS	Queue	DoS
Lower Earley Way SB Ahead Left	17	92.7%	14	85.6%
Lower Earley Way SB Ahead	17	88.5%	15	77.7%
Hatch Farm Way Left	15	92.6%	10	84.9%
Hatch Farm Way Right	10	78.6%	6	57.8%
Lower Earley Way NB Ahead	25	89.1%	26	88.8%
Lower Earley Way NB Ahead Right	16	90.1%	13	85.7%

Source: LinSig Output

- 15.6.8. The signal junction incorporates pedestrian crossing provision across the Hatch Farm Way corridor. This analysis has been undertaken based on a 90 second cycle time which allows for the pedestrian crossing signals to be called every signal cycle.
- 15.6.9. As can be seen, the existing layout of the signal junction is forecast to operate close to capacity in both the AM and PM peak hours when tested with future year flows prior to any development at LVGV.
- 15.6.10. The analysis presented in **Table 15.9** repeats the assessment based on the existing layout; albeit using the 2040 'With Development' flows.

Table 15.9: Lower Earley Way / Hatch Farm Way Signals ‘With Development’ (Existing Layout)

Movement	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	DoS	Queue	DoS
Lower Earley Way SB Ahead Left	23	96.8%	26	95.9%
Lower Earley Way SB Ahead	19	92.6%	17	89.8%
Hatch Farm Way Left	25	103.6%	18	97.7%
Hatch Farm Way Right	12	86.2%	7	63.9%
Lower Earley Way NB Ahead	41	99.4%	39	99.0%
Lower Earley Way NB Ahead Right	26	98.4%	21	96.2%

Source: LinSig Output

15.6.11. As can be seen, in the absence of any mitigation measures, the addition of traffic from LVGV would worsen the operation of the junction. Queuing levels along all approaches would increase and the capacity of the junction would be exceeded.

15.6.12. In order to address this situation, mitigation works are proposed in this location to deliver additional capacity along the Lower Early Way (south) and Hatch Farm Way approaches. The proposed improvements shown on Drawing No. A392-1038/P2 (**Appendix L**) have been assessed using the 2040 ‘With Development’ flows and the results are shown in **Table 15.10** below.

Table 15.10: Lower Earley Way / Hatch Farm Way Signals ‘2040 With Development’ (With Mitigation)

Movement	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	DoS	Queue	DoS
Lower Earley Way SB Ahead Left	23	96.8%	14	88.3%
Lower Earley Way SB Ahead	18	91.6%	14	74.9%
Hatch Farm Way Right Left	27	96.5%	16	86.4%
Lower Earley Way NB Ahead	24	94.3%	12	63.7%
Lower Earley Way NB Ahead Right	7	76.8%	10	88.6%

15.6.13. As is evident from **Table 15.10**, the capacity improvements that are proposed in this location would act to reduce the levels of queuing that would otherwise occur. All approaches to the junction would operate within capacity during both the AM and PM peak hours, with levels of queuing broadly comparable to the situation in the ‘2040 Forecast Base’ scenario.

Lower Earley Way / Mill Lane / Rushey Way Roundabout

15.6.14. When appraising the future operation of this junction, consideration has first been given to how the existing layout would perform in the 2040 ‘Forecast Base’ scenario without any development at LVGV. The results of this assessment for this scenario are presented within **Table 15.11** below.

Table 15.11: Lower Earley Way / Mill Lane / Rushey Way Roundabout – 2040 ‘Forecast Base’

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	RFC	Queue	RFC
Lower Earley Way (E)	19	0.97	10	0.92
Mill Lane	39	1.09	12	0.96
Lower Earley Way (W)	45	1.06	10	0.92
Rushey Way	22	1.01	3	0.74

Source: Junctions 11 Output

15.6.15. It can be seen that the existing layout of the roundabout would operate above capacity in the future year scenario for the AM peak hour, prior to the addition of traffic associated with LVGV.



15.6.16. In order to address this situation, mitigation works are proposed in this location to deliver additional capacity at the roundabout. The proposed improvements shown on Drawing No. A392-1038/P2 (**Appendix L**) have therefore been assessed using the 2040 'With Development' flows and the results are shown in **Table 15.12** below.

Table 15.12: Lower Earley Way / Mill Lane / Rushey Way Roundabout – 2040 'With Development'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	RFC	Queue	RFC
Lower Earley Way (E)	4	0.79	3	0.75
Mill Lane	1	0.07	1	0.06
Lower Earley Way (W)	3	0.75	3	0.74
Rushey Way	12	0.95	2	0.64

Source: Junctions 11 Output

15.6.17. As can be seen, the proposed mitigation works at this junction would deliver significant benefits in performance when compared to the 2040 'Forecast Base' scenario. All approaches are predicted to operate within capacity during both the AM and PM peak hours. Notably, the absence of any significant queuing along the Mill Lane approach is as anticipated given that through traffic along the corridor will be restricted as part of the access strategy for LVGV.

Shinfield Gyratory

15.6.18. Use has been made of a comprehensive LinSig model of the Shinfield Gyratory and adjacent junctions to assess the performance when allowing for LVGV. The network extents included within the LinSig model covers the gyratory itself as well as the associated signal arrangements to the south of the M4 motorway which incorporates connections to the Shinfield Eastern Relief Road, Cutbush Lane and Brooker's Hill.

15.6.19. As was evident from earlier modelling work which informed the Reg.18 and Reg.19 Local Plan stages, the Shinfield Gyratory would operate under stress in the future year scenario, even before traffic associated with LGV is accounted for. In order to address this situation, mitigation works are proposed in this location to deliver additional capacity at the roundabout. The proposed improvements shown on Drawing A392-1040/P1 (**Appendix L**) have therefore been assessed using the 2040 'With Development' flows and the results are shown in **Table 15.13** below.

Table 15.13: Shinfield Gyratory – 2040 'With Development'

	2040 With Development			
	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	DoS	Queue	DoS
Junction of B3270 (W) Entry to Gyratory				
Approach (4 lanes)	11	62%	18	82%
Circulatory (4 lanes)	12	56%	10	53%
Junction of A327 (N) Entry to Gyratory				
Approach (3 lanes)	13	87%	11	78%
Circulatory (4 lanes)	13	36%	4	44%
Junction of B3270 (E) Entry to Gyratory				
Approach (3 lanes)	13	68%	13	76%
Circulatory (4 lanes)	13	62%	7	46%
Junction of M4 Overbridge with Gyratory				



Approach (4 lanes)	42	88%	19	74%
Circulatory (3 lanes)	2	45%	12	45%
Junction of M4 Overbridge with ERR				
S/B on Bridge (4 lanes)	23	83%	31	78%
ERR W/B (4 lanes)	14	69%	14	65%
ERR E/B (3 lanes)	16	63%	11	48%
Cutbush Lane Junction				
Southbound A327 (3 lanes)	13	28%	15	36%
Northbound A327 (2 lanes)	7	41%	2	27%
Cutbush Lane (2 lanes)	1	33%	1	27%
Crossing Stopline	1	36%	1	23%
Brookers Hill Junction				
Southbound A327 (3 lanes)	6	62%	14	60%
Northbound A327 (3 lanes)	10	58%	7	47%
Brookers Hill (3 lanes)	5	41%	4	45%

Source: LinSig Output

15.6.20. As can be seen, with the proposed improvements in place, the series of junctions which comprise the Shinfield Gyratory are forecast to operate within capacity with degrees of saturation below 90% during the morning and evening peak hours which LVGV is fully operational.

A327 Arborfield Road / Shinfield Eastern Relief Road Roundabout

15.6.21. The operation of the existing layout of this roundabout has been tested for both the 2040 'Forecast Base' and the 2040 'With Development' scenarios. The results are presented within **Table 15.14** and **Table 15.15** respectively.

Table 15.14: Arborfield Road / Shinfield ERR Roundabout - 2040 'Forecast Base'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	RFC	Queue	RFC
Shinfield Eastern Relief Road	1	0.37	1	0.50
A327 (E)	2	0.62	2	0.59
A327 (W)	1	0.41	1	0.24

Source: Junctions 11 Output



Table 15.15: Arborfield Road / Shinfield ERR Roundabout - 2040 'With Development'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue (PCU)	RFC	Queue (PCU)	RFC
Shinfield Eastern Relief Road	2	0.51	3	0.68
A327 (E)	4	0.77	3	0.70
A327 (W)	2	0.56	1	0.47

Source: Junctions 11 Output

15.6.22. As is evident from the above Tables, the roundabout is forecast to operate within capacity for the AM and PM peak hours in the 2040 'Forecast Base' scenario. When tested within the addition of LVGV traffic on the highway network, there is a modest reduction in operational performance at this junction, but all approaches are forecast to remain operating within capacity.

Mole Road / Mill Lane / New Road Roundabout (Nirvana Spa Roundabout)

15.6.23. When appraising the future operation of this roundabout (commonly referred to as the Nirvana Spa roundabout), consideration has first been given to how the existing layout would perform in the 2040 'Forecast Base' scenario without any development at LVGV. The results of this assessment for this scenario are presented within **Table 15.16** below.

Table 15.16: Nirvana Spa Roundabout – 2040 'Forecast Base'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	RFC	Queue	RFC
Mole Road (South)	73	1.23	4	0.77
New Road	3	0.74	9	0.92
Mole Road (North)	122	1.30	145	1.39
Mill Lane	4	0.80	4	0.78

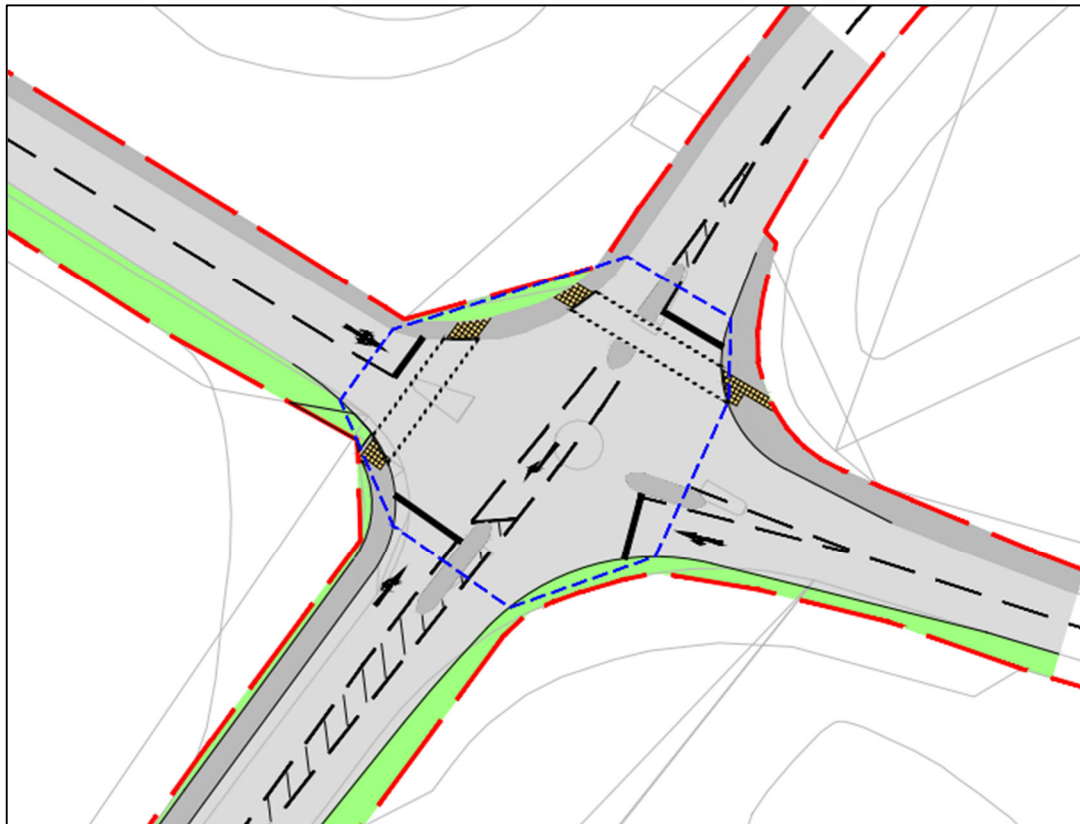
Source: Junctions 11 Output

15.6.24. It can be seen that even in the scenario without LVGV, there are substantial levels of queuing forecast along the Mole Road approaches in both peak hours. Whilst heed should be taken of the earlier advice within this section which advocates caution when interpreting the veracity of results when an arm exceeds an RFC of 1.0, it is evident that the roundabout would be under stress and would require mitigation measures to help accommodate the traffic arising from LVGV.

15.6.25. A potential means of addressing the capacity constraint in this location would be to implement a signal control junction. Of particular note is that the turning movements obtained from the WSTM model indicate that there are minimal right turn movements that occur from the New Road approach, primarily because Bearwood Road offers a more direct route for movements heading north. Similarly, the right turn movement into New Road from Mole Road south is also very small (less than 60 vehicle movements during the peak hour). It is considered that there is scope for these two right turn movements to be prevented which, along with the implementation of signal control, would deliver additional capacity at this location due to the reduced number of conflicting traffic movements.

15.6.26. The proposed junction improvement scheme is shown indicatively on Drawing No. A392-1052/P1 (**Appendix L**) and in **Figure 15.1** below.

Figure 15.1: Proposed Nirvana Spa Signal Junction



15.6.27. As can be seen, the proposals which can be delivered within highway land, also facilitates the provision of signal controlled pedestrian crossings along the western and northern approaches. The pedestrians crossing would be called on demand during an ‘all-red’ pedestrian phase and would therefore assist with improving connectivity within this area of the network which is particularly beneficial given the proximity of Bearwood primary school to the east.

15.6.28. The capacity of the proposed signal junction layout has been tested for the 2040 ‘With development scenario’, with the results summarised in **Table 15.17** below.

Table 15.17 : Proposed Nirvana Spa Signal Junction – 2040 ‘With Development’

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	DoS	Queue	DoS
Mole Road (South)	26	97%	19	93%
New Road	7	45%	7	51%
Mole Road (North)	14	83%	14	92%
Mill Lane	22	96%	16	93%

Source: LinSig Output

15.6.29. As can be seen from the results within **Table 15.17**, the proposed signal junction would operate within capacity for both the AM and PM peak hours in the 2040 With Development scenario which allows for LVGV to be fully operational.



15.6.30. There is some degree of queueing predicted along the approaches, although it is very evident that this is significantly reduced when compared to the 2040 'Forecast Base' scenario'. This demonstrates that the proposed mitigation scheme not only allows the LVGV traffic to be accommodated but also delivers significant betterment in this location.

15.6.31. Notably, whilst the implementation of a signal junction did not form part of the package of measures identified within the Reg.19 Local Plan process, the Infrastructure Delivery Plan (IDP) which is being prepared for LVGV does now include provision for such mitigation works at this junction to be implemented.

15.7. Junctions Further Afield

15.7.1. The WSTM mode outputs have been reviewed to ascertain which areas of the local highway network beyond the junctions assessed in detail above would experience a material change in queueing delay as a result of the LVGV development.

15.7.2. When undertaken the screening exercise, junctions where queueing delays would increase by less than 30 seconds in the 2040 peak hours have been discounted from further analysis on the basis that the inputs would not be significant.

15.7.3. Based on the above, the following junctions have been identified for further review:

- King Street Lane / Hatch Farm Way signal junction
- Hatch Farm Way / Duffet Drive junction
- Wharfdale Road / A3290 signal roundabout
- Shinfield Road / Whitley Wood Road signal junction

15.7.4. The impacts at each of the locations is assessed in turn below:

King Street Lane / Hatch Farm Way Signal Junction

15.7.5. The WSTM outputs indicate that, when allowing for the LVGV development in 2024, queueing delays along the Mole Road northbound approach to the junction would increase by 86 seconds during the AM peak hour.

15.7.6. Based on a review of the turning movements at the junction, coupled with observations undertaken on-site, it is evident that the way the very short left turn filter lane along the southern approach operates does act to exacerbate queueing at the junction. Specifically, there is only storage for one vehicle within the left turn filter lane, which means that situations often arise where the relatively small number of vehicles waiting to turn left block back and prevent straight ahead and right turn movements occurring along the Mole Road (south) approach.

15.7.7. A further observation is that the signal staging of the junction is such that means many of the opposing approaches are held at a red light while the relatively small number of vehicles turning right from the Hatch Farm Way eastern approach undertake the manoeuvre.

15.7.8. Notably, the provision of the new link to Hatch Farm Way does offer alternative routings for the relatively small number of 'problematic' left turn and right turn manoeuvres identified above. If the junction was to be slightly reconfigured to exclude these turning movements then the signal staging would operate much more efficiently which would not only act to mitigate the additional traffic generated by LVGV but also but also deliver betterment when compared to the 2040 'Forecast Base' scenario.

15.7.9. In recognition of the above, the Infrastructure Delivery Plan (IDP) which is being prepared for LVGV includes provision for mitigation works at this junction to enable the aforementioned measures to be implemented.



Hatch Farm Way / Duffet Drive Junction

- 15.7.10. The WSTM model outputs identify that queuing delay for vehicles exiting Duffet Drive onto Hatch Farm Way would include by 66 seconds (AM peak hour) and 75 seconds (PM peak hour) in the 2040 'With Development' scenario.
- 15.7.11. Of note however is that, for the purpose of the WSTM model, the residential areas located to the east of Hatch Farm Way which are currently utilise Rhodes Close, Budd Grove and Duffet Drive for access are all modelled as using a single point of access (Duffet Drive). Accordingly, the actual effect on delay at this location would be less pronounced as egressing traffic would be apportioned across three junctions rather than the one point of access which is represented in the WSTM model.
- 15.7.12. Moreover, the proposed introduction of the new signal junction midway along the Hatch Farm Way corridor will have some platooning effect along the northern and southern sections for the corridor as the signal stages change. This platooning effect will create gaps in the flow along Hatch Farm Way to assist vehicles exiting the three residential areas.
- 15.7.13. In light of the above, it is considered that the actual impact of the proposed LVGV development in terms of queueing delays in these locations would not be significant.

Wharfdale Road / A3290 signal roundabout

- 15.7.14. The WSTM outputs indicate that, when allowing for the LVGV development in 2024, queuing delays along the Wharfdale Road westbound approach to the junction would increase by 31 seconds during the AM peak hour.
- 15.7.15. The operation of the existing layout of this signal roundabout has been tested for both the 2040 'Forecast Base' and the 2040 'With Development' scenarios. The results are presented within **Table 15.18** and **Table 15.19** respectively.

Table 15.18: A3290 / Wharfdale Road Signal Roundabout - 2040 'Forecast Base'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	DoS	Queue	DoS
A3290 (North)	6	42%	7	38%
Wharfdale Road	28	86%	31	85%
A3290 (South)	26	71%	12	79%

Source: LinSig Output

Table 15.19: A3290 / Wharfdale Road Signal Roundabout - 2040 'With Development'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	DoS	Queue	DoS
A3290 (North)	7	44%	7	41%
Wharfdale Road	33	91%	34	88%
A3290 (South)	25	69%	13	83%

Source: LinSig Output

- 15.7.16. As is evident from the above Tables, the signal roundabout is forecast to operate close to capacity for the AM and PM peak hours in the 2040 'Forecast Base' scenario. When tested within the addition of LVGV traffic on the highway network, there is a modest reduction in operational performance at this junction, albeit all approaches are forecast to remain operating within capacity.



15.7.17. Queuing along the Wharfdale approach is forecast to increase in the 'With Development' scenario. However, the detailed analysis, which allows for optimisation of the signal timings to respond to the changes in the balance of traffic flows, means that the impact equates to only 5 additional queuing vehicles along this approach in the AM peak hour which is not considered to be significant.

Shinfield Road / Whitley Wood Road signal junction

15.7.18. The WSTM outputs indicate that, when allowing for the LVGV development in 2024, queuing delays along the Shinfield Road northbound approach to the signal junction would increase by 43 seconds during the AM peak hour.

15.7.19. The operation of the existing layout of this signal junction has been tested for both the 2040 'Forecast Base' and the 2040 'With Development' scenarios. Of note is that the staging arrangement includes an all-red period to accommodate the pedestrian crossings which are called on demand. This is represented within the LinSig model by 'double cycling' the junction which mimics the pedestrian crossing being called every other 90 second cycle.

15.7.20. The results are presented within **Table 15.20** and **Table 15.21** respectively.

Table 15.20: Shinfield Road / Whitley Wood Road Signal Junction - 2040 'Forecast Base'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	DoS	Queue	DoS
Shinfield Road (North)	6	77%	11	84%
Shinfield Road (South)	14	80%	16	86%
Whitley Wood Road	12	80%	5	84%

Source: LinSig Output

Table 15.21 : Shinfield Road / Whitley Wood Road Signal Junction - 2040 'With Development'

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	DoS	Queue	DoS
Shinfield Road (North)	8	75%	12	80%
Shinfield Road (South)	13	77%	15	82%
Whitley Wood Road	16	88%	16	86%

Source: LinSig Output

15.7.21. As is evident from the above Tables, the signal junction is forecast to operate close to capacity for the AM and PM peak hours in the 2040 'Forecast Base' scenario. When tested within the addition of LVGV traffic on the highway network, there is a modest reduction in operational performance at this junction, albeit all approaches are forecast to remain operating within capacity.

15.7.22. Notably, the detailed analysis which allows for optimisation of the signal timings to respond to the changes in the balance of traffic flows indicates that queuing along the Shinfield Road corridor can be maintained at levels similar to the 2040 'Forecast Base' scenario. A consequence of the reallocation of signal timings is that queuing along Whitley Wood Lane would increase, albeit the approach would continue to operate within capacity.

15.8. Summary

15.8.1. The detailed analysis presented within this section of the Transport Assessment builds upon the outputs obtained from the WSTM traffic model. The findings of the analysis can be summarised as follows:

- The new internal junctions within the LVGV allocation site would operate within capacity and with minimal queuing delay during the 2040 AM and PM hours when the development is fully operational.



- Similarly, the proposed access junctions for LGV being promoted within the University of Reading planning application, as well as the other access junctions that form part of the wider access proposals for LVGV, would operate within capacity when tested using the 2040 'With Development' flows. The proposed junction layouts can therefore satisfactorily accommodate the traffic arising from the proposed development when LVGV is fully operational.
- The highway mitigation package that has been identified to accompany the LVGV development enables the junctions along the adjacent highway network to operate in a manner that is comparable to the 2040 'Forecast Base' scenario. Indeed, in some locations, the mitigation proposals deliver a degree of betterment when compared to the 'Forecast Base' scenario.
- The detailed capacity analysis has identified two locations on the highway network where additional mitigation schemes should be implemented in order to address increased congestion that would otherwise occur as a result of traffic arising from LVGV. These are the Nirvana Spa roundabout and the King Street Lane / Hatch Farm Way signal junction. In recognition of this, the Infrastructure Delivery Plan (IDP) which is being prepared for LVGV includes additional provision for mitigation works at these two junctions to enable improvements measures to be implemented.



16.0 Strategic Road Network – 2040 Year Assessment

16.1. Introduction

- 16.1.1. This Section considers the impact of the proposed development on the strategic road network near the site, primarily the M4 mainline and junctions 10 and 11.

16.2. Local Plan Modelling

- 16.2.1. To date, the two rounds of modelling undertaken by WBC for the Reg.18 and Reg.19 Local Plan stages have included strategic modelling in both instances, and microsimulation modelling for Reg.19 stage.
- 16.2.2. The strategic WSTM model has been described in **Section 14.0** above. WBC's VISSIM microsimulation model covers the M4 corridor between junctions 10 and 11, part of the A329M, and the Lower Earley Way corridor.
- 16.2.3. Strategic models such as WSTM are broad-scale planning tools used to forecast how transport demand responds to changes in land use, demographics, and infrastructure over wide areas and extended time horizons. They operate using zonal trip data and average generalised costs, producing outputs such as trip patterns, corridor flows, and mode shares that inform policy testing and appraisal.
- 16.2.4. Microsimulation models are detailed operational tools that simulate the movement of individual vehicles or pedestrians within specific junctions or corridors. They provide outputs on queues, delays, and traffic interactions. Strategic models establish the demand context, while microsimulation models assess whether the local network has the capacity to accommodate that demand.

Mainline Flows

- 16.2.5. Analysis of the WSTM flows of the M4 mainline between junctions 10 and 11 by Stantec on behalf of WBC showed that the forecast changes in traffic volumes were considered to be “immaterial”. This was reinforced by VISSIM modelling which determined that journey times would also be reduced in a scenario which included improvements associated with LVGV when compared to the reference case.

Junction Operation

- 16.2.6. Stantec's VISSIM assessment of M4 Junction 11 found that with the Local Plan growth, which includes LVGV, and associated mitigation in place, the queue length on the eastbound off-slip was in the order of 200m in the AM peak hour, and in the PM peak hour queues on all slips were lower than in the AM peak hour. The assessment states that the overall impact of the Local Plan growth, including LVGV, on the junction is negligible.
- 16.2.7. Similarly, Junction 10 is forecast to operate with free flow conditions and no material changes resulting from the planned Local Plan growth.

National Highways Response

- 16.2.8. In their response to the Reg.19 consultation, National Highways signed a Statement of Common Ground agreeing pertinent matters at that time, including the suitability of WSTM for assessment and no objection to the overall Local Plan strategy and allocations. Moreover, there was no objection to the principle of a new bridge over the M4 motorway that forms part of the LVGV proposals.



16.3. Comparison With Latest Modelling

16.3.1. The WSTM outputs included in WBC's Reg.19 Transport Assessment assist in providing some useful comparisons with the outputs for the refined modelling undertaken in support of this application.

16.3.2. Delay difference plots show the change in delay on links between scenarios with and without the development in place. Similar comparisons have also been undertaken by reviewing the actual flow outputs for the WBC Reg 19 assessment and for the updated modelling which supports this planning application.

M4 Junction 11

16.3.3. A comparison of the delay difference on the J11 off-slips is as follows:

- In the AM peak hour, the Reg.19 modelling identified that with the addition of development, delays on the westbound and eastbound off-slips would increase by fewer than two minutes.
- The refined modelling for the University of Reading planning application concurs with the Reg.19 assessments in that the proposal will increase delay by fewer than two minutes on the eastbound off-slip in the AM peak hour. However, it is now forecast that the increase on the westbound slip will be below one minute.
- In the PM peak hour, the Reg.19 modelling forecast that with the addition of development, there would be an increase to the delay of less than one minute on the eastbound off-slip and that there would be a small reduction in delay on the westbound off-slip.
- The refined modelling offers a similar comparison, with no material increase in delay on the eastbound off-slip, and a minor reduction in delay on the westbound off-slip.

16.3.4. The actual flow difference plots for the Reg.19 have also been reviewed against the latest refined modelling for the scenarios with and without LVGV.

- In the AM peak hour the Reg.19 modelling forecasts a reduction in flow on the off-slip roads of in the order of 60 to 80 vehicles.
- The refined modelling has a larger reduction forecast on the eastbound off-slip and a smaller reduction on the westbound off-slip when compared to the Reg.19 model.
- The PM peak hour Reg.19 outputs forecast an increase in flow on both off-slips, with the number being small enough to not be discernible on the publicly available outputs.
- A small increase is forecast in the latest modelling. As is the case with the AM peak hour, this difference is not considered to be material.

M4 Junction 10

16.3.5. Neither the Reg.19 or the latest refined modelling identify any material changes in delay at M4 Junction 10 associated with the provision of development. There are however some subtle differences in terms of link flow changes between the two sets of modelling.

- The Reg.19 model forecasts a single figure reduction in the AM peak hour in the number of vehicles on the eastbound slip, and an increase of fewer than 40 vehicles on the westbound off-slip.
- By contrast, the latest modelling forecasts an increase of c.30 vehicles on the eastbound off-slip and an increase of just under 100 vehicles on the westbound off-slip.
- In the PM peak hour the Reg.19 modelling forecasts a reduction of between 20 and 40 vehicles on the off-slips.



- The refined modelling forecasts a PM peak hour reduction of c.40 vehicles on the eastbound off-slip and an increase of approximately 30 vehicles on the westbound off-slip.

16.3.6. Whilst there is a difference in Junction 10 slip road flows in the latest modelling compared to the Reg.19 exercise, the lack of material change in the delay confirms that there is no detriment to the junction operation.

16.3.7. In both sets of modelling and both time periods, the changes to the M4 mainline flow are not considerable and therefore lie within what might be expected in terms of typical daily traffic variation for this motorway corridor.

A329(M) Corridor

16.3.8. Whilst not part of the SRN managed by National Highways, the A329M does form a key connection serving Reading, Wokingham, and Bracknell.

16.3.9. In the updated modelling for the AM peak hour, the addition of the development results in a forecast two-way flow increase of fewer than 200 vehicles on the A329M corridor between Winnersh and M4 J10. The WSTM outputs show that this will not result in any change in delay on this section of the road.

16.3.10. In the PM peak hour, the two-way flow increase in the scenario with LVGV is similarly an increase of fewer than 200 vehicles over the hour; again with no associated increase in delay in either direction.

16.3.11. For reference purposes, the Reg.19 modelling forecast a two-way flow increase slightly in excess of 200 vehicles for the AM peak hour. The PM peak hour forecast increase was not dissimilar to the refined modelling in terms of uplift. The Reg.19 modelling also did not identify any increase in delay as a consequence of the Local Plan growth.

16.3.12. The forecast impacts identified previously within the Reg.19 modelling and the updated modelling used to inform this planning application are therefore almost unchanged for the A329M corridor.

A329(M) Slip Road Junctions at Winnersh Triangle

16.3.13. Looking at junctions which interface with the A329(M) slip roads, the refined modelling for the AM peak hour forecasts an increase of fewer than 50 vehicles on the A329(M) westbound off-slip heading to the signal junction with Wharfedale Road. This compares with over 100 vehicles which were identified in the Reg.19 modelling. In each instance, no material increase in delay is forecast.

16.3.14. In the PM peak hour, both sets of modelling show limited to no forecast increase in traffic associated with LVGV utilising the A329M westbound off-slip towards Wharfedale Road. The Reg.19 modelling does forecast some delay impacts which are no longer present within the refined modelling undertaken to support the planning application.

16.3.15. The A3290 and Bader Way form a signal controlled roundabout junction with the A329M eastbound slip roads. The latest modelling forecasts an AM Peak hour decrease of approximately 50 vehicles on the northbound A3290 in the scenario including LVGV, with a limited increase in the southbound movement. There is no material increase in vehicle flows forecast for the on-slip.

16.3.16. In the PM peak hour, flow increases of 45-65 are forecast northbound and southbound on the A3290, and a resulting increase of c.70 vehicles on the on-slip. Again, in general the changes in flows, little to no impact on the forecast changes in delay in either peak hour, are not dissimilar to those forecast in the Reg.19 modelling.



16.4. Summary

16.4.1. The two rounds of strategic modelling undertaken by WBC to inform the Reg.18 and Reg.19 Stages of the Local Plan Update identifies that the proposed level of development being promoted, which includes LVGV, can be accommodated on the Strategic Road Network. Specifically, the work identified that:

- Changes in flows or journey times along the M4 when allowing for the proposed development would not be material.
- Whilst the M4 Junction is forecast to operate close to capacity in the Reference Case scenario, the proposed Local Plan developments would not result in any significant net detriment on the junction performance, as a result of the signal optimisation of the junction and the addition of the extra turn lane onto the B3270 which is being promoted.
- Similarly, the modelling indicates that the M4 Junction 10 would operate within capacity with predominantly free flow conditions when allowing for the Local Plan development.

16.4.2. National Highways' position offers no objection to the principle of LVGV, as set out in its Statement of Common Ground with WBC at Reg.19 stage which confirms that :

- The Wokingham Strategic Transport Model (WSTM) provides a suitable basis for the preparation of evidence and engagement.
- The evidence supporting the Proposed Submission Plan is robust and proportionate to the plan-making stage of planning.
- The strategic implications of proposals in the Proposed Submission Plan have been suitably considered and addressed, and the overall strategy promoted by the Proposed Submission Plan is sound.
- The evidence prepared is at a level of detail expected at this stage in the plan making process and sufficient to have a high degree of certainty regarding the delivery of the plan.
- There is no objection in principle to the overall strategy promoted by the Proposed Submission Plan, including the proposed allocations.
- There is no objection to the principle of a new bridge over the M4, subject to formal assessment and design.

16.4.3. It is recognised that National Highways will need to review the updated modelling that has been undertaken to inform the University of Reading planning application for LVGV. Nonetheless, it is of reassurance that the refined modelling exercise undertaken to inform the planning application indicates that the extents of impacts along the M4 and A329(M) corridors, as well as at the key junctions, is consistent with the assessments undertaken to inform the progression of the Local Plan stages.



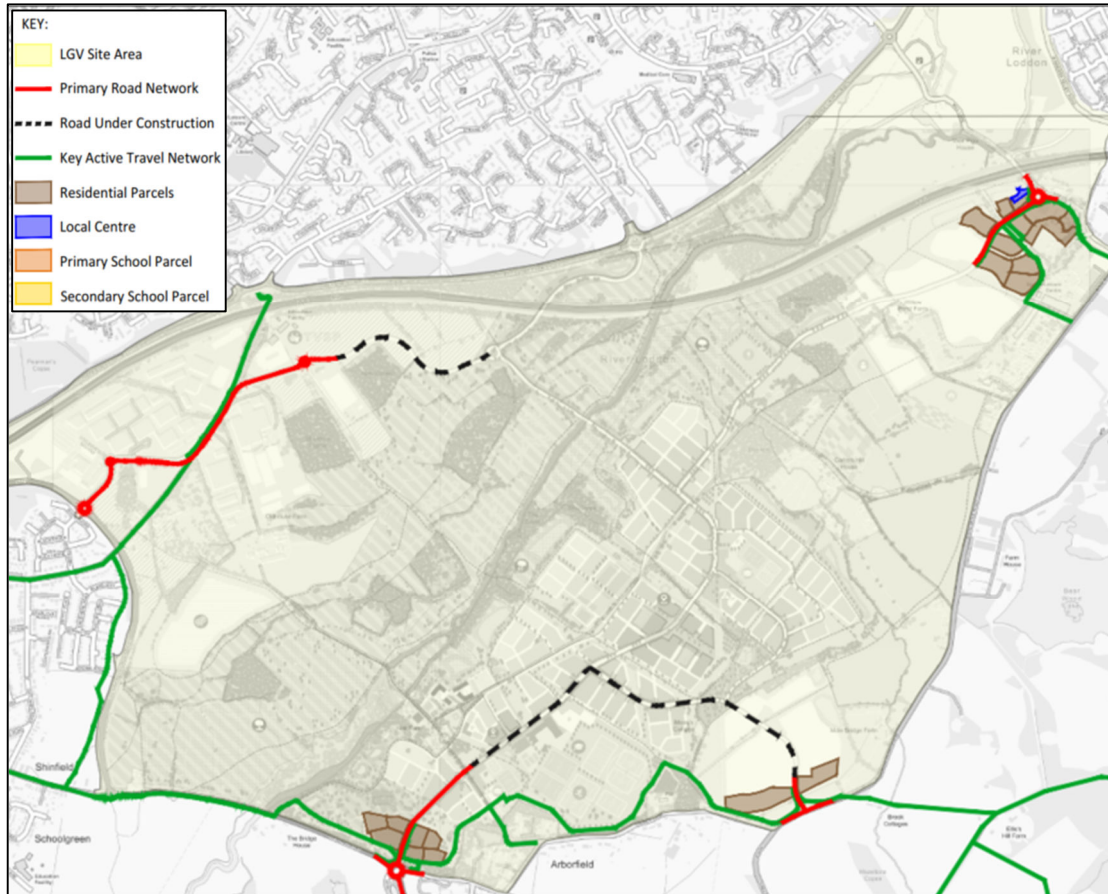
17.0 Phasing of Key Access Infrastructure

17.1. Introduction

- 17.1.1. In terms of phasing, it is anticipated that much of the Primary Street network will be delivered in the early stages of the development. This will ensure that each land parcel with the wider LVGV allocation site benefits from a high degree of connectivity at the earliest opportunity, and that high-quality active travel infrastructure is available from the outset.
- 17.1.2. Given the scale of the LGV proposals and the wider LVGV allocation, development will be delivered and occupied over a number of years.
- 17.1.3. Residential development is anticipated to commence concurrently across the three principal landholdings. As the UoR controls the largest proportion of the allocation site and will deliver the majority of dwellings, it is expected that the Hatch Farm parcels in the north-eastern area and also the Gleeson Lane parcel in the southern-eastern area, will be completed in advance of the later phases of UoR land.
- 17.1.4. Associated access infrastructure will be delivered at appropriate stages of the project, striking a balance between achieving key transport and sustainability objectives while maintaining overall scheme viability. Notwithstanding, the sequencing of the transport and highway related infrastructure has been formulated to ensure that each stage of development is appropriately served and that the internal street networks and off-site highway infrastructure is implemented a manner that ensures unnecessary impacts on the external transport networks are avoided.
- 17.1.5. The timing, funding and delivery of the on-site infrastructure and off-site mitigation are matters that are being secured within an Infrastructure Delivery Plan (IDP) for LVGV, thereby ensuring that implementation of the provision is coordinated and effective across all phases of development.
- 17.1.6. Construction activities are expected to commence in 2027, with first occupations achieved during 2028. The broad sequencing of the key transport and highway infrastructure during the early years of the build out is set out below.

17.1.7. **Figure 17.1** shows the likely build out by 2029/ 2030 illustrating that early completions would be achieved in each of the three discrete areas of LVGV.

Figure 17.1: Infrastructure Sequencing - 2028/2029

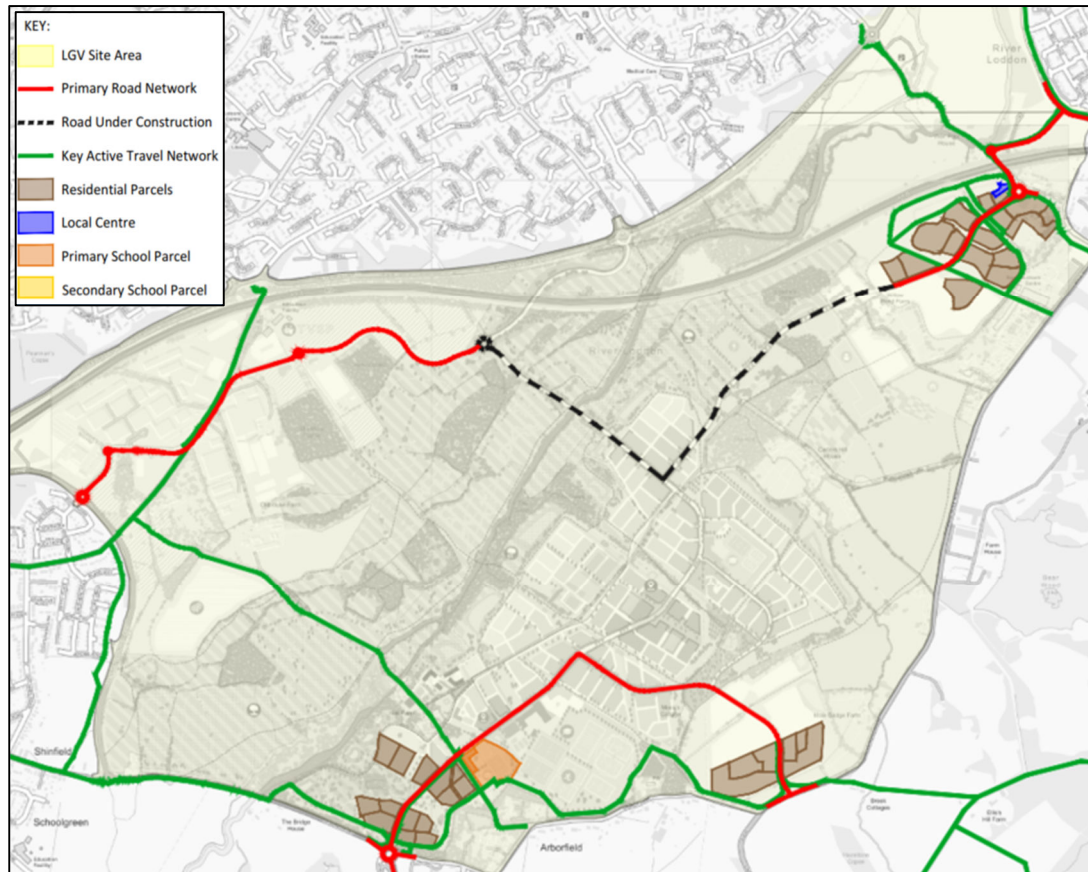


17.1.8. As can be seen, the access junctions for each of the areas will have been constructed by this time, including the initial proportions of Primary Street that serve each of the parcels. Similarly, the initial eastern extension of Spine Road through Thames Valley Science which is currently under construction will have been completed by 2028/2029.

17.1.9. Also of note is that some of the key active travel routes will be formed early within the development program. This includes connections onto the Mole Road and Mill Lane corridors in the north-eastern area, internal linkages within the southern frontage of LVGV connecting to the Greenway routes to the east via Ellis's Hill as well as new footway / cycleway provision along Arborfield Road connecting to Shinfield.

15.1.7. **Figure 17.2** below then shows how the build out would progress to 2029/2030.

Figure 17.2: Infrastructure Sequencing - 2029/2030



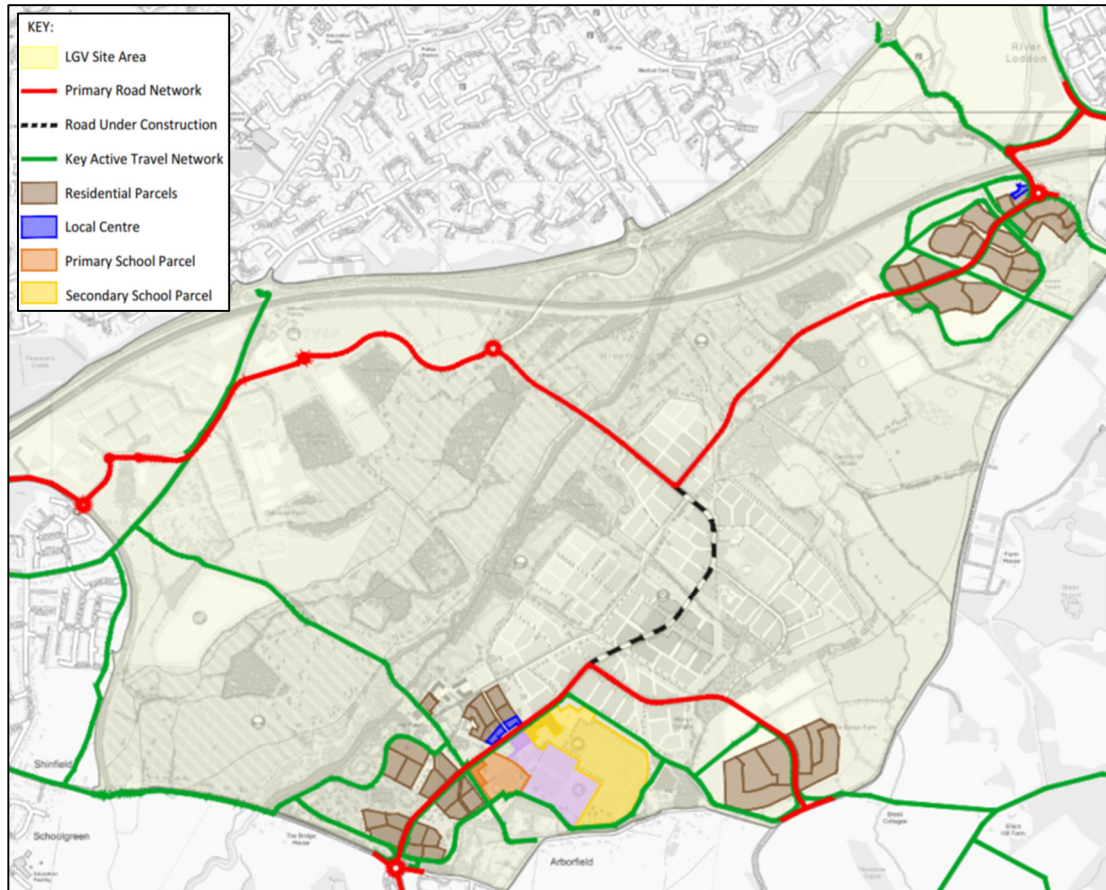
17.1.10. By this time there will be an internal road connection established between the UoR and Gleeson parcels in the southern area of LVGV. This increased connectivity will assist with the early delivery of a new primary school within the southern area of LVGV. The active travel routes will also continue to be expanded within this area and, most notably, will include a connection onto Footpath 4 which will provide an attractive connection across the river Loddon onto the existing footway / cycleway route which connects over the M4 motorway at Cutbush Lane.

17.1.11. This phase would see the completion of the new link to Hatch Farm Way in the north-eastern area of LVGV which would deliver pedestrian and cycle connections northwards along the Hatch Farm Way corridor. Its implementation also enables Mill Lane to be promoted as an additional active travel connection to the north of the motorway given that through traffic will be excluded from this corridor. Moreover, as has been identified in **Section 15.0** of this Transport Assessment, the implementation of the Hatch Farm Way Link also provides opportunity to deliver capacity relief at the Nirvana Spa and King Street Lane junctions which lie to the east, as well as affording scope for new pedestrian crossing provision in this area.

17.1.12. Within Thames Valley Science Park, the western extension of the Spine Road will have been completed in order to cater for further employment uses in this area as well as in readiness for onward connections across the river Loddon

17.1.13. **Figure 17.3** depicts the next stage of build out to 2030/2031.

Figure 17.3: Infrastructure Sequencing - 2030/2031



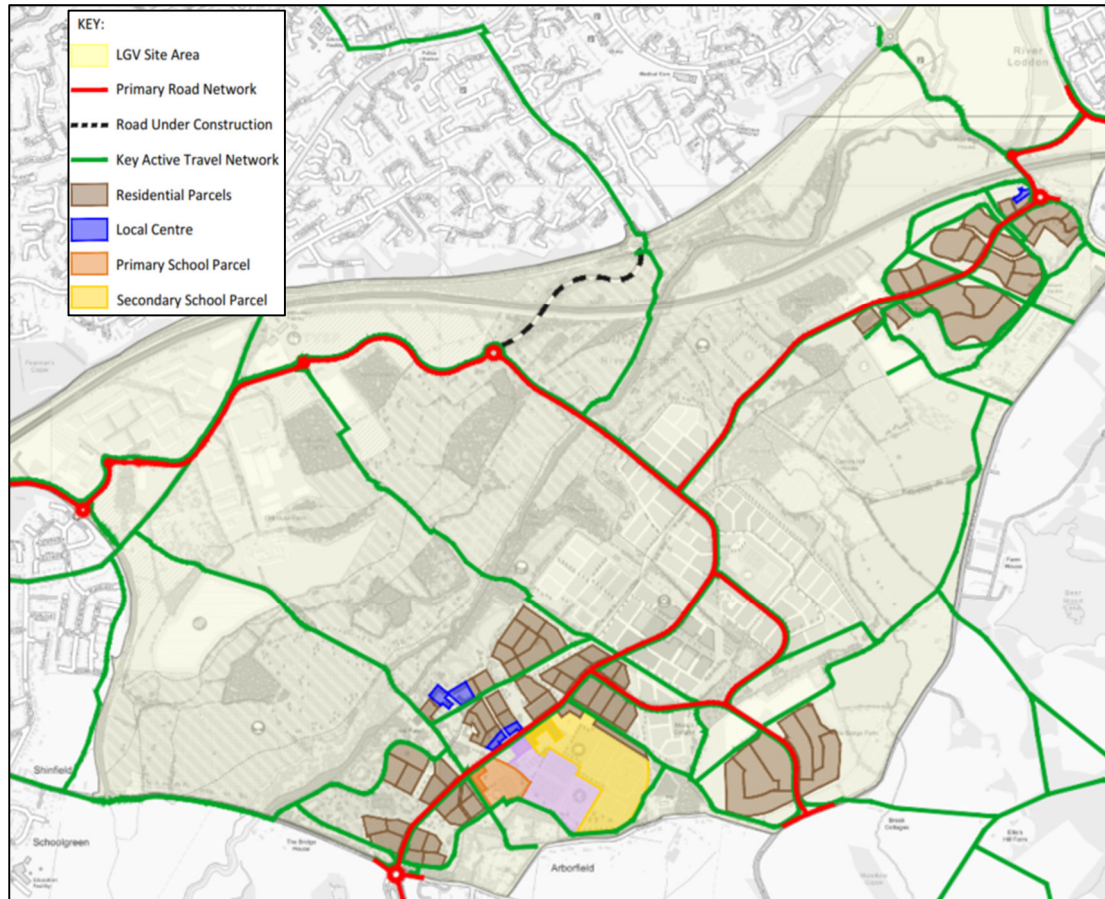
17.1.14. As can be seen, build out will continue within the southern area of LGV and would be able to accommodate further ancillary uses such as the local centre, secondary school, and associated sport pitch / leisure centre provision.

17.1.15. By this point in time, the internal, primary street connection over the river Loddon will be delivered which will provide a through connection to / from development in the north-eastern area of LGV.

17.1.16. It is also anticipated that the off-site highway improvement works at the Thames Valley Science Park access roundabout onto the Shinfield Eastern Relief Road will have been undertaken, including the provision of the carriageway widening along the Shinfield Eastern Relief Road corridor to the north.

17.1.17. **Figure 17.4** then shows how the build out would progress to 2031/2032.

Figure 17.4: Infrastructure Sequencing - 2031/2032



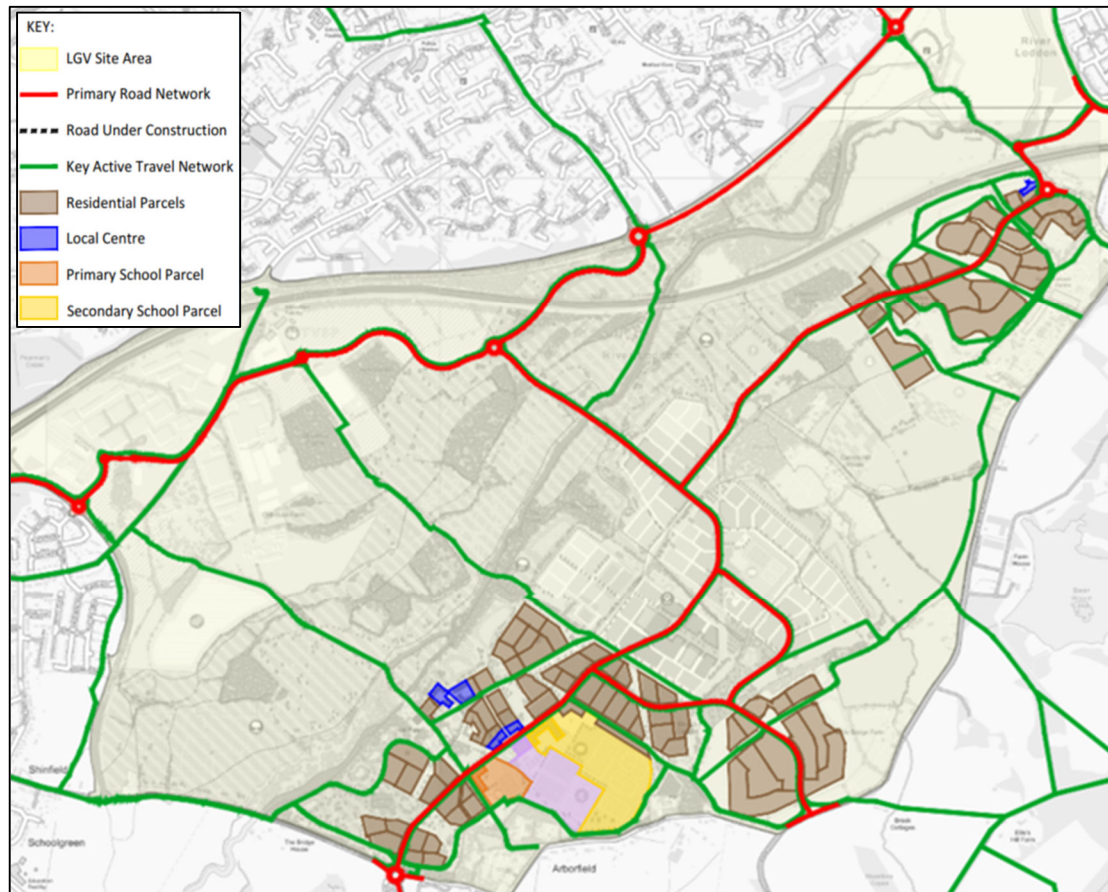
17.1.18. By 2031 / 2032, the active travel connections within and alongside the north-eastern development parcel at Hatch Farm and the south-eastern parcel being promoted by Gleeson Land will have been completed. This includes a further connection into the eastern Greenway network along Gravelpithill Lane as well as a northern walking / cycling route running parallel to the Mole Road corridor.

17.1.19. The further progression of the development parcels towards the central area of LVGV also offers the opportunity to provide a second active travel crossing of the river Loddon. This link, which would be accommodated via a new foot / cycle bridge would then route through EcoValley toward Thames Valley Science Park via the connection that has already been safeguarded as part of the recent Natural History Museum works.

17.1.20. The internal primary streets within LVGV would also advance northwards through the District Centre area and, importantly, complete the internal primary street network with the road connection over the River Loddon. This will then enable buses to adopt routings through all development areas within LVGV. Moreover, the high quality footway / cycleway provision along the primary street corridors will provide a high level of connectivity throughout for active travel modes. This will then also open up the opportunity for a further pedestrian route to the north, on the western side of the river Loddon along the route of the proposed Long Distance River Path.

17.1.21. By 2032 / 2033, the implementation of the principal infrastructure routes within LVGV will have been completed as depicted on **Figure 17.5** below.

Figure 17.5: Infrastructure Sequencing - 2032/2033



17.1.22. Notably, the road connection over the M4 Motorway will be implemented by this time which will offer up an alternative access point onto the highway network for vehicular trip arising from LVGV. The bridge connection also contains high quality footway / cycleway facilities which will deliver a further active travel connection to the north.



18.0 Highway Network – 2032 Assessment

18.1. Introduction

- 18.1.1. Stantec, on behalf of WBC, undertook a review of the highway network operation in the 2032 forecast year to support the Reg.19 Local Plan. The results of the modelling exercise were reported within the Transport Assessment Addendum Report : 2032 Interim Year Assessment which forms part of the evidence base for the Local Plan Update.
- 18.1.2. The modelling exercise concluded that the proposed Local Plan development, particularly around Hall Farm / Loddon Valley, would result in increased traffic volumes and potentially increased congestion at key junctions. However, overall, the network is forecast to function reasonably well, even though there is a minor decline in performance on some local routes.
- 18.1.3. With respect to the Strategic Road Network, the analysis indicated that the proposed developments are unlikely to cause significant changes in traffic flows or journey times on the M4 mainline. Moreover, whilst the existing infrastructure at M4 Junctions 11 and 10 is forecast to operate close to capacity, the proposed development scenarios to do not significantly change conditions on these junctions.
- 18.1.4. The 2032 Interim Year Assessment report concluded that when allowing for an identified interim package of mitigation measures, traffic flows can be satisfactorily accommodated on the local and strategic road networks. Of particular note is that the interim measures did not include the provision of the new bridge crossing of the M4 motorway.

18.2. Updated 2032 Traffic Modelling

- 18.2.1. The refined traffic modelling undertaken to inform the University of Reading planning application builds upon the interim year modelling undertaken to support the Reg.19 Local Plan stage.
- 18.2.2. Importantly, the same suite of off-site interim highway improvement schemes that were allowed for at Reg.19 stage have been carried over to this assessment. Of note however is that some schemes have been subject to additional refinement in comparison to the versions presented by WBC previously.
- 18.2.3. The infrastructure sequencing work presented in **Section 17.0** of this Transport Assessment sets out how the package of on-site infrastructure and off site mitigation measures are programmed to be delivered in a timely manner so that the works are in place to accommodate the quantum of development that will be realised within the 2032 interim scenario. The timing, funding and delivery of the works are matters that are being secured within an Infrastructure Delivery Plan (IDP) for LVGV, thereby ensuring that implementation of the provision is coordinated and effective as the LVGV development progresses.
- 18.2.4. The proposed land use quantum for the 2032 scenario have also been refined to reflect the updated build out trajectory for LVGV. The most significant change is that the quantum of residential dwellings has been increased to 1,250 units, whereas the quantum of employment use within the Thames Valley Science Park expansion has been reduced to 20,000sqm.

Comparison with Previous Modelling

- 18.2.5. In the first instance, a review has been undertaken of the 'delay difference' plots for the updated modelling to ascertain how these compare with the outputs that informed the Reg 19. Local Plan assessment for the interim 2032 scenario. These outputs identify the additional queuing delay that is likely to occur at junctions as a result of the additional traffic arising from the LVGV development.



- 18.2.6. In general terms, the outputs from the updated modelling compare favourably with the previous assessment that were undertaken. As before, the increases in delay at junctions along the surrounding highway network are typically less than 30 seconds and hence are not considered to be significant. The increases in delay along the northbound approach to the Shinfield gyratory is more significant, although the magnitude is similar to that appraised within the previous assessment. Further consideration is given to the impacts at this location below.
- 18.2.7. The notable difference is that the updated modelling identifies fewer delays at junctions to the east of LVGV within the Sindlesham area, particularly along the Hatch Farm Way and Mole Road corridors. This improved network performance is because, unlike the earlier modelling, the refined assessment allows for the implementation of the internal street networks within LVGV, including a connection over the river Loddon Bridge to link to the Thames Valley Science Park. For the avoidance of doubt however, as with the earlier modelling, the 2032 interim scenario does not allow for the M4 bridge crossing over the motorway which connects to Lower Early Way.
- 18.2.8. It is readily apparent that the inclusion of the internal road infrastructure which will be in place by 2032 allows development traffic from all parcels within LVGV to access the network in a more direct and efficient manner that avoids the need for extraneous routings along the adjacent road network. Moreover, the internal roads within LVGV do allow some background traffic to be reroute within the development. Whilst this effect is not very significant, it does act to alleviate movements that would otherwise occur in neighbouring areas such as Shinfield and Sindlesham.
- 18.2.9. In broad terms therefore, the results from the updated 2032 modelling indicates that the level of impact across most areas of the network is comparable to the Reg 19. modelling work, albeit with lesser levels of impact within the Sindlesham area. Accordingly, the positive conclusions that were reached previously, namely that the interim package of mitigation measures allows traffic flows to be satisfactorily accommodated on the local and strategic road networks, remains valid.

Access Junctions

- 18.2.10. Given that it has already been demonstrated within **Section 15.0** of this Transport Assessment that access junctions are able to accommodate traffic flows arising from LVGV when fully operational, it would ordinarily follow that they would also be able to accommodate the lower level of trip generation in the interim year. However, mindful that the interim scenario does not allow for the beneficial effect of the LVGV and as a consequence, only four of the five LVGV points of access will be operational by 2032, for completeness a check of the approach flows has been undertaken at each junction.
- 18.2.11. Accordingly, **Table 18.1** compares the total approach flows at each of the access junctions for the 2040 'With Development' scenario with the respective flows for the 2032 interim scenario.

Table 18.1: Comparison of 2032 and 2040 'With Development' Flows at Access Junctions

Access Junction	AM Peak Hour			PM Peak Hour		
	2032	2040	Difference	2032	2040	Difference
Thames Valley Science Park Access Roundabout	2,442	3,022	-580	2,337	2,828	-491
Observer Way Access Roundabout	2,061	2,677	-616	2,068	2,713	-645
Mole Road Access Junction	1,484	1,558	-74	1,296	1,449	-153
Mill Lane Access Roundabout	1,400	1,661	-261	1,245	1,605	-360
Meldreth Way Access Roundabout	-	-	-	-	-	-



18.2.12. As can be seen, despite there being a lesser number of access points and also the absence of the M4 motorway bridge crossing, it is evident that the quantum of traffic utilising each of the access points in the 2032 scenario is lower than the flows used for the detailed capacity assessments undertaken for the 2040 scenario. It follows therefore that the performance of each of the access junctions (which were all shown to be satisfactory in the 2040 assessments) will be better in the 2032 interim scenario and hence there is no need to undertake further detailed capacity analysis.

Junctions along Adjacent Highway Network

18.2.13. A similar exercise has been undertaken for the junctions along the adjacent highway network to establish if there are any instances where the 2032 interim year flows are higher than the 20204 'with development flows which were used to inform the detailed appraisals within **Section 15.0** of this Transport Assessment. The findings are shown in **Table 18.2** below.

Table 18.2: Comparison of 2032 and 2040 'With Development' Flows at Adjacent Junctions

Access Junction	AM Peak Hour			PM Peak Hour		
	2032	2040	Difference	2032	2040	Difference
Mill Lane / Hatch Farm Way Link Roundabout	1,179	1,127	+52	1,084	1,079	+5
Hatch Farm Way / Hatch Farm Link Signals	2,368	2,321	+47	2,170	2,273	-103
Hatch Farm Way / Lower Earley Way Signal Junction	3,883	4,473	-590	3,528	4,204	-676
Lower Earley Way / Mill Lane / Rushey Way Roundabout	2,755	3,531	-776	2,550	3,198	-648
Shinfield Gyratory	5,684	6,320	-636	5,429	6,091	-662
Shinfield ERR / Arborfield Road Roundabout	2,142	2,464	-322	2,021	2,467	-446
Mill lane / New Road / Mole Road Roundabout	2,089	2,447	-358	1,953	2,310	-357

18.2.14. Again, it is evident from **Table 18.2** that, in most instances, the quantum of traffic utilising each of the adjacent junctions in the 2032 scenario is lower than the flows used for the detailed capacity assessments undertaken for the 2040 scenario. It follows therefore that the performance at these locations (which were shown to operate satisfactory in the 2040 assessments) will be better in the 2032 interim scenario and hence there is no need to undertake further detailed capacity analysis.

18.2.15. The two junctions associated with the Hatch Farm Way do however exhibit slightly higher flows in the 2032 AM peak hour scenario when compared to the 2040 'With Development' scenario which includes the M4 motorway bridge crossing. The difference in flow is no significant, amounting to approximately 1 vehicle every minute during the peak hour. Moreover, both these new junctions were shown to be operating within capacity for the 2040 scenario tests and are able to accommodate the slightly higher demand in the 2032 interim year scenario.

18.2.16. There are two locations that do however warrant further investigation, these being the Hatch Farm Way / Lower Earley Way signal junction and the Lower Early Way / Rushey Way roundabout. In these instances, the 2040 'With Development' analysis is based on highway improvement schemes that are not currently programmed to be implanted by 2032. Therefore, for completeness, detailed capacity assessments using the 2032 'With Development' flows have been undertaken based on the existing geometries of these junctions.



18.2.17. The results of the supplementary analysis for these two junctions are summarised in **Table 18.3** and **Table 18.4** below.

Table 18.3: Lower Earley Way / Mill Lane / Rushey Way Roundabout – 2032 ‘With Development’

	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	RFC	Queue	RFC
Lower Earley Way (E)	3	0.77	4	0.81
Mill Lane	1	0.05	1	0.05
Lower Earley Way (W)	2	0.67	1	0.59
Rushey Way	1	0.58	1	0.38

Source: Junctions 11 Output

18.2.18. As can be seen, the 2032 ‘With Development’ traffic flows can be accommodated satisfactorily based on the existing geometry of the Lower Early Way / Rushey Way roundabout. Notably, the absence of any significant queuing along the Mill Lane approach is as anticipated given that through traffic along the corridor will be restricted by 2032 as part of the access strategy for LVGV.

Table 18.4: Lower Earley Way / Hatch Farm Way Signals – 2032 ‘With Development’

Movement	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
	Queue	DoS	Queue	DoS
Lower Earley Way SB Ahead Left	11	83%	15	89%
Lower Earley Way SB Ahead	10	72%	14	87%
Hatch Farm Way Left	20	96%	16	90%
Hatch Farm Way Right	12	85%	6	57%
Lower Earley Way NB Ahead	29	95%	11	63%
Lower Earley Way NB Ahead Right	13	85%	14	88%

Source: LinSig Output

18.2.19. The 2032 ‘With Development’ assessment for the Hatch Farm Way / Lower Early Way signal junction indicates that the existing layout would operate within capacity during the AM and PM peak hours. Whilst it is evident that queueing does being to form at the junction, the capacity of each approach isn’t exceeded and hence the traffic arising from LVGV in the 2032 can be accommodated.

18.3. Summary

18.3.1. The interim year modelling undertaken by WBC to inform the Reg 19. Stage of the Local Plan Update concluded that when allowing for an identified interim package of mitigation measures, traffic flows can be satisfactorily accommodated on the local and strategic road networks in the 2032 scenario. Of particular note is that the interim measures did not include the provision of the new bridge crossing of the M4 motorway.

18.3.2. The refined modelling exercise undertaken to inform the planning application compares favourably with the previous assessments that were undertaken. This improved network performance is because, unlike the earlier modelling, the refined assessment allows for the implementation of the internal street networks within LVGV, including a connection over the river Loddon Bridge to link to the Thames Valley Science Park. This additional highway provision allows development traffic from all parcels within LVGV to access the network in a more direct and efficient manner that avoids the need for extraneous routings along the adjacent road network.

18.3.3. Accordingly, the positive conclusions that were reached previously, namely that the interim package of mitigation measures allows traffic flows to be satisfactorily accommodated on the local and strategic road networks, remains valid.



18.3.4. Notwithstanding, for completeness a review has been undertaken of the approach flows at the proposed access junctions and other junctions along the adjacent highway network to confirm that the 2032 'With Development' flows can be accommodated satisfactorily.



19.0 Summary and Conclusion

19.1. Summary

- 19.1.1. The Loddon Garden Village (LGV) development, promoted by the University of Reading, represents the largest element of the wider Loddon Valley Garden Village (LVGV) allocation set out in Wokingham Borough Council's Local Plan Update 2023–2040, which is due for examination in late 2025. The scheme proposes up to 2,800 new homes, alongside over 100,000 m² of employment space, primary and secondary education, and district and local centres. These are complemented by extensive areas of green infrastructure that will serve ecological, recreational, and placemaking functions.
- 19.1.2. The site benefits from a highly strategic location to the south of Reading, lying immediately within a short distance of the M4 motorway and bounded by the A327 and Lower Earley Way. This setting provides strong regional connectivity while also offering opportunities to integrate the development with surrounding communities. The scheme is designed to be phased, with transport and social infrastructure delivered in parallel with housing and employment space, thereby supporting sustainable patterns of growth and enabling the early establishment of a cohesive community.
- 19.1.3. The transport vision for LGV has been developed in line with the Local Plan Update and national transport policy. From the outset, the strategy has been shaped to prioritise walking, cycling and public transport, reflecting the NPPF's emphasis on sustainable and well-connected communities. The proposals are underpinned by an Illustrative Masterplan that places sustainability, accessibility, and active travel at its core. The concept of a "20-minute neighbourhood" is fundamental to this vision. Daily needs such as education, retail, leisure, and employment are being provided within a short walk or cycle of all homes. This is supported by a deliberate spatial strategy that locates key facilities centrally, linked by high-quality, direct, and safe routes.
- 19.1.4. Transport and placemaking are fully integrated within the proposals. This is not solely a matter of providing movement corridors, but of shaping the public realm in a way that reduces car dependency, promotes health and wellbeing, and fosters inclusive communities. The strategy emphasises multimodal connectivity, the internalisation of trips within the development, and strong links to neighbouring areas.
- 19.1.5. Active travel provision forms a cornerstone of the strategy. A comprehensive network of segregated footways, cycleways, shared paths, and landscaped greenways will permeate the site. Along the Primary Street corridor, dedicated 5-metre segregated routes for pedestrians and cyclists are complemented by 3-metre shared-use paths on the opposite side of the carriageway, supported by safe crossing points and clear wayfinding. This provision is supplemented by a comprehensive network of off-road paths thorough the considerable areas of greenspace being provided. Connections are also being delivered via new bridges over the River Loddon and the M4 motorway, eliminating severance and facilitating movement within LVGV and beyond.
- 19.1.6. A network of mobility hubs is also proposed, combining bus stops, cycle parking, car club bays and real-time information. These measures are intended to make sustainable travel more convenient than car use for many local journeys.
- 19.1.7. Beyond the site, a programme of off-site improvements is proposed to integrate LGV and the wider LVGV with the neighbouring catchment. These include new Toucan crossings, upgraded footways, and improved links towards Shinfield, Lower Earley, and Winnersh. Together, these measures underpin healthier travel choices and directly align with Wokingham Borough Council's Local Cycling and Walking Infrastructure Plan (LCWIP) and Greenways Strategy.



- 19.1.8. The public transport strategy demonstrates that future residents and all other users of LVGV will benefit from a high level of accessibility to bus services which are financially viable and therefore sustainable in the longer term. The strategy has been formulated on the basis of providing new services in a phased manner in order to deliver a 30 minute frequency which can increase to 20 minutes as the build-out of LVGV progresses. A flexible approach towards its implementation is advocated to ensure that the overall end-state provision is tailored to maximise public transport accessibility for the new residents at LGV and indeed the surrounding areas.
- 19.1.9. Vehicular access is carefully structured to provide choice and resilience. Five key access points are proposed across LGV: a new arm to the A327/Observer Way roundabout, an upgraded access to Thames Valley Science Park, a new overbridge to Lower Earley Way connecting to an upgraded roundabout on Lower Earley Way as well as connections via Mill Lane and Mole Road. Collectively, the access points allow development traffic to disperse effectively onto adjacent corridors, which reduces the effects of concentrating flows onto individual junctions or highway links. Moreover, the promotion of new highway infrastructure within LVGV itself, such as the new river crossing of the Loddon and bridge over the M4 motorway corridor, not only acts to facilitate the broad dispersal of development traffic but also helps to avoid extraneous routings that would otherwise occur along the road network, thereby provide some relief to adjacent areas such as within and around Sindlesham and Shinfield.
- 19.1.10. Within the development, streets are organised hierarchically into Primary, Secondary, and Tertiary categories, each designed to appropriate standards. The new River Loddon bridge and the M4 overbridge are particularly important items of infrastructure, facilitating multimodal movement while dispersing traffic effectively across the network.
- 19.1.11. Complementary off-site highway measures have also been identified through use of Wokingham Borough Council's traffic model. These include upgrades at M4 Junction 11, Hatch Farm Way, the Shinfield gyratory, along Lower Earley Way and in other locations at Sindlesham. Together, these interventions ensure that impacts are mitigated in a satisfactory manner and that the development integrates efficiently and safely with the existing highway network. Importantly, assessments have also been undertaken for an interim year scenario to demonstrate that the phased implementation of the on-site and off-site highway does not give rise to undesirable impacts during the intervening period as LVGV becomes fully built out.
- 19.1.12. Notably, a monitor and manage approach will be undertaken throughout the buildout of the development with sustainable travel measures prioritised in order to assist active travel and public transport measures to bed in early and avoid over delivery of highway improvements that could otherwise induce additional car trips. This approach will also help to define optimum timescales for delivery of off-site mitigation as well as ensuring improvements are delivered in a proportionate manner that ensures the surrounding highway network continues to operate effectively.
- 19.1.13. Trip generation has been forecast using a comprehensive methodology based on person trip analysis that reflects the site's context and planned infrastructure. At full build-out, the analysis suggests that 27% of AM peak and 23% of PM peak trips will be internalised within LVGV. Interim forecasts adopt more cautious assumptions, recognising that not all facilities will be available at early stages.
- 19.1.14. Conservative assumptions on mode share have been adopted to ensure robustness, thereby ensuring that impacts are not understated. Sensitivity testing has however been undertaken which demonstrates that higher levels of walking, cycling, and public transport uptake are readily achievable. The phasing strategy allows for these patterns to evolve over time as the community matures and supporting infrastructure is delivered.



- 19.1.15. The proposals are aligned with both national and local transport policy, including the National Planning Policy Framework (NPPF) and Wokingham Borough Council's Local Plan Update. Central to this alignment is a commitment to sustainable travel, inclusive access, and integration with existing settlements. The Framework Travel Plan sets out a suite of measures to encourage behaviour change, including the introduction of mobility hubs, provision of real-time travel information, and investment in supporting services to support the long-term shift towards sustainable modes.
- 19.1.16. In summary, the transport strategy for Loddon Garden Village provides a comprehensive and forward-looking approach that underpins the creation of a sustainable new community. It is designed to reduce reliance on the private car, deliver meaningful active travel opportunities, and ensure strong links to both local destinations and the wider region. The package of on-site and off-site measures responds directly to identified impacts while also advancing Wokingham Borough Council's objectives for healthy, well-connected places and contributing positively to the delivery of regional growth targets.
- 19.1.17. It is concluded that the development can be delivered without giving rise to severe residual cumulative impacts on the transport network, consistent with paragraph 116 of the NPPF. With mitigation secured, the proposed development will provide a balanced and policy-aligned transport strategy that prioritises sustainable modes, supports healthy lifestyles, and accommodates planned growth in a manner acceptable to both the local and strategic highway authorities.



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